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From the Editor's Desk ...✍

Dear Reader,

New Year Greetings to you from the Editorial Team of PJMTR! With this edition, *Presidency Journal of Management Thought & Research* enters its sixth year of uninterrupted publication -- thanks to contributions from readers like you. *Vive la compagnie!*

In the last (July-December 2015) issue of this blind peer-reviewed journal, you may have read the Editorial about how to enhance the publication-worthiness of one's contribution -- by paying attention to certain specific points while writing the Abstract and the full-length paper. When you want to publish something, you ought to make it publication-worthy, all right. But why publish? Why, indeed?

We are too familiar with the publish-or-perish refrain in the academic world to ignore it. But are there reasons more positive that could attract or “pull” academicians to write and publish rather than scare them with a deterrent against perishing? Take a look!

Publishing publicises you; your presence is noticed in your professional circle. With some initiative, sharing begins and you start interacting with professional colleagues from across the country and the globe. You may soon be on your way to a professional network that opens up possibilities of collaborative studies in the area of your interest.

Publication in peer-reviewed journals is an essential part of an academic professional's growth and development. Researching, analysing, interpreting and writing a paper that is presented in a conference and/or published in a professional journal are all activities that keep sharpening the academician's axe. When you present your research report or article in a conference or submit it for publication in a refereed journal, you get feedback from qualified professionals (the audience and/or the reviewers) free of charge! Look forward to the feedback, receive it on an iterative learning mode and work on it. With several iterations, your paper assumes a higher level of quality, becoming thereby publication-worthy, and you become an accomplishing professional -- in the eyes of professionals far and wide. Citations of peer-reviewed publications make your CV quite attractive to academic employers, who keep vying with one another in climbing up the institutional ranking ladder.

Writing and publishing takes a lot of time in the beginning; the iterative process may take months. If you start in earnest, discipline yourself to work hard and publish one paper a semester, it will have got easier with practice by the time your third paper is published in a blind peer-reviewed journal. Try it!

This new-year issue of PJMTR, Volume VI-1, brings for your reading pleasure: Two book reviews, a case study of customer segmentation, an article and five research reports. Happy reading!

Wishing you a research-rich & rewarding year of 2016,

M. J. Arul
Chief Editor

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Role of Promotional Strategies and Financial Affordability of Customers on Digital TV Usage: A Study in NCR of Delhi

Indranil Mutsuddi* & Mohit Vats**

Abstract

The use of Digital TV in homes, offices and institutions has become increasingly popular with the Cable TV networks going digital. Consumption of day-to-day or monthly digital TV services has become an important household activity like the use of mobile phones, internet services, etc. Although viewership of Digital TV is restricted to major metropolitan cities of the country like Delhi, Kolkata etc, it is, from the researcher's point of view, essential for us to understand the perception of the customers regarding the use of Digital TV. Digital TV service providers have given much importance to various marketing and promotional strategies through advertisement and campaigns which might have had a positive influence on TV watchers to procure digital TV connections in their houses instead of Cable TV connections. Taking this perspective into consideration, an attempt was made in this study to explore, analyze and check whether there was any influence of promotional strategies used by service providers on the usage of Digital TV, particularly in a metropolitan city like Delhi & NCR. The study was conducted in the Sahadara region of Delhi with a sample size of 50 respondents residing in the region. The study indicated that the respondents had given importance to issues like "Brand of the service provider" followed by "Financial Affordability", "Influence of relatives and neighbors", "Economy of the offer" and "TV Channel Variety" in that order for Digital TV usage. Monthly income of the respondent had a significant association with the respondent's monthly expenditure on Digital TV. For high digital TV usage "economy of the offer" was considered to be the most important purchasing factor, which was followed by "Promotional plans and influence of Advertising", and "Influence of relatives and neighbors". The study also indicated that promotional and advertisement strategy of the service provider(s) had significant correlation with Digital TV usage of the respondents. Financial affordability of respondents did not have any significant relationship with Digital TV usage. Considering the objectives and findings, the study opens up a wider scope of research on the perception of the customers and consumer behavior towards the usage of Digital TV, particularly with reference to the growing implications of various promotional strategies adopted by the service providers.

Introduction

Digital TV services in India are on a tremendous growth spree ever since its inception during January 2001 with the digitalization of Cable

TV (Jotheshwari, P., et al, 2014). This has been facilitated by rapid expansion of technology, facilitation of infrastructure development and service providers adopting competitive strategies for promoting the sales of Digital

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Service business across the country. The present study emphasizes on having an analytical perspective for understanding the role of financial affordability of customers and promotional and marketing strategies used by Digital TV service providers on the usage and buying behaviors of the consumers in the NCR of Delhi with reference to Delhi Sahadhara (Vivek Vihar region of Delhi).

Literature Review

According to a white paper published by KPMG (2015), Globally Digital TV conversion is expected to be complete by the year 2020. This report indicates that this would create an immense demand for Digital TV services in developing countries like India where TV network digitalization process are on the verge of completion. Considering this fact, insights for researches on the use of digital TV and customer perceptions on the same would be deemed to be important.

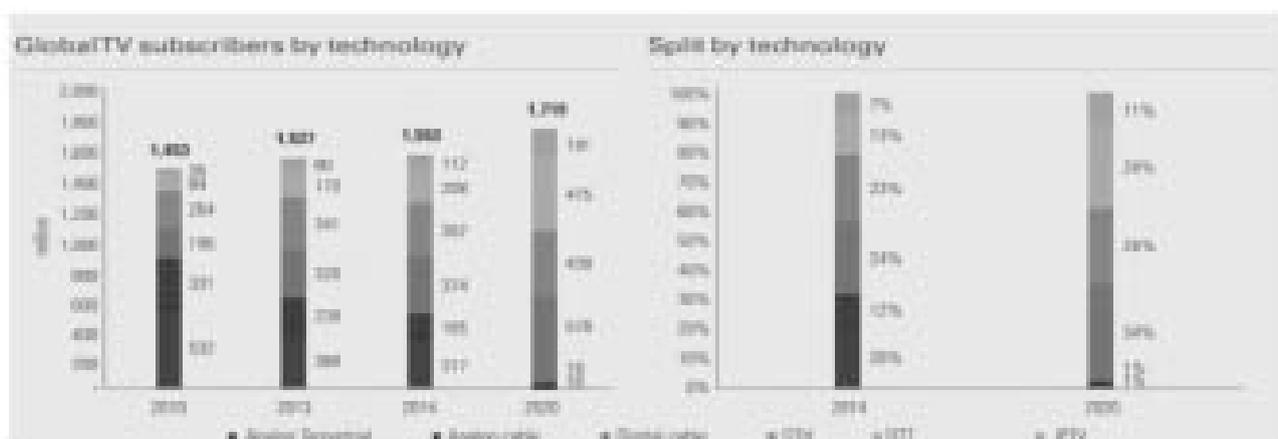


Fig 1: KPMG Report on the Global Digital TV Usage

[Courtesy: https://www.kpmg.com/IN/en/IssuesAndInsights/ArticlesPublications/Documents/FICCI-KPMG_2015.pdf]

It can be mentioned that, according to Telecom Regulatory Authority of India (TRAI, 2010) guidelines, Digital TV operators should ensure that customers should have the choice of channels enabling them to pay for the same according to their financial affordability.

Adda & Ottaviana (2005) in their study had presented a perspective regarding the transition of cable TV network into digital television. Technical developments in Digital TV technology had gained rapid development in recent years and this had immensely boosted the sales of Digital TV (Farrell, J. and Shapiro, C., 1992). Researchers like Kasuga et al (2011) in a study in Japan had presented the analysis of

demand for new devices from terrestrial broadcasting to Digital TV networks. Research works of Tadayoni, R. and Skouby, K. E. (1999) provided the information regarding Terrestrial digital broadcasting, its convergence and its regulatory implications for consumer usage.

Research work on consumer perception towards Digital TV usage was taken up by a handful of research scholars. One notable contribution was that of Cha-Olmsted & Chang (2006) who presented a study regarding perceptions and factors affecting the adoption intent of terrestrial digital television. Similarly Kim, Y. (2005) made an estimation of consumer preferences on new telecommunications services in Korea.

In the Indian context, Jayashree and Sivakumar (2013) had conducted a study on consumer perception towards the use of DTH services in Coimabtoe, Tamil Nadu. The study revealed that the consumers of DTH services in the city of Coimbatore preferred to purchase SUN direct TV services because of its best picture quality, reasonable price, various packages and availability of more channel options for viewing. In a similar study conducted by Srikanth, R, and Pannaga, V. (2013) it was found that, level of satisfaction of the consumers of DTH services in the area surveyed were more with regards to the number of channels and better picture quality. Senthilkumar & Nagarajan, N.R. (2012), had studied subscriber's attitude and perception on DTH Services. Whereas Avani and Kruika (2009) in their study had highlighted the usage, benefits and limitations of DTH TV. Another similar study was conducted by Samson, T. and Dhinakaran, J., (2012) in the city of Palayamkottai. Jena, A.B., (2013) in a study conducted in the Balasore and Cuttack districts of the state of Odissa had shown that the respondents expressed their discontent and complaint against the DTH services in the region. Rajput U S & Sharma A K, (2012) had conducted a study on customer satisfaction towards service quality in DTH services in Gwalior region. Reddy (2013) in his study had assessed the factors motivating customers towards DTH services in the state of Andhra Pradesh.

Statement of the Problem

The literature review had revealed a gap in research evidence on customer perception regarding the role of financial affordability and promotional strategies used by service providers on the use of Digital TV. Regarding the influence of various factors influencing Digital

TV use in and around NCR of Delhi region hardly any research evidence had been found. Taking this perspective into consideration, an attempt has been made in this study to explore and analyze whether there is any influence of promotional strategies of service providers and financial affordability of the customers on the usage of Digital TV, particularly in and around the NCR of Delhi. The study has also ensured to highlight on the general perceptions and buying behaviors of the customers towards Digital TV usage.

Objectives of the Study

The study was based on the following objectives, namely:

- To assess whether the promotional strategies used by digital TV operators had any influence on customer choice
- To identify whether financial affordability of the customers had any role regarding the use of Digital TVs.
- To study customer perception on the use of digital TV.
- To identify factors influencing customer choice regarding digital TV in and around the NCR of Delhi.

Hypothesis

- Financial affordability of the customers do not have any significant relationship with the use of Digital TVs (H1).
- Promotional strategies used by digital TV operators do not have any significant relationship with customer choice (H2).

Research Methods

The present study adopted descriptive research design. As the researchers had an infinite population based on the Shahadara, Vivek Vihar Delhi, the study adopted convenience sampling

method for data collection from a sample size of 50 respondents residing in Sahadhara (Vivek Vihar) NCR of Delhi. Primary data was collected by administration of questionnaire. Secondary data was collected from internet resources, books and journals.

Questionnaire Design

In order to collect respondent opinion on the use of Digital TV, a questionnaire was designed and distributed among the 50 respondents residing in Sahadhara region of Vivek Vihar, Delhi. The questionnaire was based on two sections. The first section mainly consisted of closed ended questions covering the age, income level, gender, occupation, and income level of the respondents. The second section consisted of closed ended questions asking the usage level of digital TV, monthly expenditure on Digital TV usage, choice of Digital TV service Provider. In order to identify the role of various factors on digital TV use, the respondents were asked 32 questions (statements) using a five point Likert Scale (1=Strongly Disagree, 2=Disagree, 3=Can't Say, 4=Agree, 5=Strongly Agree). Out of these 32 questions, 4 questions were set in order to collect respondent opinion on a factor influencing the use of Digital TV. In this way the 32 question sets were broadly categorized under 8 factors namely, "Economy", "Affordability", "Offer", "Channel variety", "Promotional Plans", "Influence of Relatives & neighbors", "Service of the service provider", "Brand".

Data Collection Period

The respondents were given 15 days time (in the month of February 2015) to fill up the questionnaire. The researchers ensured to collect the responses by personally meeting each of the respondents.

Data Analysis: Data collected were analyzed by using SPSS and Ms Excel applications.

Data Analysis

Respondent Profile

Age Profile of the Respondents

Table 1 illustrates the age profile of the respondents. As revealed in Table 1, 30% of the respondents belonged to the age group of 21-25 years followed by 24% belonging to <20 Years age category. 8% of the respondents belonged to the age category of >41 years followed by 16% belonging to 36-40 years age group.

Table 1: Age Profile of the Respondents

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<20Yrs	12	24.0	24.0	24.0
	21-25Yrs	15	30.0	30.0	54.0
	26-30Yrs	6	12.0	12.0	66.0
	31-35Yrs	5	10.0	10.0	76.0
	36-40Yrs	8	16.0	16.0	92.0
	>41Yrs	4	8.0	8.0	100.0
	Total	50	100.0	100.0	

Income Level of the Respondents

Table 2 illustrates the income level of the respondents. 42% respondents belonged to the "below Rs 2 Lakh/month" monthly income group, followed by 38% in the "Rs 2-4 Lakh/Month" and 20% in the "Rs 4-8 Lakh/Month" groups

Table 2: Income level of the Respondents

		Income Level			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below Rs 2 Lakh/month	21	42.0	42.0	42.0
	Rs 2-4 Lakh/month	19	38.0	38.0	80.0
	Rs 4-8 Lakh/month	10	20.0	20.0	100.0
	Total	50	100.0	100.0	

Gender Profile of the Respondents

Table 3 depicts the gender profile of the respondents. Table 3 indicates that, 88% of the respondents were male and 12% were female..

Table 3: Gender Profile of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	44	88.0	88.0	88.0
	Female	6	12.0	12.0	12.0
	Total	50	100.0	100.0	

Occupation Profile of the Respondents

Table 4 depicts the occupation profile of the respondents. Regarding occupation (Table 4), 32% respondents were from business background. Similarly 32% of the respondents belonged to service occupation. 2% had self employment. 34% were students.

Table 4: Occupation Profile of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Business	16	32.0	32.0	32.0
	Service	16	32.0	32.0	64.0
	Self Employment	1	2.0	2.0	66.0
	Student	17	34.0	34.0	100.0
	Total	50	100.0	100.0	

Cross Tabulation of Income & Occupation of the Respondents

It is evident from table 5 that, 25% of the respondents having business as occupation had monthly income below Rs 12 Lakh/month. 43.8% of businessmen were in the income category of Rs 4-8 Lakh/month.

Table 5: Cross Tabulation of Income & Occupation of the Respondents

Income Level * Occupation Crosstabulation

		Occupation				Total
		Business	Service	Self Employment	Student	
Income Level Below Rs 2 Lakh/month	Count	4	0	0	17	21
	% within Income Level	19.0%	.0%	.0%	81.0%	100.0%
	% within Occupation	25.0%	.0%	.0%	100.0%	42.0%
Rs 2-4 Lakh/month	Count	5	13	1	0	19
	% within Income Level	26.3%	68.4%	5.3%	.0%	100.0%
	% within Occupation	31.3%	81.3%	100.0%	.0%	38.0%
Rs 4-8 Lakh/month	Count	7	3	0	0	10
	% within Income Level	70.0%	30.0%	.0%	.0%	100.0%
	% within Occupation	43.8%	18.8%	.0%	.0%	20.0%
Total	Count	16	16	1	17	50
	% within Income Level	32.0%	32.0%	2.0%	34.0%	100.0%
	% within Occupation	100.0%	100.0%	100.0%	100.0%	100.0%

Usage of Digital TV

The respondents were asked how much time they spent in a day on an average for using Digital TV. Usage of “0-1 hours” was categorized as very low usage, “1-2 hours” as low usage, “2-5 hours” was indicated as moderate usage, “5 hours and above” was indicated as high usage.

Table 6 depicts the usage of Digital TV by the respondents. It is seen that, 58% of the respondents were of the opinion that they were moderate users of Digital TV, 30% were high users, 10% were low users and 2% low users.

Table 6: Usage of Digital TV

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low User	1	2.0	2.0	2.0
	Low User	5	10.0	10.0	12.0
	Moderate User	29	58.0	58.0	70.0
	High User	15	30.0	30.0	100.0
	Total	50	100.0	100.0	

Monthly Expenditure for Digital TV Usage

The below mentioned analysis (table 7) illustrates the monthly expenditure incurred by the respondents for Digital TV Usage. It is evident from Table 7 that, 58% of the respondents spent “Rs 300-500/month” for their digital TV, followed by 30 % spending “Rs 200-300/month”. 10% respondents spent “Rs 200/month” and 2% spent “> Rs 500/month”.

Table 7: Monthly Expenditure for Digital TV Usage

Expenditure on Digital TV

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rs 200/Month	5	10.0	10.0	10.0
	Rs 200-300/Month	15	30.0	30.0	40.0
	Rs 300-500/Month	29	58.0	58.0	98.0
	>Rs 500/Month	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Monthly Income of Respondents Vs Monthly Expenditure for Digital TV

The following analysis (table 8.1 & 8.2) depict the interrelationship between monthly income of the respondents and their monthly expenditure on Digital TV usage.

Table 8.1 Chi-Square Analysis: Monthly Income of Respondents vs Monthly Expenditure for Digital TV

Test Statistics		
Expenditure Income Level on Digital TV		
Chi-Square	4.120 ^a	37.360 ^b
Df	2	3
Asymp. Sig.	.127	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 16.7.

b. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 12.5.

Table 8.2 Anova Analysis Descriptives Expenditure on Digital TV

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Below 2 Lakh/month	21	2.57	.598	.130	2.30	2.84	1	3
2-4 Lakh/month	19	2.47	.905	.208	2.04	2.91	1	4
4-8 Lakh/month	10	2.50	.527	.167	2.12	2.88	2	3
Total	50	2.52	.707	.100	2.32	2.72	1	4

Anova

Expenditure on Digital TV

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.100	2	.050	.097	.008
Within Groups	24.380	47	.519		
Total	24.480	49			

Table 8.1 & 8.2 indicate that, monthly income of the respondents had significant association with respondent monthly expenditure on Digital TV.

Opinion Regarding Digital TV Service Providers Subscribed by the Respondents

Table 9 illustrates the analysis of respondent opinion regarding the Digital TV Service Providers subscribed by the respondents.

Table 9: Respondent Opinion Regarding Digital TV Service Provider Subscribed by the Respondents

Digital TV Service Provider Subscribed by Respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Airtel	12	24.0	24.0	24.0
	Videocon	7	14.0	14.0	38.0
	Tata Sky	1	2.0	2.0	60.0
	Dish TV	12	24.0	24.0	84.0
	Others	8	16.0	16.0	100.0
	Total	50	100.0	100.0	

24% of the respondents subscribed Airtel Digital TV as well as Dish TV respectively. 22% subscribed Tata Sky, followed by 14% using Videocon and 16% using other Digital TV connections.

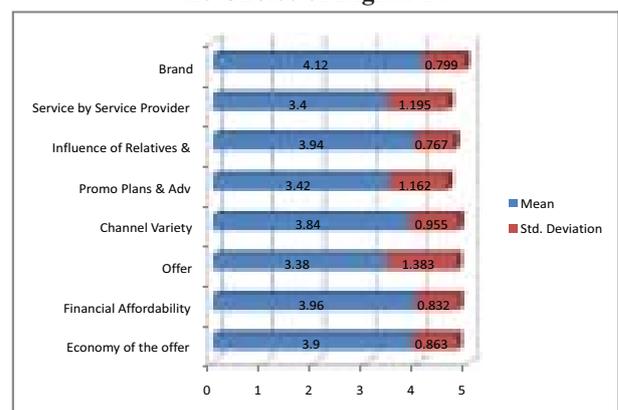
Opinion Regarding the Role of Various Factors Influencing the Choice of Digital TV

The following analysis (table 10) depicts respondent opinion regarding the role of various factors influencing the choice of Digital TV.

Table 10: Role of Various Factors Influencing the Choice of Digital TV

Descriptive Statistics			
	N	Mean	Std. Deviation
Economy of the offer	50	3.90	.863
Financial Affordability	50	3.96	.832
Offer	50	3.38	1.383
Channel Variety	50	3.84	.955
Promo Plans & Adv	50	3.42	1.162
Influence of Relatives & Service by Service Provider	50	3.94	.767
Brand	50	4.12	.799
Valid N (listwise)	50		

Fig 2: Role of Various Factors Influencing the Choice of Digital TV



It is clear from above that, Brand of the service provider received highest mean score of 4.12. This was followed by “Affordability” having mean score of 3.96, “Influence of relatives and neighbors” with a mean score of 3.94, “Economy of the offer” with the mean score of 3.90 and “Channel Variety” with the mean score of 3.84.

Digital TV Usage Vs Factors Influencing Choice of Digital TV

The following analysis depicts “Exploratory Factor Analysis (EFA)” of the various parameters influencing the choice of Digital TV. The test had been conducted in order to reduce the number of variables influencing the usage of Digital TV. The analysis has been considered only in the case where Digital TV usage is considered to be “high”.

Before conducting the EFA it was important to assess the coefficients of correlation between the various variables (depicted by Table 11.2) and Kaiser-Meyer-Olkin's measure of sampling adequacy along with Bartlett's test of sphericity.

Table 11.1 KMO & Bartlett's Test
KMO and Bartlett's Test^a

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.877
Bartlett's Test of Sphericity	Approx. Chi-Square	38.092
	Df	28
	Sig.	.007

a. Only cases for which Digital TV Usage = High User are used in the analysis phase.

KMO test analysis indicates the sampling adequacy score of 0.877 which was well above the critical value of 0.5 depicting good inter-correlations amongst the variables investigated. Results of Bartlett's test of sphericity depicted an approximate Chi-Square score of 38.02 with

0.007 significance level at a degree of freedom of 28 further showing the acceptance of the EFA analysis. Further, correlation matrix was computed as depicted below:

Table 11.2: Correlation Matrix Table

Correlation Matrix^a

	Economy of the offer	Financial Affordability	Offer	Channel Variety	Promo Plans & Adv	Influence of Relatives &	Service by Provider	Brand	
Correlation	Economy of the offer	1.000	-.192	.122	.214	.579	.534	.128	.290
	Financial Affordability	-.192	1.000	-.051	.045	-.378	-.161	.106	-.276
	Offer	.122	-.051	1.000	.570	.113	.199	.131	.000
	Channel Variety	.214	.045	.570	1.000	-.049	.523	.344	.000
	Promo Plans & Adv	.579	-.378	.113	-.049	1.000	.045	.167	.715
	Influence of Relatives &	.534	-.161	.199	.523	.045	1.000	.121	-.315
	Service by Provider	.128	.106	.131	.344	.167	.121	1.000	.059
	Brand	.290	-.276	.000	.000	.715	-.315	.059	1.000
Sig. (1-tailed)	Economy of the offer		.246	.332	.222	.012	.020	.325	.147
	Financial Affordability	.246		.429	.437	.083	.283	.353	.160
	Offer	.332	.429		.013	.345	.239	.321	.500
	Channel Variety	.222	.437	.013		.431	.023	.105	.500
	Promo Plans & Adv	.012	.083	.345	.431		.437	.276	.001
	Influence of Relatives &	.020	.283	.239	.023	.437		.334	.126
	Service by Provider	.325	.353	.321	.105	.276	.334		.417
	Brand	.147	.160	.500	.500	.001	.126	.417	

a. Only cases for which Digital TV Usage = High User are used in the analysis phase.

Table 11.3: Computation of Total Variance
Total Variance Explained^a

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.458	30.724	30.724	2.458	30.724	30.724
2	2.001	25.010	55.735	2.001	25.010	55.735
3	1.167	14.591	70.325	1.167	14.591	70.325
4	.953	11.909	82.234			
5	.704	8.795	91.030			
6	.443	5.535	96.565			
7	.195	2.434	98.999			
8	.080	1.001	100.000			

Extraction Method: Principal Component Analysis.

a. Only cases for which Digital TV Usage = High User are used in the analysis phase.

Table 11.4: Computation of Communalities

Communalities ^a		
	Initial	Extraction
Economy of the offer	1.000	.715
Financial Affordability	1.000	.477
Offer	1.000	.495
Channel Variety	1.000	.793
Promo Plans & Adv	1.000	.877
Influence of Relatives & Service by Service Provider	1.000	.904
Brand	1.000	.850

Extraction Method: Principal Component Analysis.

a. Only cases for which Digital TV Usage= High User are used in the analysis phase.

Table 11.5: Rotated Component Matrix Table

Rotated Component Matrix ^{a,b}			
	Component		
	1	2	3
Economy of the offer	.785	-.052	.340
Financial Affordability	.422	.355	.416
Offer	.445	.450	.308
Channel Variety	.522	.682	.233
Promo Plans & Adv	.738	.569	.087
Influence of Relatives & Service by Service Provider	.526	.583	.536
Brand	.499	.688	.359

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

b. Only cases for which Digital TV Usage = High User are used in the analysis phase.

The above factor analysis (illustrated by the Rotated Component Matrix Table 11.5) shows that, for high digital TV usage “economy of the offer” of the package was considered the most important purchasing factor (Component Matrix Score of 0.785). This was then followed by the “Promotional plans and influence of Advertising” (Component Matrix Score of 0.738). “Influence of relatives and neighbors” was another important factor with a component

matrix score of 0.526. Channel variety (component matrix score .522) also seemed to be important for digital TV usage.

Interrelationship between the Financial Affordability of Respondents and Promotional & Advertisement strategy on Digital TV Usage

Table 12 summarizes the interrelationship between respondent's financial affordability and promotional & advertisement strategy on Digital TV usage.

Table 12: Interrelationship between the Financial Affordability of Respondents & Promotional & Advertisement strategy on Digital TV Usage

Variable	P Value	Sig (2-tailed)	Accept/Reject H ₀	Influence of Causal variable on Digital TV Usage
Financial Affordability	0.5649	0.397	Accept H ₁	No
Promotional and Advertisement Strategy	0.0301	0.000	Reject H ₂	Yes

It is clear that promotional and advertisement strategy of the service provider had significant correlation with Digital TV usage of the respondents.

On the other hand financial affordability of the respondents had no correlation with Digital TV usage.

Discussions

The study has brought out some interesting facts and figures regarding the opinion of the customers on the use of Digital TV. The first being, “Brand of the service provider” receiving highest mean score of 4.12. This was followed by “Financial Affordability” having mean score of 3.96, “Influence of relatives and neighbors”

with a mean score of 3.94, “Economy” with the mean score of 3.90 and “Channel Variety” with the mean score of 3.84.

On the other hand, monthly income of the respondents had significant association with respondent monthly expenditure on Digital TV showing that economic or financial affordability was an important factor behind usage of Digital TV.

For high digital TV usage “economy” of the offer was considered the most important purchasing factor (Rotated Component Matrix Score of 0.785). This was then followed by the “Promotional plans and influence of Advertising” (Rotated Component Matrix Score of 0.738). “Influence of relatives and neighbors” was another important factor with a component matrix score of 0.526. Promotional and advertisement strategy of the service provider had significant correlation with Digital TV usage of the respondents. However financial affordability of the respondents had no correlation with Digital TV usage.

Conclusions

Based on the findings of the study it may be inferred that economy of the offer i.e. Digital TV service had emerged as the most important contributing factor influencing the purchase decision of the customers. At present as most of the Digital TV packages are costly this is reflected clearly in the opinion given by the respondents. Service providers have to come out with a better “Packaging of Digital TV Services that is financially affordable” which is economic for the usability of the middle class people. As the present research had indicated significant correlation between promotional and advertisement strategy with Digital TV usage, varieties of promotional plans could be re-

worked as per the varying needs and expectations of the customers. Promotional offers could be introduced for encouraging regular monthly recharges done by existing customers. As no interrelationship between financial affordability and digital TV usage had been found, there could be a need for further research or studies on this issue. Customer satisfaction in terms of service-support need to be ensured so that more and more satisfied customers could influence new users including their relatives and neighbors for purchasing Digital TVs for their homes.

It may be further concluded that, although the study has brought interesting findings and insights on the usage of Digital TV in and around NCR of Delhi with reference to Sahadhara region, it could be considered to be inconclusive considering the scope of detailed research in other cities in India to bring about a clear picture regarding the needs, taste and preferences of the customers on Digital TV usage.

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Web 2.0 and SNS: Their Impact on Young Stakeholders and the Marketing Strategy of a Firm

Som Sekhar Bhattacharyya*

Abstract

The study attempts to understand the manifestations of young Indians participating in various Web 2.0 platforms and Social Networking sites (SNS). Qualitative data was captured through longitudinal continuous iterative open ended unstructured interview interaction with 37 individual users (aged 18-28) of Web 2.0 platforms and social networking sites in India. Thematic content analysis was done on the data collected. Various reasons for the popularity of SNS by Indian youth as well as materialization and the nature of usage of SNS were discovered. Logical reasoning was applied to provide a framework regarding the transformation of the marketing function of a firm because of the advent of SNS participation by young individual stakeholders. Both the findings and the proposed framework would help managers to design a better marketing mix and take more effective stakeholder addressing decisions. The insights discovered are rich and novel. The framework provided here is also a unique reflection of the new firm and young individual stakeholder landscape that is needed in the context of Web 2.0 platforms and SNS.

Introduction

It is no news to state that the coming of the Social Networking Sites (SNS) has been altering the very basics of the social fabric of the world. The story for India should be no different to what had been happening in the developed West. The reach of SNS in India has mostly been restricted to the middle class and the rich who live in urban areas and have access to the internet. The Indian middle class and the rich have been estimated to be about 550 million strong, though there has been much difference of opinion regarding this number. Also it is quite well established now that the Indian middle class acts in their own way (Varma, 2007; Srinivas, 2008; Bijapurkar, 2007) which has been very different from their

economically similarly positioned westerners. SNSs and Web 2.0 platforms are giving new voice to stakeholders.

Literature Review

The Strategic Shift in the Stakeholder Management Function

'Stakeholder Theory' underlies the duties and responsibilities of the firm and its stakeholders (Donaldson and Preston, 1995; Freeman, 1984). Stakeholders have network power effects (Rowley, 1997), which has a compounding effect on the social impressions regarding a firm. It is important for firms to manage the social impressions because human beings demonstrate herd behavior (Banerjee, 1992). This is further

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more important because crowds (aggregation of stakeholders in this case as opinion providers) do have wisdom (Surowiecki, 2004). Web 2.0 and the Social Networking Sites (SNS) are making firm-stakeholder interaction a two way, continuous and iterative communication often in a neutral medium (sustainability.com, 2009; Murningham, 2010). The implications of Web 2.0 on firms has been studied for business model alteration (O'Reilly, 2005; Briggs, 2003), firm boundary (Bhattacharyya, 2011a) and corporate governance (Bhattacharyya, 2011b). Such platforms could also be integrates to an open innovation (Chesbrough, 2006) fabric of a firm. There is very limited literature as to why the young individuals, (the youth) participate in SNS and other Web 2.0 platforms in the first place. The participation of youth on SNS and Web 2.0 platforms is the factor input side. Extant literature, though limited, focuses on the output side of SNS and Web 2.0 platforms. It is important to explore this research gap and seek to answer the same in the context of India. This is the task that this paper attempts to accomplish.

Data Collection and Data Analysis

To get the perspectives regarding the participation of Indian youth in SNS and Web 2.0 platforms 37 individuals between the age group of 18- 28 years were interviewed using an unstructured open ended questionnaire (Corbetta,2003). The in-depth interviews were personally administered and were longitudinal and iterative. Such qualitative interviews are prescribed for exploring social phenomenon (Blaikie, 2000).The interviews were closed upon reaching of thematic saturation as consistent in literature. The interviews were content analyzed (Popping, 2000; Weber, 1990) for securing thematic insights regarding the needs and impressions for the contribution and

participation by the India youth towards SNS and Web 2.0 platforms. The thematic insights have been provided subsequently as bullet points.

- For the Indian youth being in the SNS threads stands for “being sophisticated “being in”, “being updated”, “being modern”.
- For the youth participating in the Web 2.0 Platforms entails “being knowledgeable, erudite, learned” amongst the peers.
- Not participating in SNS stands for being “outdated or not smart enough”.
- In social networking sites individuals want to present their best state of affairs. Even today in India, going to a developed country is a big deal, so if someone makes a trip to a developed country then he/she would post it on the SNS. If there is even one photo that has to be displayed, that will be the one pictured and set in the developed western country. It seems today's Indian youth are also imprisoned in the past of colonial west imperial supremacy and they seek reverence in such affiliation.
- Individuals generally post something good about him or her with the anticipation of a positive response by others. This is open sharing of one's life on the site for all to see rather than it being confined within the four walls of closed proximity social network. The good that one does has to be highlighted openly for all to know and the positive comments posted reciprocating towards this act or deed fuels self-gratification that one receives. This, 'show off' business is very strongly present in the SNS netizen. Self-boasting and self-aggrandizing is ok and everyone is fine with

it. If you tell X= 10, people know X is at best 6 or 7, discounting is a way of life in SNS communications.

- In the SNS, young individuals are more interested to discover about others rather than presenting about self. This is what SNS are meant to be, about connecting by knowing others. This becomes so engaging that over a period of time some felt that certain individuals contemplate the lives of others more than their own. One spends time more on discovering and digging details about others than you spend reflecting on yourself. Indulging about others takes precedence over self-introspection.
- Individuals notice the brand people are talking about, the brands their friends are wearing in their posted photos!
- It is prudent to state that there are varying and different opinions regarding the use of SNS in India.
- The individuals who have really close relationships with one another withdraw from using the SNS and prefer to get into more personalized means of communication like telephones, emails and even face to face interaction between each other.
- SNS are meant for secondary relationships or sort of distant group based individuals. Close relationships are not expressed in the SNS as it can catch the attention of others and thus can be stimulated with communication that can harm the close relationship between the two individuals. So SNS are in essence about the periphery of relationships not the core of relationships.
- The websites mentioned in the top 20/30 SNS are actually even popular in India as well with some Indian SNS (theindiastreet, 2007; seomoz, 2010).
- Herd mentality (Banerjee, 1992) is very evident in the SNS and Web 2.0 platforms. If an opinion leader starts doing something in a certain way which gets reflected and is apparent in the entries in the SNS then there is a tendency that the other youngsters pick up the cue and this sets in a trend very quickly. This is similar to viral marketing (Scott, 2008). The speed of this social aping can gain momentum within few days and this is unparalleled compared to any other media standards, be it television or newsprint/ magazine. Herd mentality (Banerjee, 1992) is fostered through the SNS which marketers must heed to.
- When the individuals do any entry in any SNS or Web 2.0 platform, they feel that they are creating a buzz. This gives them an exhilarating feeling. To create something which can be viewed on the internet fills one with sense of achievement which is unparalleled to anything being done in the classroom or in school or in the neighborhood playground / art / cultural festival as young individual in society.
- The creation can vary - it can be a witty scrap, an intelligent tweet, a funny picture, a hilarious video or a blog expressing disappointment about the sports performance of the Indian cricket team. A youngster feels that a creation in his room can reach Europe, across Atlantic and the distant Australia. He gets a feeling of being empowered. Such creations are a celebration of life for these individuals who are otherwise lost in the real world of

competition for a career in engineering or medicine or just the college exams. Web2.0 (O'Reilly, 2005) is the platform for creation (Tapscott and Williams, 2006; Jarvis, 2009).

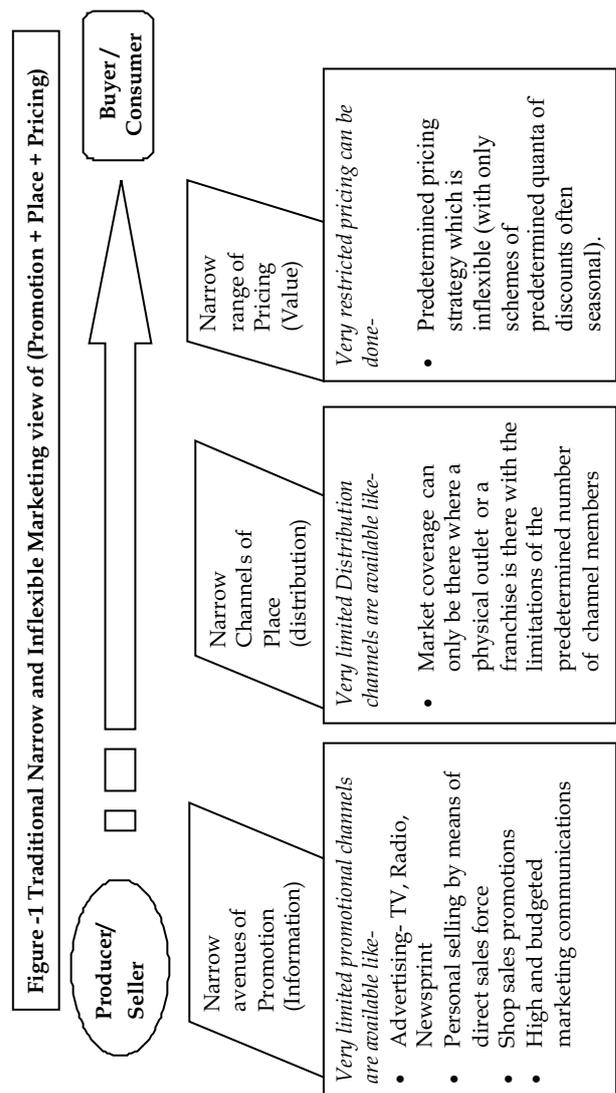
The captured themes regarding the participants needs and their participation in Social Networking Sites and Web 2.O platforms in India has both theoretical implications for researchers as well as practice oriented ramification for managers. These issues have been discussed in the next section.

Conclusions, Discussion and Future Directions

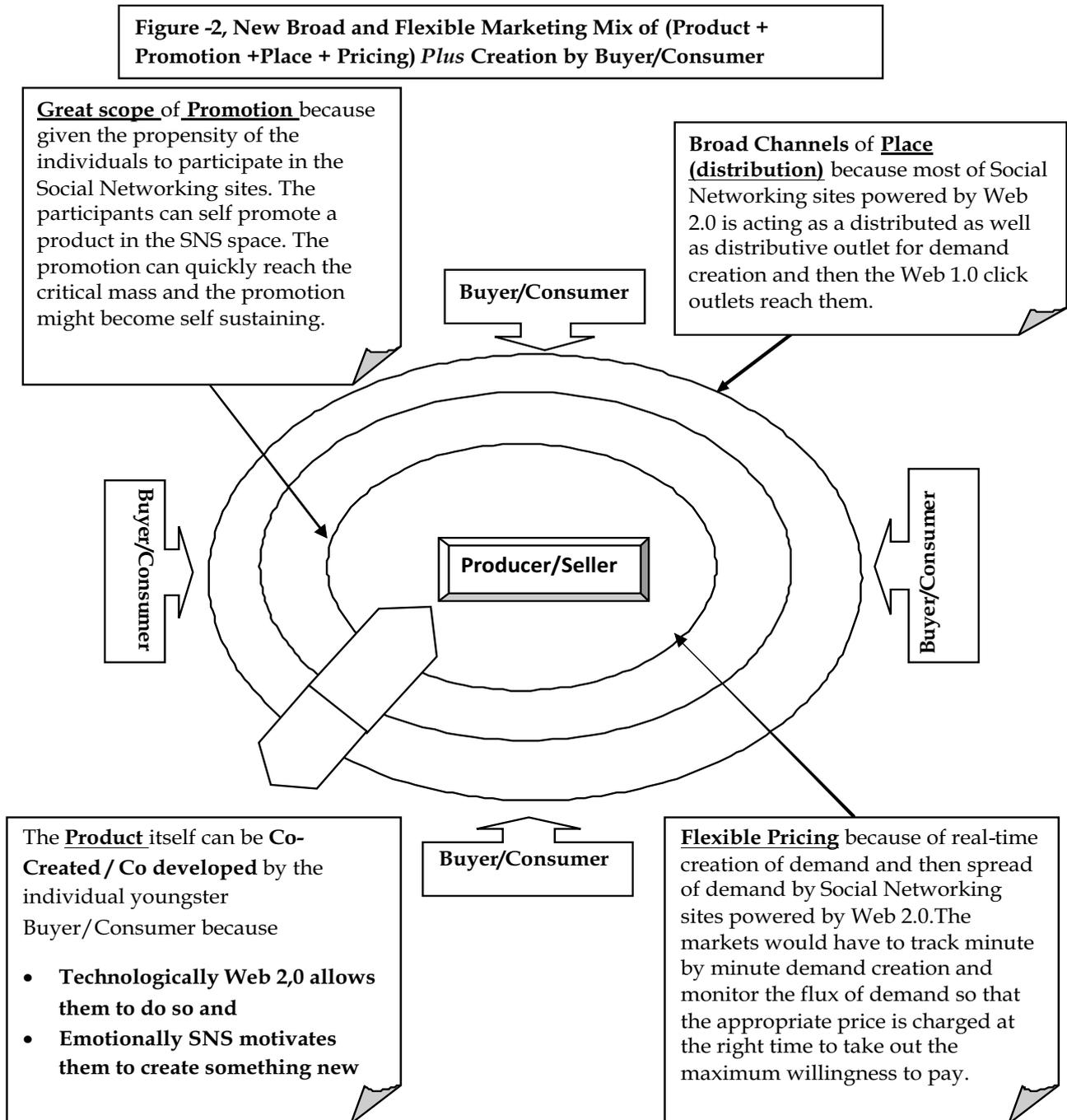
The firm spread social fabric gets reflected in the way firm stakeholder management function is carried out by a firm (Freeman, 1984). But before one gets into the implications of the advent of SNS and Web 2.0 for the stakeholder management (and also importantly for the marketing function (Kotler, Keller, Koshy and Jha, 2007) of a firm, it is important to note that participation of youths on SNS and Web 2.0 is continuous, spontaneous, veracious, germane and most importantly uninhibited (Bhattacharyya, 2011b) . The points that were unraveled based upon longitudinal (two years) continuous iterative interaction and inputs from individuals, 18-28 years age group users of social networking sites opens up a vista implying that firm- stakeholder engagement is going to change in ways unseen and challenging.

The idea that firm- stakeholder involvement strategy has to adapt to this situation is tautological (Evans, 2009; Gilbert, 2009) now. What is important is to comprehend in what ways will the firm – stakeholder equations change. Indian internet users now rank as the

second highest in terms of creating a social networking profile (emarketer, 2009). In 2009 almost 4 out of every five Indian internet users had a SNS profile (emarketer, 2009). This indicates that there is going to be a lot of business potential by the medium of SNS specially in India (seomoz, 2010; theindiastreet ,2007) and countries like India (Evans ,2009 ; Tapscott and Williams, 2006; Jarvis, 2009). First, the firm function of market will be touched by the new developments .What does it mean for strategic direction for a firm is most important regarding the marketing side. In essence the marketing philosophy (Kotler,Keller,Koshy and Jha,2007) till date can be represented as shown in figure-1.



Traditionally it was all about Promotion + Place + Pricing for firm stakeholder engagement in the stakeholders' as market angle. Hardly anything could be done regarding the Product. In the SNS and with Web 2.0 the very Product could be created/developed by the youth (customers and consumers) plus there is scope of widened and faster Promotion, broad range of Place and flexible and real-time pricing possible. The attempt to portray the changing contours of marketing view and the new strategic direction regarding the marketing function which will be necessitated because of the advent of SNS. This has been depicted in figure -2 as both a conclusion and a future direction.



Secondly, the stakeholder unrests till now only seen as 'brick and mortar' protests as farmers unrest against land acquisition or small retailers' rejection regarding the entry of large format

retailing behemoths will be replaced with heavy assault of the brands of firms in the web space (Narayanan and Bhargava , 2012) and firms have to deal with both brick and click attacks.

Finally, financing is going to get altered like never before. Finally, crowds with its wisdom will fund firms, albeit small firms to begin with. Crowd funding (Ordanini, Miceli, Pizzetti, and Parasuraman, 2011; Dell, 2008) will define the beginning of firms and this will probably be the most defining metamorphosis of firm stakeholder engagement. Stakeholders will aggregate to become shareholders (small but not feeble equity holders). This research was an attempt to point out that Web 2.0 platforms and SNS matter now and will be increasingly important as a medium of firm-stakeholder engagement. The research found out the reasons why stakeholders (young Indians) participate in Web 2.0 platforms and SNS. Finally, the paper pointed out the way forward in the firm-stakeholder equation. Further research can be carried out to find out the inter-linkages between various functions of firm the metamorphosis of firm stakeholder management perspectives. Research could also be carried out to study the evolution of stakeholder driven firm reputation and funding.

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Do Financial Parameters Affect Retail Subscription Level in IPOs: An Empirical Analysis from the Indian Equity Market

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Abstract

The Indian capital market has evolved much in the last two decades. This research paper explores whether certain financial parameters affect retail investors subscription levels in the Initial Public Offers (IPOs). Four parameters namely, Current Ratio, Debt to Equity Ratio, Return on Assets and Return on Equity of the IPO-bound companies were found to affect the retail investor's subscription level in IPOs. This study was done on IPOs of the 2007-13 time period.

Introduction to Indian Capital Market

Capital market is an important tool to build nations, and also through capital market, savings in the economy can be moved to productive sectors of an economy, thus enhancing productivity.

Among the emerging market economies, equity market in India has a unique place, as the performance of the equity market is often taken as the proxy for the performance of the overall economy. Initial Public Offering (IPO) by companies and their performance post listing takes considerable media space in India.

When India got independence in 1947, the country probably had the best formal financial markets in the developing world.

The forces of liberalization, privatization and globalisation, have transformed the Indian economy, in the last two and half decades. Indian capital market has also followed suit, in that direction. Indian equity market has seen complete transformation from the days of

Controller of Capital Issues (CCI) to setting up of the SEBI (Securities Exchange Board of India) in 1988, to abolition of CCI in the post reform years of early 1990s.

In the reforms initiated under SEBI, centralized power to determine pricing of equity issues gave way to information dissemination in the public domain. These led to stricter information disclosure norms, Book Building (BB) of Issues, IPO Grading, Applications Supported by Blocked Amount (ASBA), so forth. Book Building process was introduced in India, in 1999, as an alternative to fixed pricing of IPOs.

Gulati (2009), studied Indian IPO market, between the year 2005 and 2009, and found that, book building process of IPOs, emanates enough information, which can explain level of underpricing post listing. She further stated that, issuer used prices of different bids, to set the final offer price. Also price band, and revision in the price showed, uncertainty related to valuation, and underwriter's confidence regarding valuation by the investors.

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If the data of the last 25 years are analysed, then it will be apparent that, number of IPOs as well as the total amount of money raised through the IPOs fluctuated a lot over this period.

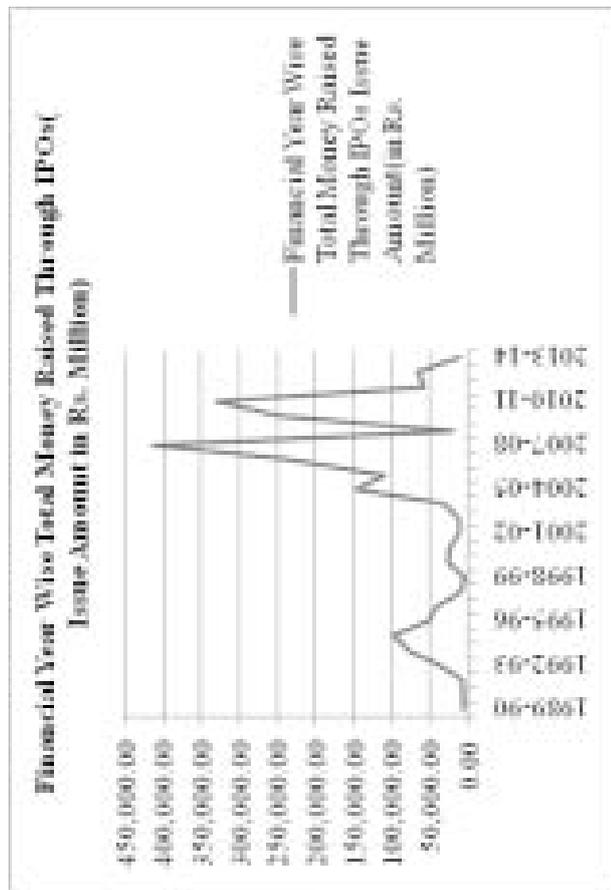


Figure 1: Amount of Money Mopped Up through IPO Process in India between Financial Year 1989-90 and 2013-14 (Source: Prime Database)

The figure above shows, the amount of money mopped up in the Indian capital market, through the IPO process, between the financial years 1989-90 to 2013-14. The trend clearly shows, that amount of money raised fluctuated to a great extent, over this period. The highest amount of money being raised is in the financial year 2007-08, followed by the financial year 2010-11. Very less amount of was raised in the financial year 2013-14, perhaps, mirroring the gloomy economic outlook in India, at that point of time.

Another indicator of growth, i.e. the market capitalisation of the Indian equity markets, have grown steadily over the years, for example, market capitalisation of all listed companies in Bombay Stock Exchange(BSE) has grown from Rs. 30,86,075 crore at the end of financial year 2008-09 to Rs. 74,15,296 crore at the end of financial year 2013-14.

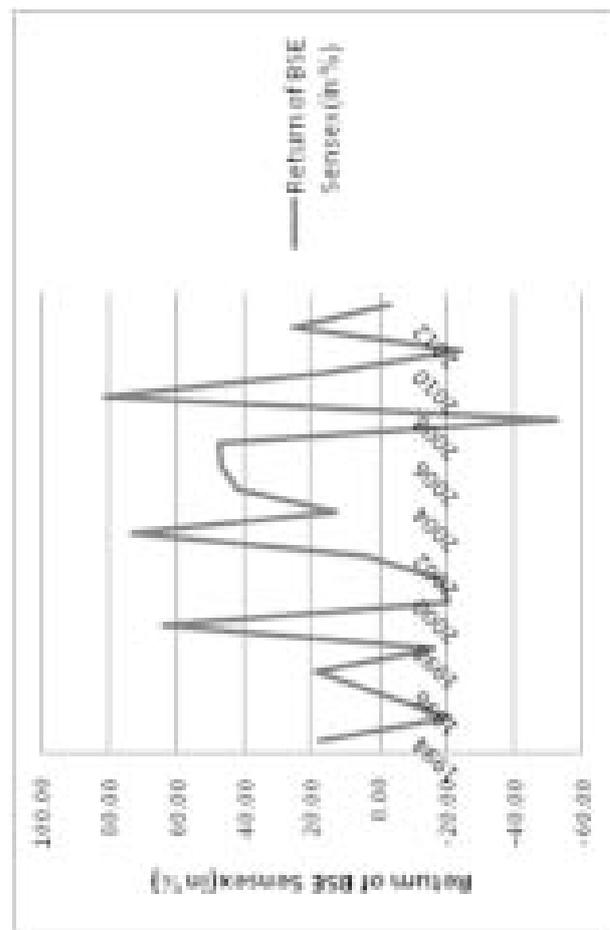


Figure 2: The Calendar Year wise Return of Bombay Stock Exchange's (BSE) Benchmark Sensex, Over Period of 1994 to 2013

The figure above depicts the calendar year wise, return of BSE Sensex, between 1994 and 2013. The returns are quite volatile, with wide fluctuations. The year 2009, had shown the highest gain of 81% that came on the back of -52.4% return of BSE Sensex in 2008, which is the biggest fall in this period. 2003 to 2007,

showed continuous upward trend in this period, culminating in the biggest fall in 2008, on the backdrop of world financial crisis.

This kind of wild gyrations in the equity market is often seen in the emerging market economies. This indicates high volatility in the market.

When market posts huge gain, Market Capitalisation to GDP Ratio also increases, as can be seen in table 3. This indicates, that when, equity market posts high gain, investors push valuations higher. This can be interpreted as risk appetite of investors' increases, with increase in return, as in equity market sentiment plays a big role.

Even during a calendar year, equity market return fluctuates, as can be seen in the following table. This is shown, as an example for one particular year, i.e. calendar year 2012.

Table 1: Month wise Return of BSE Sensex for the Calendar Year 2012

Year 2012	BSE Sensex Return (in term of %)
Month	
January	11.2
February	3.3
March	- 2.0
April	- 0.5
May	- 6.4
June	7.5
July	- 1.1
August	1.1
September	7.6
October	- 1.4
November	4.5
December	0.4

As shown in the table above, the month of January posted the highest return, whereas, the month of May posted biggest fall, incurring a loss of -6.4%.

Table 2: Financial Year Wise Market Capitalisation to Gross Domestic Product (GDP) Ratio in India (Source: SEBI Handbook 2014)

Financial Year	Bombay Stock Exchange (BSE) Market Capitalisation to GDP Ratio	National Stock Exchange (NSE) Market Capitalisation to GDP Ratio
2003-04	43.4	40.5
2004-05	54.3	50.7
2005-06	84.4	78.6
2006-07	85.5	81.2
2007-08	109.5	103.5
2008-09	55.3	51.9
2009-10	95.5	93.1
2010-11	87.7	86.0
2011-12	69.2	67.9
2012-13	63.2	61.7
2013-14	65.3	64.1

The above table shows Market Capitalisation to GDP ratio of the main two stock exchanges in India, i.e. Bombay Stock Exchange (BSE), and National Stock Exchange (NSE). Market capitalisation figure of the exchange, depict, total valuation of all the exchange listed company's equity. The higher value of Market Capitalisation to GDP ratio, for BSE, underscores the fact, that BSE is a bigger exchange in terms of number of listed entities.

Indian capital market regulator Securities Exchange Board of India (SEBI) introduced IPO Grading in 2006. SEBI registered Credit Rating Agencies (CRA) like CRISIL, CARE, ICRA, India Ratings & Research (earlier Fitch India) and Brickwork Rating are entrusted with the job of IPO Grading. The rating scale used is 1 to 5, with 1 being the worst, and 5 being the best. Securities Exchange Board of India (SEBI) has made IPO Grading mandatory to safeguard the interest of retail investors.

SEBI introduced IPO Grading on voluntary basis in April 2006. It was optional till 30th April 2007. SEBI made Initial Public Offer Grading mandatory with effect from May 1, 2007. Again in December, 2013, IPO Grading was made optional.

According to SEBI Issue of Capital and Disclosure Requirements (ICDR, 2009) guidelines of IPO, Qualified Institutional Bidders (QIB) should have at least 50% of the issue allocated to them and 35% allocated to retail investors as based on the book building process. FIIs participate in IPOs as part of QIB. Earlier, the FIIs need to register with SEBI but today it has delegated the registration process to the designated depository participants.

In this research paper, it will be analysed, whether certain pre-issue financial parameters, determine the subscription levels of retail investors in the IPOs, in the context of Indian capital market.

Literature Review

Melnik and Thomas (2004), analysed the IPOs that were listed on NASDAQ, in the calendar year 2000, they came to the conclusion that, both financial and non-financial information about an IPO bound firm is of importance. Kimbro (2005), in his research in the context of capital market of China, found that IPO bound firms used conservative accounting practices, that resulted in conservative valuation during the IPO process and subsequently under-pricing post listing. He came to this conclusion, on the basis of his research on Chinese IPOs in the time period of 1995-2002. On the other hand Leal (2008) analysed the role of accounting information on the investment decisions in the IPOs. This study was done in the context of Brazilian IPO market. According to this study

the Return on Assets, and Long Term Debt to Equity Ratio could provide explanation to the initial returns given by the IPOs.

Hasan et al. (2013) studied the IPO market in Indonesia. They came to the conclusion that when companies with higher past Profitability, float their IPO, post listing they saw less Volatility and Under-pricing. The same study found that firms with higher Current Ratio (indicating higher default risk) show higher Under-pricing post listing.

Lin and Tian (2012) conducted a study in the context of the equity market of China. This study found that, conservative accounting practices bridges information asymmetry among the various stakeholders resulting in lower Under-pricing post listing. Kothari (2001) has already established relevance of prior financial performance of firms, in its post listing equity market performance. Prior research also showed that, information contained in the prospectus of the IPO bound companies reflected in the price of the securities post listing (Murugesu and Santhapparaj, 2010).

Objective and Motivation of the Research

In this research endeavour, it is explored whether financial parameters affect retail investor appetite, as far as the Indian capital market is concerned. Research in this domain has not been done, so it will be an addition to the existing literature. Five parameters namely i) Current Ratio, ii) Debt to Equity Ratio, iii) Debt to Total Assets Ratio, iv) Return on Assets, v) Return on Equity are considered to check whether they have impact on investor appetite. These parameters were considered by Rani and Kaushik (2015), to understand their impact on under-pricing of IPOs.

Hypotheses of the Research

Null Hypotheses

H01- Retail investor's subscription level does not depend on Current Ratio of the IPO bound company.

H02- Retail investor's subscription level does not depend on the Debt to Equity Ratio of the IPO bound company.

H03 - Retail investor's subscription level does not depend on the Debt to Total Assets Ratio of the IPO bound company.

H04 - Retail investor's subscription level does not depend on the Return on Assets of the IPO bound company.

H05 - Retail investor's subscription level does not depend on the Return on Equity of the IPO bound company.

Research Methodology

For this specific paper, we have considered the appetite of the retail investor's vis. a vis certain pre-issue financial parameters of the IPO bound companies. The number of times subscription of the portion earmarked for the retail investors in the IPO is taken as the proxy for the retail investors' appetite. In this paper 171 companies which issued IPO between May, 2007 and December, 2013 are analyzed. We have taken all the Initial Public Offers(IPOs) in this time frame. The source of the data is Capital Market, RBI and SEBI Data Bases.

We have used multiple regressions as the tool for analysis. The number of times the Retail portion of an IPO subscribed is, taken as the dependent variable. The independent variables are Current Ratio, Debt to Equity Ratio, Debt to Total Assets Ratio, Return on Assets, and Return on Equity of the IPO bound companies. Arithmetic Mean of all these independent variables is taken for the last two completed financial years, prior to the start of the IPO process. So, if an IPO was open for subscription in August, 2012, the financial parameters for the financial year ending on 31st. March, 2012 and 31st. March, 2011 were taken into account.

Empirical Results and Analysis

Output of Multiple Regressions from SPSS is Depicted as Follows

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.301 a	.090	.068	12.0182686	.090	4.023	4	162	.004

a. Predictors: (Constant), Current_Ratio, Debt_Equity_Ratio, Debt_TotalAssets_Ratio, Ret_Assets, Ret_Equity

Table 4: ANOVA Test Result

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2324.388	4	581.097	4.023	.004a
	Residual	23399.082	162	144.439		
	Total	25723.471	166			

a. Predictors: (Constant), Current_Ratio, Debt_Equity_Ratio, Debt_TotalAssets_Ratio, Ret_Assets, Ret_Equity

b. Dependent Variable: Ret_Sub

Table 5: Regression Equation

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.164	3.436		.050	.910
Current Ratio	.680	.239	.208	2.681	.008
Debt_Equity_Ratio	-3.968	1.551	.194	2.559	.011
Debt_TotalAssets	.432	.317	.108	1.365	.174
Ret_Assets	.416	.306	.201	2.008	.04
Ret_Equity	1.243	.432	.576	2.423	.028

a. Dependent Variable: Ret_Sub

The results above show, that the regression equation is statistically significant, even at 1% level. Among the independent variables, Current Ratio, Debt to Equity Ratio is significant at 1% level of significance. Whereas two other variables Return on Assets and Return on Equity are significant at 5% level. Only Debt to Total Assets Ratio is not statistically significant.

The fitted regression model for Retail Subscription Level is

$$Y = -1.64 + 0.680 [\text{Current Ratio}] - 3.968 [\text{Debt to Equity Ratio}] + 0.432[\text{Debt to Total Assets}] + 0.416[\text{Return on Assets}] + 1.243 [\text{Return on Equity}]$$

From the standardized beta, we conclude that in predicting Retail Subscription Level, Return on Equity [$\beta=.576$] has the biggest positive influence, followed by Current Ratio [$\beta=.208$], Return on Assets [$\beta=.201$], Debt to Equity Ratio [$\beta=.194$].

So null hypotheses 1, 2, 3, and 4 are rejected.

Conclusions

From the analyses it is apparent that, the subscription level of retail investors is dependent on Current Ratio, Debt to Equity Ratio, Return on Assets and Return on Equity. Current Ratio has positive impact on the retail subscription level, as higher Current Ratio indicates, higher capability of the company to meet its current liability. Higher Debt to Equity Ratio, results in likely higher return for equity holders due to leverage, however higher ratio also increases the risk of default for the company, and so it's natural that retail investors would dislike that. Companies with higher Return on Assets and higher Return on Equity attracts higher appetite from the retail investors, as higher the number of these parameters, more will be the potential gain for the equity holders of these companies in future. These conclusions are reached on a fairly large sample size of 171 companies.

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Impact of Mispricing in S&P Nifty Index Options

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Abstract

The main objective of this paper is to study the mispricing prevailing in the Indian index options market and to investigate the relevance of Black Scholes model with respect to three classes of time to maturity and five classes of moneyness to find patterns in option pricing. This model is applied to determine the theoretical value of options contracts. The analysis is extended by using the Paired Sample T-test to compare the market prices of options with the theoretical prices. The paper concludes that market prices are highly overvalued or undervalued in most cases and put options are highly overvalued as compared to call options. To exploit options mispricing, traders are advised to buy “undervalued” contracts and sell “overvalued” contracts at the market price. The present study found that short selling is beneficial for all “time to maturity” in call option whereas in case of put option selling with longer “time to maturity” has been proved to be highly beneficial for traders. With the rapid growth in financial markets, option pricing has become a very interesting issue that matters to academicians, practitioners, financial institutions, traders, and to almost every modern investor.

Introduction

An option may be defined as a contract between two parties by which first party gives second party the right to buy from or sell to first party, at a fixed price until a fixed date after which any rights or obligations expire. The party having the right to buy or sell is the buyer of the option (in this case, second party), and the party granting the right is the seller, or writer, of the option. There are many different types of underlying asset such as commodity, shares, bonds on which an option could be based, but equity shares quoted on the Stock Markets are of interest. If, for a call/put the index price of

underlying asset is higher (lower) than the exercise price, the option is in-the-money. If for a call/put the index price of underlying asset is equal to the exercise price, the option is at-the-money and if the index price of the underlying asset is lower or higher than the exercise price, the option is out-the-money. The option is said to be exercised when the holder chooses to buy or sell the underlying stock. The writer of the option is the other party to the contract. Buying a call or a put is referred as long position in the option whereas selling a call or a put is referred as short position in the option. The standard derivatives are the European and American

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options. A European call/put option gives the holder the right but not the obligation to buy or sell an underlying asset with an initial price S , at a fixed price K strike Price, at a given maturity date T , called expiration date. European options can only be exercised at maturity date. In India only European options are traded. American call/put gives the holder the right but not the obligation to buy (sell) the underlying asset with an initial price S , at a fixed price K strike Price, at any time t ($0 < t < T$), up to maturity date T . These options can be exercised anytime between the date of purchase and the expiration date. In option pricing the prime concern is to calculate the price of an option (premium). The premium is the fair value of an option contract determined in the competitive market, which the option buyer pays to the option writer.

Derivatives were recommended by the L.C. Gupta committee's Report on Derivatives in 1997 in a phased approach. SEBI had setup an Advisory Committee headed by Prof. J. R Varma presented its recommendation on its report "Development and Regulation of Derivative Markets in India". Accordingly, stock index futures were introduced at BSE named as Sensex on June 9, 2000 followed by NSE on 12 June, 2000 based on S&P Nifty. Afterwards other products like individual stocks on future were introduced in November 2001 followed by approval of trading in index options as well as individual securities based on the above two indices. With the enormous growth in the volume of stock markets activities and the increased sophistication, investors have brought with them eager interest and activity related to option markets. Options provide additional leverage which may not be possible or relatively expensive, to obtain in stock and bond market (Back, 1993; Biais and Hillion, 1994).

Options pricing is an important phenomenon used by both academia and practitioners in real world. The most popular model for option pricing was proposed by Fischer Black and Myron Scholes in 1973 with the publication of pioneering paper titled "The Pricing of Options and Corporate Liabilities". According to them if options are correctly priced in the market, it should not be possible to make sure profits by creating portfolios of long and short positions in options and their underlying assets (Black and Scholes 1973). Its assumptions are: no transaction costs or taxes; no risk-free arbitrage opportunities exist; no dividends during the life of the options; risk-free interest rate ' r ' is known and constant over time; variance of the return is constant over the life of the option; the underlying asset trading is continuous and the change of its price is continuous. The model did not require computer software and very complex calculations and encouraged high growth of the options markets. We need five variables to calculate an option value: (1) the underlying stock price, (2) the time to maturity, (3) the exercise price, (4) the interest rate (risk-free rate) and (5) the volatility of the stock. The value of an option is strongly related to the price of its underlying stock.

The rest of paper is organized as follows: Section 2 presents literature review. The research methodologies are described in section 3. Empirical results are presented in section 4 and conclusion in section 5. Section 6 contains all the references used in this paper.

Review of Literature

The Black Scholes model is one of the most considerable concepts of modern financial theory both in terms of approach as well as applicability. Ray Sarbapriya (2012) Black Scholes option pricing model is a very good

approximations to the prices of options, it can directly estimate the volatility on the basis of price and time and does not depend upon the expected yields and considered as a self replicating strategy which provides insurance against a loss. McKenzie S., Gerace D and Subedar Z., (2007) stated that for exercising the option not only the volatility factor is significant but the other factors of Black Scholes model are also collectively of statistical significance. Implied volatility has been asserted to be superior to historical volatility. Raja Aftab Ammar, (2009) Black Scholes model with logistic distribution is a better estimator of stock price and stock returns; where as normal distribution is overpriced, but all depends on volatility of the stocks. Rajkowski Michal, (2012) stated that despite their popularity and wide spread uses; the model is based on some non-real life assumptions about the market. Black Fischer, Scholes Myron, (1973) stated that the actual price at which the option bought and sold deviate in a systematic way. Options buyers pay prices that are higher than the actual price calculated by the formula and option writers receive prices that above the level predicted by the formula, and market underestimated the effect of difference in variance rate on the value of an option. This mismatching of values does not imply profit opportunities for the speculator in the option market. He stated that the difference between the price paid by option buyers and the value predicted by the formula is greater for low-risk stocks than high-risk stocks. Gencay Ramazan and Salih Aslihan, (2003) the Black-Scholes model is not the proper pricing model in high volatility situations mainly for very deep out-of-the-money options. Gupta Sheetal, (2014) used implied volatility as compare to historical volatility and stated that Black Scholes model

indicates pricing errors but these are less in case of near-the-money call options, it increases as moneyness increases. Mohanti Debaditya and Priyan P.K., (2014) observed pricing violation and suggested that Indian index options market is efficient but majority of violation disappeared after considering transaction cost.

Research Methodology

An empirical study was carried out to find the degree of mispricing prevailing in India. The data collected for the study consists of daily closing prices of S&P CNX NIFTY 50 index has been collected from NSE website www.nseindia.com, from 1st April 2012 to 31st March 2013. The data related to S&P CNX Nifty index call/put options contracts and risk-free rate MIBOR (Mumbai interbank offer rate) has also been taken from website of NSE. Options contracts on National Stock Exchange are actively traded European style options, mature on the last Thursday of each month and the settlements are mainly in cash. The data set used for study consists of the date of the transaction, expiration date, type of options call/put, option exercise price/strike price, index closing price, the number of days to maturity, daily S&P index return, and the interest rate. Option Contracts with zero volume are not used has been neglected while preparing data set. Interpolation and extrapolation methods are used to estimate at-the-money options value. S&P CNX returns are used to calculate historical volatilities for estimating model values. Paired sample T-test is applied to compare the Market option prices with the option prices calculated as per Black Scholes Option Pricing Model. Descriptive statistics are used to study the basic feature of data. It includes mean, median, maximum, minimum, standard deviation, skewness, kurtosis and Jareque-Bera test along with p-

values. The J-B statistic is used to measure the normality of returns series and it is dependent on the values for Skewness and Kurtosis. The assumption of stationarity has been studied using Augmented Dickey-Fuller (Unit root test). Being stationary is one of the time series data assumptions to accumulate reliability in the results. The augmented Dickey-Fuller statistic used in the ADF test is a negative number, and the more negative it is, the stronger the rejection of the hypothesis that there is a unit root.

In this paper Call and Put options contracts are examined with respect to, five classes of moneyness (deep OTM, OTM, ATM, ITM and deep ITM) and three classes of time to maturity: (0-30 days), (31-60 days), (61+90 days) from 1st April 2012 to 31st March 2013.

3.1 Objective

The objective of the study is to know whether mispricing opportunities are available in India or not. Main objective of this paper is to examine the validity of difference in theoretical options prices and market prices of options contracts.

3.2 Statistical Tools

3.2.1 Options Pricing

By using Black-Scholes model practitioners can obtain the estimated price of European options and make an assessment between actual and modelled price. The NSE of India also recommends the Black-Scholes option pricing model to determine the theoretical price of options.

$$c = S_0 N(d_1) - X e^{-rt} N(d_2) \tag{1}$$

$$p = X e^{-rt} N(-d_2) - S_0 N(-d_1) \tag{2}$$

$$d_1 = \frac{\ln\left(\frac{S_0}{X}\right) + \left(r + \frac{\sigma^2}{2}\right)t}{\sigma\sqrt{t}} \tag{3}$$

$$d_2 = \frac{\ln\left(\frac{S_0}{X}\right) + \left(r - \frac{\sigma^2}{2}\right)t}{\sigma\sqrt{t}} = d_1 - \sigma\sqrt{t} \tag{4}$$

where $N(d_1)$ and $N(d_2)$ are the cumulative probability distribution function of standard normal distribution, S_0 is the spot price of underlying security, X is the exercise price, r is the prevailing risk-free interest rate, t is the time-to-maturity and

3.2.2 Daily Returns

$$R_t = \ln(P_t/P_{t-1}) \tag{5}$$

Where P_t and P_{t-1} are the value of security on day t and $t-1$ respectively; R_t represents the return in relation to day t .

3.2.3 Historical Volatility

The realized or historical volatility is computed as the annualized standard deviation of the continuously compounded returns. It computes how a stock price performs over a certain period of time. Historical volatility assumes that the past volatility is the good indicator of future volatility. The volatility would be measured as follows:

$$\sigma^2 = \sum_{t=1}^T (R_t - \bar{R})^2 / T - 1 \tag{6}$$

$$\bar{R} = \sum_{t=1}^T (R_t) / T \tag{7}$$

Here σ denotes standard deviation, R_t the log normal return, \bar{R} mean of the log normal return, T denotes total number of days.

Paired sample T-test is applied to compare the market prices of options with the theoretical options prices calculated as per Black-Scholes option pricing model.

4 Empirical Results

Results of Test of Normality

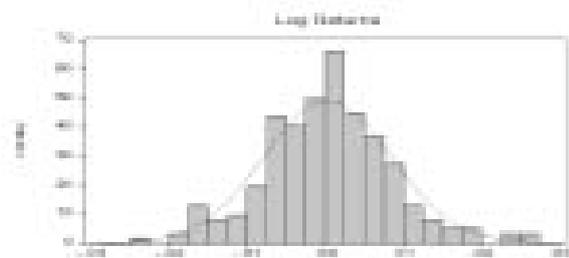
This section presents a summary of descriptive statistics of daily returns, which include mean, median, maximum, minimum, standard deviation, skewness, kurtosis and Jarque-Bera test along with p-values. Here Jarque-Bera statistic is used to test the null hypothesis that returns are normally distributed. The Jarque-Bera test indicates that how far the asymmetric and kurtosis measure deviate from values of normal distribution.

Table I

The Descriptive Statistics for CNX Nifty index Daily Returns

		Rt
N		249
Mean		1.000316
Median		1.000462
Maximum		1.027512
Minimum		0.977670
Std. Dev.		0.008170
Skewness		0.256947
Kurtosis		3.908644
Normality tests		
Jarque-Bera	Statistic	11.30584
Probability	p-value	0.003507

Figure I
The Histogram for CNX Nifty Index Log Returns



The distribution of the full sample has positive skewness shows that value has a long right tail. The value of kurtosis is greater than 3 so that it has a heavier tail than standard normal distribution. Jarque-Bera statistics indicate that historical returns are non-normal in distribution at 5% level of significance for the sample period 1st April 2012 through 31st March 2013. However, it is assumed that the log-returns are normally distributed.

Result of Test of Stationarity

This section examines the assumption of stationarity in returns and volatility. Nifty returns and standard deviation are tested for unit root using Augmented Dickey-Fuller test. Non-stationary time series data gives the spurious results. Table II and figure II shows the result given by the unit root test for the period 1st April 2012 to 31st March 2013.

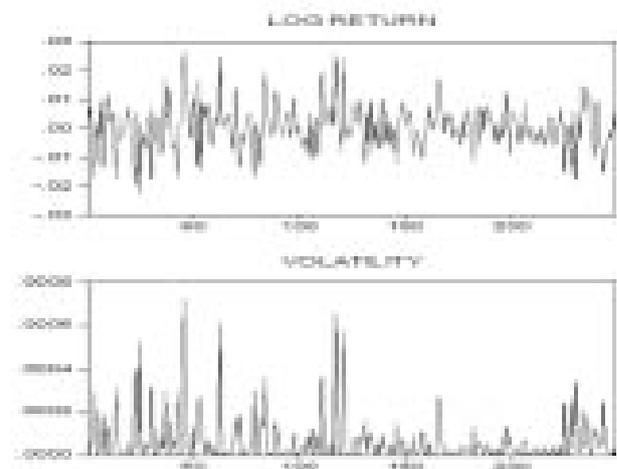
Table II

Augmented Dickey-Fuller Test Statistic (Unit Root Test)

Variables	t-Statistic	P values
Volatility	-16.65270	0.0000
Returns	-15.32655	0.0000

Figure II

Stationary CNX Nifty Index Log Returns and Volatility



The above table and graph show that returns and volatility both are stationary at zero level. The computed ADF test-statistics (-16.65 and -15.33) are less than the critical values -3.46, -2.87, -2.57 at 1%, 5% and 10% significant level. So it is concluded that the return series is stationary.

Results of Pricing Errors

The Paired sample T-test is applied to compare CNX Nifty index options prices call/put with theoretical options prices using Black Scholes option pricing model. Positive figures indicate overpricing and negative figures indicate underpricing by Black Scholes option pricing model for call options contracts and vice a versa for put options.

TABLE III
Paired Sample T- Test for CNX Nifty Call Option Contracts

	Black Scholes Price - Market Price (DITM)	Black Scholes Price - Market Price (ITM)	Black Scholes Price - Market Price (ATM)	Black Scholes Price - Market Price (OTM)	Black Scholes Price - Market Price (DOTM)
0-30 days					
Mean	-1.51	-5.28	9.79	-5.88	-3.75
Std. Dev.	9.01	10.07	11.46	9.97	7.05
T Statistics	-2.65	-8.28	13.54	-9.31	-8.40
P Values	.009	.000	.000	.000	.000
31-60 days					
Mean	-5.29	-8.51	-1.13	-9.40	-7.51
Std. Dev.	11.24	13.39	14.54	14.81	13.35
T Statistics	-7.44	-10.05	-12.33	-10.03	-5.82
P Values	.000	.000	.000	.000	.000
90 days					
Mean	6.91	1.03	9.64	9.01	
Std. Dev.	6.18	8.81	8.13	7.75	
T Statistics	1.44	1.44	1.44	1.44	
P Values	1.44	1.44	1.44	1.44	

Our results for call options are shown in above table depict the comparison between the market and Black-Scholes prices. The p value of SPSS output as shown in Table III is less than 0.05 with respect to moneyness and time to maturity. It is concluded that there is a difference between the theoretical prices and actual prices of CNX Nifty index call options. Mean values are negative which shows that prices are overvalued in most of the cases.

Table IV
Paired Sample T- Test for CNX Nifty Put Option Contracts

0-30 days	Black Scholes Price - Market Price(DITM)	Black Scholes Price - Market Price(ITM)	Black Scholes Price - Market Price(ATM)	Black Scholes Price (OTM)	Black Scholes Price - Market Price(DOTM)
\bar{X}	-7.88	-11.41	-17.35	-14.54	-10.80
\bar{A}	18.19	19.79	19.12	16.35	12.79
T Statistics	-6.85	-9.12	-14.34	-14.03	-13.39
P Values	.000	.000	.000	.000	.000

31-60 days	Black Scholes Price - Market Price(DITM)	Black Scholes Price - Market Price(ITM)	Black Scholes Price - Market Price(ATM)	Black Scholes Price (OTM)	Black Scholes Price - Market Price(DOTM)
\bar{X}	-26.87	-29.88	-32.90	-31.21	-28.22
\bar{A}	28.09	28.69	27.82	24.72	20.95
T Statistics	-14.91	-16.27	-18.48	-19.72	-21.05
P Values	.000	.000	.000	.000	.000

61-90 days	Black Scholes Price - Market Price(DITM)	Black Scholes Price - Market Price(ITM)	Black Scholes Price - Market Price(ATM)	Black Scholes Price (OTM)	Black Scholes Price - Market Price(DOTM)
\bar{X}	-45.48	-46.82	-47.99	-46.21	-42.40
\bar{A}	33.62	32.84	31.14	28.78	25.20
T Statistics	-20.34	-21.90	-23.73	-24.72	-25.90
P Values	.000	.000	.000	.000	.000

Our results for put options are shown in above table depict the comparison between the market and Black-Scholes prices. The p value of SPSS output as shown in Table IV is less than 0.05 with respect to moneyness and time to maturity. It is concluded that there is a difference between the theoretical prices and actual prices of CNX Nifty index put options. Mean values are negative which shows that prices are overvalued in most of the cases.

5. Conclusion

The present paper examines the options pricing violation of S&P CNX Nifty index options with

respect to moneyness and time to maturity using the Black Scholes model from 1st April 2012 to 31st March 2013. This paper identifies significant deviations of market price from theoretical option prices obtained from Black Scholes model and concludes that market prices are highly overvalued or undervalued in most of cases and put options are highly overvalued as compared to call options. To exploit options mispricing traders buy “undervalued” contracts and sell “overvalued” contracts at the market price. The present study found that short selling is beneficial for all “time to maturity” in call

option whereas in case of put option selling with longer “time to maturity” has been proved to be highly beneficial for traders. With the rapid growth in the financial market, option pricing became a very interesting issue that matters to academicians, practitioners, financial institutions, traders, and to almost every modern investor. This paper will be of great value to various interested parties (speculators hedgers and investors) to exploit mispricing situation prevailing in Indian option market.

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Trade Openness, FDI in Pharmaceutical Industry and Economic Growth: A Time Series Analysis

Mithun Nandy* & Brajaballav Pal**

Abstract

With the initiation of globalization, developing countries, particularly those in Asia, have been witnessing an immense surge of FDI inflows during the past two decades. Even though India has been a late mover to the FDI scene in comparison to other East Asian countries, its considerable market potential and its liberalized policy regime have sustained its attraction as a favourable destination for foreign investors. FDI provides a win-win situation to the host and the home countries. Both countries are directly interested in inviting FDI, because they benefit a lot from such type of investment. The 'home' countries want to take advantage of the vast markets opened up by industrial growth. On the other hand the 'host' countries want to acquire technological and managerial skills and supplement domestic savings and foreign exchange. Moreover, nudged by the paucity of all types of resources, viz. financial, capital, entrepreneurship, technological know-how, skills and practices, access to markets abroad in their economic development, developing nations accepted FDI as the sole visible panacea for all their scarcities. Further, the integration of global financial markets paves the way to this explosive growth of FDI around the globe. The Indian pharmaceutical sector has come a long way, from being almost non-existent at the time of independence to a prominent provider of healthcare products, meeting almost all the pharmaceutical needs of the country. Over the years, India has become an attractive investment destination for FDI.

This paper examines the relationship among GDP, FDI in Pharmaceutical Industry and trade openness for India, using time series data from 2001 to 2014. In this study, unit root test is used to solve the problem of stationery and to determine the order of integration between the variables. Johnson co-integration test suggests that there is a long run equilibrium relationship among the variables by considering relationship between gross domestic product (GDP), foreign direct investment (FDI) and trade openness (TO). The result of the ADF unit root tests indicate that all variables in the study are integrated in order one and Granger causality test demonstrated a causal effect exists among Trade Openness, FDI in Indian Pharmaceutical Industry and GDP. Granger causality test postulates that there exists a bi-directional causality between GDP and FDI. But, when we checked the causality between trade openness and GDP as well as trade openness and FDI, we found uni-directional causality. We may conclude that, while increase in GDP may cause trade openness, trade-openness does increase the inflow of FDI. The government and policy makers should take up strategies to attract foreign investment so as to promote economic growth.

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Introduction

FDI inflow took entry in India during the year 1991-92 with the aim to bring together the projected investment and the actual savings of the country. To track a growth of around 7 percent in the Gross Domestic Product of India, the net fund flows should increase by at least 28 to 30 percent on the whole. But the savings of the country stood only at 24 percent. The gap created between intended investment and the actual savings of the country was lifted up by portfolio investments from Foreign Institutional Investors, loans by foreign banks and foreign direct investments. Among these three forms of financial supports, India prefers as well as possesses the maximum amount of Foreign Direct Investments. Hence FDI is considered as a developmental tool for growth and development of the country.

The relationship between Foreign Direct investment (FDI), trade openness and economic growth has gained significance and consideration among policy makers and researchers. Foreign direct investment (FDI) is often seen as important catalysts for economic growth in the developing countries like India. It is also an important means of technology transfer from developed countries to developing countries. FDI accelerate domestic investment and facilitates development in human capital and organisations in the host countries. Trade Openness has been referred as the engine of economic growth which is used to boost up the development process by economically developed nations during the early twentieth centuries. Exports have a tendency to grow fastest in countries with more liberal trade policies, and these countries have experienced the faster growth of GDP. Trade facilitates more efficient production of goods and services by

shifting production to countries that have comparative advantage in producing them. Even though past studies show that FDI and trade openness have a positive impact on economic growth, the size of such impact may vary across countries depending on the level of human skills, domestic investment, infrastructure facilities, economic and political stability, and trade policies. Thus, this study aims to determine the impact of FDI and trade openness on economic growth in India for the period 2001-2014.

Overview of Indian Pharmaceutical Industry (IPI) & Investment through FDI

The Indian pharmaceutical sector has come a long way, being almost non-existent at the time of independence to a prominent provider of healthcare products, meeting almost all the pharmaceutical needs of the country. Today the Indian pharmaceutical market is the 3rd largest in the world in terms of volume and 14th largest in terms of value. The annual turnover of the industry has already exceeded past Rs.1,00,000 Crore mark way back in the year 2009. Around 40% of the sales of the industry is coming through exports which shows the extent of penetration of Indian pharmaceutical companies in the global market. Pharmaceutical exports constitute more than 4% of the total national exports of our country. Moreover, the industry is growing at a respectable rate of around 10% annually with the projected growth rate rising to 18% by the year 2016-17. The Indian pharmaceutical industry is currently employing around 3.5 lakh employees of which a substantial share of employees are highly educated and skilled with Ph.D and M.Tech degrees.

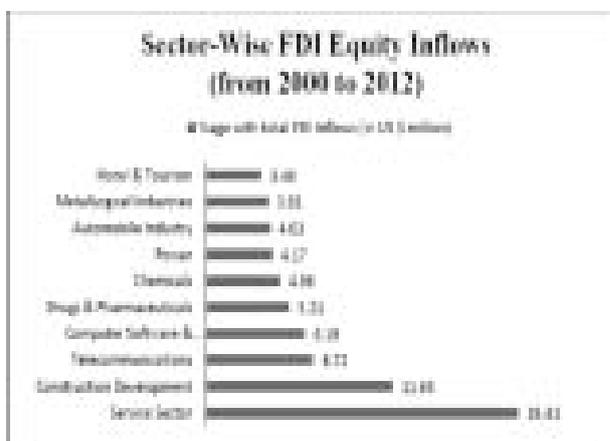
However, the Industry is quite fragmented and comprises of nearly 10,500 units with majority

of them in unorganized sector. Of these, about 300-400 units are categorized as belonging to medium to large organized sector with the top 10 manufacturers accounting for 36.5% of the market share. India is among the top 20 pharmaceutical exporting countries. Indian drugs are exported to around 200 countries in the world with highly regulated markets of USA, UK etc. The major therapeutic categories of export are anti infective, anti asthmatic and anti hypertensive.

The Indian pharmaceuticals market is witnessing dynamic changing trends such as large acquisitions by multinational companies in India, increasing investment by domestic and international players in India, deeper penetration into the rural markets, growth and availability of healthcare and incentives for setting up special economic zones (SEZ's). Research & Development in India is getting more innovative. Domestic companies have strengthened their position in the world for supplying solutions across the pharmaceutical value chain. They are likely to become a competitor of global pharma in the areas of manufacturing and R&D, and a potential partner in others. In the last few years Indian Pharmaceutical Industry (IPI) has witnessed some promising deals in the Foreign Direct Investment (F.D.I.). The Indian pharmaceutical industry has in the last five years seen half a dozen big takeovers by foreign companies through the process of Foreign Direct Investment (F.D.I.). They include the \$3.6 billion acquisition of the promoters' stake in India's largest drug maker Ranbaxy Laboratories in 2008 by Japan's Daiichi Sankyo Co. Ltd. US drug maker Mylan Inc. paid \$734 million to acquire Hyderabad-based Matrix Laboratories in 2006. German health care group Fresenius SE spent \$219 million to take over Dabur Pharma in

2008. French drug multinational Sanofi-Aventis SA acquired a majority stake in Indian vaccines company Shanta Biotech in 2009 for €550 million. In 2012, US drug and nutrition firm Abbott Laboratories paid \$3.72 billion to acquire Piramal Healthcare Ltd's domestic drug formulation business and spent \$726 million to buy out Ahmedabad-based consumer health company Paras Pharmaceuticals.

Chart 1 : Sector-Wise FDI Equity Inflows (Period – 2000-2012)



Source: DIPP's Data Base (extracted)

Chart 1 shows sector-wise FDI equity inflows in terms of percentage with total FDI inflows. The sector-wise analysis of FDI with the help of this chart reveals that maximum FDI has taken place in the service sector including finance, banking, insurance etc. Chart 1 depicts that service sector is at the top with 19.41% of total FDI inflows. After that Construction Development comes with 11.63% followed by Telecommunications, Computer Software & Hardware and Drugs and Pharmaceuticals with 6.72%, 6.19%, and 5.21% respectively. This significant percentage (%) of FDI equity inflow in the Indian Drug & Pharmaceutical Industry is creating the positive impact for the accomplishment of business objective of Indian Pharmaceutical Companies.

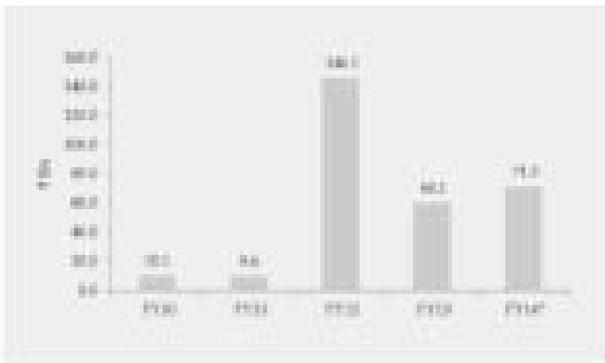
Chart 2: FDI Equity Inflow in the Indian Drug & Pharmaceutical Industry (In US \$ mn): Period 2000-2012



Source: Ministry of Commerce & Industry

Chart 2 depicts that from the period of 2000 to 2012 the highest FDI equity inflow has taken place in the F.Y. 2012 and the amount is 14,107 US \$ mn. Before F.Y. 2012 the FDI equity inflow is 1006.0 US \$ mn in the F.Y. 2010. The data which has been derived from Ministry of Commerce & Industry for the stated period exhibits that from F.Y. 2000 to F.Y. 2007 the FDI equity inflow was significantly less in the Indian Drug & Pharmaceutical Industry.

Chart 3: FDI in Drugs & Pharmaceuticals: (Period 2010-2014)



Source: GDP

During the period for 5 years i.e. F.Y. 2010 – F.Y. 2014, it has been found from the mentioned above chart-3 that the FDI equity inflow was maximum in F.Y. 2012 and the amount is 146.1 Billion (INR). Then in F.Y. 2013 there was a sharp decline and the FDI equity inflow drastically had come down to 60.1 Billion (INR). Again in F.Y. 2014 there was an incremental trend observed.

Table 1: Mergers and Acquisitions (M&A): Period 2006 - 2012

Sr No	Indian Company	Foreign Company	Amount (Million \$) Or %	Year
1	Matrix Lab	Mylan (USA)	736	Aug, 2006
2	Dabur Pharma	Fresenius Kabi (Singapore)	219	April, 2008
3	Ranbaxy Labs	Daiichi Sankyo (Japan)	4600	June, 2008
4	Shanta Biotech	Sanofi Aventis (France)	783	June, 2008
5	Orchid Chemicals	Hospira (USA)	400	Dec, 2009
6	Piramal Healthcare	Abbott (USA)	3720	May, 2010
7	Paras Pharmaceuticals	Reckitt BenckiseFs (UK)	726	Dec, 2010
8	Wockhardt	Danone (France)	350	Sep, 2011
9	Arch Pharmlabs	Mitsui's (Japan)	26.71%	Sep, 2012

Source: RBI Database Extracted

From the stated Table 1 we can find out that basically two (2) significant FDI deals have been taken place in the period of F.Y. 2006 to F.Y. 2012. The deals taken place Ranbaxy Labs (Indian Company) and Daiichi Sankyo (Japan) in the F.Y. 2008 (Month – June) amounting to 4600 US \$ mn. It's being considered the most promising deal in the Indian Pharmaceutical Industry (IPI). Next to this FDI deal is the deal which had taken place between Abbott (USA) and Piramal Healthcare (India) amounting to US \$ 3720mn.

Table 2: Joint Ventures, Alliances or Partnerships: Period 2008 - 2011

Sr No	Indian Company	Foreign Company	Therapeutic Segment	Year
1	Zydus Cadila	Bayer's Healthcare (Germany)	Women's healthcare, Metabolic disorders and Oncology	Jan, 2011
2	Lupin Ltd.	Eli Lilly (USA)	Antidiabetic: Huminsulin range of products	July, 2011
3	Sun Pharmaceutical Industries Limited	Merck (USA)	Antidiabetes drugs: Sitagliptin and Sitagliptin plus Metformin	April, 2011
4	Novartis	USV Ltd (USA)	Anti-Diabetic: Galvus (Vildagliptin)	Nov, 2008
5	Modi Mundipharma	Omega Pharma	Different OTC products	Apr, 2009

Source: RBI Database Extracted (Belgium)

Table 2 depicts the strategic alliances, joint ventures and partnerships between Indian Companies and Multinational Companies. In January 2011 the FDI deal had taken place between Zydus Cadila and Bayer's Healthcare (Germany) for developing the product portfolio in women's healthcare, metabolic disorders and oncology. In the similar way the JV, Partnership, or Alliances have taken place between Lupin & Eli Lilly, Sun Pharmaceuticals & Merck, Novartis & USV Ltd and Modi Mundi & Omega Pharma in the year of 2011, 2011, 2008 and 2009 respectively.

Table 3: Strategic Alliance in R&D: Period 2004 – 2013

Sr No	Indian Company	Foreign Company	Product Range	Year
1	Glenmark Pharmaceuticals Limited	Forest Laboratories (USA)	Chronic Obstructive Pulmonary Disorder (COPD) and Asthma	Sep, 2004
2	Piramal Nicholas India Limited	Merck (USA)	Oncology	Nov, 2007
3	Serum Institute of India	Merck (USA)	Pneumococcal conjugate vaccine	Aug, 2011
4	Jubilant Biosys	Endo Pharmaceuticals (USA)	Oncology	June, 2009
5	GVK Bio	Onconova Therapeutics	Oncology	Jan, 2013

(USA) Source: RBI Database Extracted

Table 3 basically explains the activities between Indian Companies and Foreign Companies in the area of the Research & Development (R&D). From this table we can also state that FDI equity inflow also played a crucial role for the conduction of the research & development activities (R&D) in the Indian Pharmaceutical Industry (IPI). In September 2004, the FDI deal had taken place between Glenmark Pharmaceutical Limited (India) and Forest Laboratories (USA) for conducting the research & developmental work in the clinical area of Chronic Obstructive Pulmonary Disorder (COPD) and Asthma. Through the FDI equity inflow the research & developmental work also carried out in the important areas like Oncology, and Pneumococcal conjugate.

Table 4: Contract Research and Manufacturing Services (CRAMS)

Sr No	Indian Company	International Outsourcing Partner	Description
1	Aurobindo Pharma	AstraZeneca, Pfizer	Supply generic medicines for developed & emerging markets
2	Strides Arcolab Limited	Pfizer	Supply 67 generic drugs to Pfizer with focus on Oncology
3	Torrent Pharmaceuticals	AstraZeneca	Supply 18 products for various markets
4	Indoco Remedies	Aspen	Range of Ophthalmic Products for 30 emerging markets
5	Indoco Remedies	Watson Pharmaceuticals	Develop and manufacture generic drugs with market size of US\$ 670 million
6	Cadila Healthcare	Altana, Zyban	Manufacturing of patent drugs
7	Shasun	Eli Lilly, GSK, Novartis	Contract manufacturing for APIs and formulations
8	Dishman	Solvay, GSK	Contract manufacturing for APIs and intermediates
9	Jubilant	Novartis	Contract manufacturing for APIs and intermediates
10	Matrix	GSK	Contract manufacturing for API
11	Divi's	MNCs	Custom chemical synthesis
12	Strides Arcolab Limited	GSK	Supply of drugs for semi-regulated markets
13	IPCA	AstraZeneca	Contract generics manufacturing of APIs
14	Torrent Pharmaceuticals	Novo-Nordisk	Contract manufacturing of formulations
15	Strides Arcolab Limited	Mayne, Eli Lilly	Generic Injectables manufacturing
16	Nicholas Piramal	AMO, Allergan	Contract manufacturing for APIs and formulations
17	Sun Pharma	URL Pharma	Contract manufacturing of Generic Formulation

Source: RBI Database Extracted / ORG IMS

In the Table: 4 the list of 17 companies explains the Contract Research and Manufacturing Services (CRAMS) between Indian & Foreign companies. The specific activities through CRAMS have been identified as Supply generic medicines for developed & emerging markets in Aurobindo Pharma (Indian) and AstraZeneca, Pfizer (Foreign Company) FDI deal. In Sl.No. 6 the CRAMS deal has taken place between Cadila (Indian Company) and Altana, Zyban (Foreign Company) for manufacturing of patented drugs. In the similar way the different marketing activities have been conducted through CRAMS between Indian & Multinational Companies for enjoying the win-win situation.

Table 5: Case Studies of Major Foreign Direct Investments in the Indian Pharmaceutical Industry: Period 2007 - 2013

Case Study	Year	Buyer	Seller	Amount (\$bn)
I	2007	Mylan Inc (US)	Matrix Labs	0.73
II	2008	Daichi Sankyo (Japan)	Ranbaxy Lab	5.65
III	2009	Sanofi Aventis (France)	Shantha Biotech	0.78
IV	2010	Abbott Lab (US)	Piramal Healthcare	3.72
V	2013	Mylan Inc (US)	Agila Specialities	1.75

Source: RBI (extracted)

Case Study I: US-based Mylan Inc., the world's third-largest generic drug maker, may not have much of a presence in the Rs.1,00,000 crore Indian pharmaceutical market, but it has been building a strong sourcing base in the country for its global business with the help of acquisitions and partnerships. Mylan acquired a 71% stake in Secunderabad-based Matrix Laboratories Ltd in 2007 for \$736 million. Matrix Laboratories, one of the most successful active pharma ingredients (API) makers in India, with a large portfolio of product registrations with the US Food and Drug Administration and in other developed markets, was a key contributor to Mylan's growth in the US. Mylan has built a strong product sourcing base in India—the world's cheapest

manufacturing location for quality drugs. Since 2007, it has remained focused on enhancing this strategy to build its global business.

Case Study II: Ranbaxy Laboratories Limited is an Indian multinational pharmaceutical company that was incorporated in India in 1961. The company went public in 1973 and Japanese pharmaceutical company Daiichi Sankyo acquired a controlling share in 2008. Jones Day advised Daiichi Sankyo Company, Limited, one of the largest pharmaceutical companies in Japan, in its acquisition of a majority equity interest in Ranbaxy Laboratories Limited, among the world's top 10 generic pharmaceuticals producers and the largest pharmaceutical company in India. Structurally and geographically, this is the most complex transaction in India's history and is subject to regulatory approvals from several jurisdictions given the geographic spread of the business of the parties.

Case Study III: In 2009 French drug maker Sanofi-Aventis had picked up a controlling stake in unlisted Hyderabad-based vaccine maker Shantha Biotechnics, making it the first big-ticket deal in the Indian biotech sector. Sanofi's vaccine unit, Sanofi Pasteur, had acquired a subsidiary of French bioindustrial group Merieux Alliance, ShanH, which owns a majority stake in Shantha Biotechnics. The transaction, set to close before the end of the third quarter, values the Indian company at 550 million euros or \$783 million (Rs 3,770 crore). This deal has resulted an extensive support to Shantha's ongoing development as a platform to provide high quality vaccines in the international markets. Through this acquisition Shanta, had experienced with the sales of around \$90 million (Rs 432 crore) the financial year 2009-2010.

Case Study IV: In the second-largest deal ever in the Indian pharma industry, US-based Abbott Laboratories has acquired the pharmaceuticals solution business of Piramal Healthcare for \$3.72 billion (Rs 17,500 crore) in 2010. It will also catapult Abbott from just about nowhere to the top position in the Indian pharmaceutical market, with a marketshare of close to 7%. Abbott will add 350 branded generic drugs from the Piramal portfolio, including Phensedyl, one of the top two pharma brands in the country. Abbott estimates the growth of its Indian pharmaceutical business with Piramal to approach 20% annually, with expected sales of more than \$2.5 billion by 2020. With nearly \$8 billion in annual sales this year, the Indian market is expected to more than double by 2015.

Case Study V: Bangalore-based Agila Specialities Pvt Ltd, a wholly owned subsidiary of Strides Arcolab Ltd that is being sold to US-based Mylan Inc for \$1.75 billion Drug maker Strides Arcolab Ltd in the year of 2013. With this acquisition Agila would bring a broad product portfolio of more than 300 filings approved globally and marketed through a network covering 70 countries, including 61 abbreviated new drug applications (ANDAs) approved by the US Food and Drug Administration (USFDA). Agila also had played a significant role in Mylan's growth strategy to become a global injectable leader. Post the deal, over 1,800 employees of Strides Group would become part of Mylan. Agila currently produces drugs across nine manufacturing facilities in India, Brazil and Poland, eight of which have been approved by the USFDA.

Review of Literature

A number of theoretical as well as empirical studies have been found in the literature to

highlight the significance of FDI, Trade Openness on Economic Growth in developing countries. Provided here is the brief review of a few studies, providing arguments in favour or against the FDI and Trade Openness for economic growth of a country. There are several studies which are focused on the case of developing countries and the major part of them stress that FDI have a significant positive effect on economic growth. With Some researchers indicating the unidirectional response while others indicating the bi-directional response.

Edwards (1998) states that in poor countries the growth does not depend exclusively on degree of openness, and the skill, knowledge, and cost of production also play a very important role.

Shan (2002) used vector autoregressive method to study the relationship between China's FDI and economic growth. He concluded that economic growth and FDI has bilateral causal relationship and the impact of the economic growth on FDI is greater than the impact of FDI on economic growth.

Chakraborty and Basu (2002) used co integration and error correction model to investigate the causal relationship between economic growth and foreign direct investment (FDI) in India. The empirical results revealed that there is unidirectional relationship with causation running from GDP to FDI and not otherwise.

Chandran and Krishnan (2008) examined the short and long run dynamics of FDI over manufacturing growth in Malaysia using data from 1970 to 2003. The result showed FDI elasticity in the short run and long run are significant. For the long run, it can be concluded

that every 1 percent increase in FDI will contribute to 0.115 percent increase in manufacturing value added output in Malaysia.

Issam A.W. and Magdy Alamin (2008) analyzed the impact of foreign direct investment on economic growth, if any, in Sudan during the period (1982-2007). The important findings are that FDI helps to promote economic growth in the Sudan.

Tang et al. (2008) explained China's quarterly time series data for the period 1998-2003. The result showed that there is unidirectional causal effect between FDI, domestic investment (DI) and economic growth.

In a study Syed Imran Ali Meerza (2012) suggested that there is causal linkage between trade, FDI and economic growth of Bangladesh covering period 1973-2008. The empirical results found that there was a long run relationship between the variables as well as a unidirectional causal relation between FDI and export which runs from export to FDI.

Some literature suggests that the FDI inflows have different impact on different sectors of the economy of host countries.

Laura Alfaro (2003) finds that FDI flows into the different sectors of the economy (namely primary, manufacturing, and services) exert different effects on economic growth. FDI inflows in the manufacturing sector tend to have a positive effect, whereas FDI inflows in the primary sector a negative one.

Peng Hu (2006) analyses various determinants that influence FDI inflows in India which include economic growth, domestic demand, currency stability, government policy and

labour force availability against other countries that are attracting FDI inflows. It is observed that India has some competitive advantages in attracting FDI inflows, like a large pool of high quality labour force which is an absolute advantage of India against other developing countries like China and Mexico.

Chandana Chakraborty and Peter Nunnenkamp (2008) said that booming foreign direct investment in post-reform India is widely believed to promote economic growth.

Chew Ging Lee (2009) has pointed out that GDP per capita has a positive effect on FDI inflows in the long run.

Hosein et al. (2009) used cointegration, VECM and Granger causality for the 1970-2006 annual data. They explained on the causal relationship between FDI, DI and economic growth for the Egyptian, Moroccan and Tunisian countries. The association between variables differ for different countries. There is unidirectional causality between FDI and GDP in Egypt and Morocco and bidirectional causality between FDI and GDP in Tunisia.

In a study by Iqbal, M.S., Shaikh, F.M., and Shar, A.H., (2010) examined the link between FDI, trade and economic growth in Pakistan. The paper first presents some stylized facts of patterns of FDI inflows, international trade and economic growth in Pakistan. The study shows that both international trade and economic growth are increasing over time. The study used VECM framework to test the causality relationship between the variables and mentioned two ways causal connections exist between economic growth, export and FDI, with unidirectional of import to export and FDI. The

study concludes that FDI invested in Pakistan was attracted by its economic growth and its foreign trade strategy. Moreover, FDI and trade are two important factors that enhance the affect of economic growth in Pakistan.

In a study by Kakar, Z. K., and Khilji, B.A (2011) examined the causality between FDI, trade openness and economic growth for Pakistan and Malaysia for the period 1980-2010. The study shows that in the long run trade openness positively effects the economic growth in both Pakistan and Malaysia. The result of Granger casualty shows that all the variables except FDI are found to be significantly stimulating growth in Malaysia, where real effective exchange rate and trade openness cause GDP growth but FDI seems to have an opposite casual relationship with GDP where GDP cause FDI in Malaysia.

Based on the review of existing literatures, it is found that there are limited studies on the relationship among Trade Openness, FDI in Pharmaceutical Industry and Economic Growth.

Objectives

The objective of this paper is to examine the causal relationship among FDI in Indian Pharmaceutical Industry, trade openness and economic growth for India. The purpose of the cointegration test is to determine whether groups of non-stationary series are cointegrated or not. This study aims to determine the impact of FDI and trade openness on economic growth in India for the period 2001-2014.

Data and Methodology

The study is based on published sources of data collected from Reserve Bank of India ranging

2001-2014. The variables in this study include GDP Growth Rate, FDI and Trade Openness.

We specify an empirical growth model that introduces foreign direct investment, trade openness and their impact on economic growth.

$$\text{Ln}Y = \alpha + \beta_1 \text{Ln}(\text{FDI}) + \beta_2 \text{Ln}(\text{TOP}) + \mu_i \quad (1)$$

where, Ln = Natural logarithm;

Y = GDP growth rate;

FDI = Foreign direct investment;

TOP = Trade openness (trade to GDP ratio);

μ_i = Error term.

The unit root test is used to solve the problem of stationarity and to determine the order of integration between the variables. Johnson Cointegration test is performed for the long run relationship among series.

All data are expressed in natural log in order to include the proliferative effect of time series and are symbolized with the letter 'Ln' preceding each variable name. If these variables share a common stochastic trend and their first difference is stationary, then they can be cointegrated. Also, the use of 1st differences in econometric studies facilitated the results interpretation, since the first differences of natural log of initial variables represent the rate of change of these variables. For the analysis of the multivariate time series that include stochastic trends, the Augmented Dick Fuller (ADF) unit root test is used for the estimation of individual time series with intension to provide evidence about when the variables are integrated. This is followed by multivariate Cointegration analysis. Having found that all the three variables in examination have unit roots (that is, they are integrated of order one), our next step is to determine whether or not there exists at least one linear combination of the non-stationary variables that is integrated of order

zero (I(0)). Cointegration, an econometric property of time – series variable, is a precondition for the existence of a long run or equilibrium economic relationship between two or more variables having unit roots (i.e. Integrated of order one). Two or more random variables are said to be cointegrated if each of the series are themselves non-stationary.

Granger Causality from the variable y to the coincident variables x and z is established if the null hypothesis of the asymptotic Chi-Square (2) test is rejected. A significant test statistic indicates that the x and z variables have predictive value for forecasting movements in y over and above the information contained in the latter's past.

Gross Domestic Product

It is the sum total of gross value added by all resident economic agents in the economy at current market prices during the accounting period.

Foreign Direct Investment

It is the total investment done by other developing nations into our country and resources flowing into the country in physical infrastructure. This is investment not done for key welfare areas such as health, education and training, roads and railways etc.

Trade Openness

It is the sum of exports and imports and taking its ratio with GDP. Trade openness is a channel through which FDI, capital inputs, goods and services flow to host countries or regions. These are sources of economic growth to developing countries. The relationship between trade openness and economic growth has been an issue of debate to the academics and researchers in recent years. Trade can directly increase per capita income when countries specialize in

producing goods in which they have a comparative advantage but it also can indirectly encourage development via other channels such as technology transfer, product diversity, increasing scale economies, efficient allocation and distribution systems within the economy. Openness raises imports and exports of goods and services and improves domestic technology. Hence, production process is more effective and productivity rises. As a result, economies open to world trade; grow faster than closed ones and increasing openness is assumed to have a positive impact on growth.

Empirical Models and Results

Unit Root Test

A time series must be required to be stationary for feasibility of inference and forecasting. We have nonstationary time series, regression analysis involving such time series may lead to spurious regression. We regress lnGDP on lnTO, lnFDI and we obtain high R2 (i.e., 89.39%) value and such tests are not reliable. Standard results for OLS do not hold.

Stationarity can be checked by finding out if the time series contains a unit root. This study uses the Augmented Dickey Fuller (ADF) test for unit roots. The ADF test based on the following regression model that consists of running a regression of the first difference of the time series against the series lagged once, sum of lagged difference terms and a constant and a time trend.

$$\Delta Y_t = \beta_0 + \beta_1 t + \beta_2 Y_{t-1} + \sum_{i=1}^k \alpha_i \Delta Y_{t-i} + u_t \text{-----(2)}$$

Here, ΔY_{t-1} shows the first differences with k lags. On the other hand, α_i adjusts the error of autocorrelation. It requires to estimate α_i and coefficients β_0, β_1 and β_2 . The null and alternative hypotheses for the existence of unit root in variable Y_t are as follows:

Rejection of the null hypothesis denotes stationarity in the series.

Table 6
ADF Unit Root Test

Null Hypothesis: lnGDP, lnFDI and lnTO Contain Unit Root

Variable	ADF Test Statistic (p value)	
	On level series	On 1st Difference series
lnGDP	1.70505(0.9988)	-3.730270(0.0231)**
lnFDI	-2.127099(0.0569)	-3.465479(0.03)**
lnTO	-1.202401(0.6390)	-4.173470(0.01)***

Source: Authors' Own Calculation

Note:(1) Test critical values at 1%, 5% and 10% level are -4.121990, -3.144920 and -2.713751 respectively.

(2) ***, ** and * denote rejection of null hypothesis at 1%, 5% and 10% level of significance respectively.

The results shown in Table 6 suggest that the null hypothesis of a unit test in the time series cannot be rejected on variable levels in a logarithm form. However, all of variables are stationary in their 1st differences Therefore, all the variables are integrated of order one, I(1).

Co-integration and Johansen Co-integration Test

Co-integration of two (or more) time series suggests that there is a long run relationship among GDP, Trade Openness and FDI. Since it is found that the variables under the examination are integrated of order 1, the co-integration test is necessary to perform. Two types of Johansen test are identified one is with trace and the other is Eigen value . The testing hypotheses are the null of non co-integration against the alternative that is the existence of co-integration (Johansen and Juselius 1990). In this stage, Johansen co-

integration test is used to identify a co-integrating relationship among variables. The outline of Johansen test is given as follows:

If x_t indicates a $k \times 1$ vector that are not integrated in order higher than 1, in that case x_t can be represented as a Vector Auto regression of order p :

$$X_t = \mu + \Phi D_t + \Pi p X_{t-p} + \dots + \Pi 1 X_{t-1} + \epsilon_t, \quad t=1, \dots, T \quad (3)$$

Where; ϵ_t residual term, D_t deterministic term, $\Pi 1, u, \Pi t-p$ matrices coefficients.

The Table 7 shows the result of Johansen co-integration test. Both the trace statistics and eigen-value statistics indicate 2 co integration vectors at 5 percent level. The existence of the co-integrating equations prompts us to confirm the long run equilibrium relation among GDP, FDI and Trade Openness. This indicates that there is long run equilibrium in the model.

Table 7
Johansen Multivariate Co-integration Test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.897325	45.48900	29.79707	0.0004
At most 1 *	0.732541	18.17475	15.49471	0.0193
At most 2	0.177803	2.349303	3.841466	0.1253
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.897325	27.31425	21.13162	0.0059
At most 1 *	0.732541	15.82545	14.26460	0.0281
At most 2	0.177803	2.349303	3.841466	0.1253
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Authors' Own Calculation

Granger Causality Test

In order to see the direction of causality, we have applied Granger causality test. X is said to Granger-cause Y if Y can be forecast with greater accuracy by past values of X rather than not using such past values, all other relevant information in the model remaining the same. Consider the equation:

$$Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \alpha_2 Y_{t-2} + \beta_1 X_{t-1} + \beta_2 X_{t-2} + \mu_t \quad (4)$$

$$X_t = \delta_0 + \delta_1 Y_{t-1} + \delta_2 Y_{t-2} + \eta X_{t-1} + \eta_2 X_{t-2} + \nu_t \quad (5)$$

If $\beta_1 = \beta_2 = 0$, in equation (a), X does not Granger cause Y. If, on the other hand, any of the β coefficients are non-zero, then X does Granger cause Y and same test can apply on the equation (b) where Y does not Granger cause X can be tested. As a practical guide one can include as many lags as are necessary to ensure non-autocorrelation residuals.

The results of granger causality are presented in table 8. The Granger causality test results that the causal relationships exist among Trade Openness, FDI and GDP. But, only bidirectional relationship is found between FDI AND which imply that FDI may have impact on the economic growth of the country.

The granger causality test suggests that there exists bidirectional causality between FDI and GDP as because from our results we may be nullify the null hypothesis. Therefore, we may say that the both FDI and GDP granger cause each other during our study period. Now, when we checked the direction of causality between the TO and GDP, we found there is unidirectional causality flows from GDP to TO. Lastly our results also confirm that unidirectional causality is present between FDI and TO and the direction of causality is from TO to FDI.

Table 8
Pair-Wise Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
LNFDI does not Granger Cause LNGDP	12	5.68388	0.0342
LNGDP does not Granger Cause LNFDI		7.06566	0.0209
LNTD does not Granger Cause LNGDP	12	1.41369	0.3050
LNGDP does not Granger Cause LNTD		9.73503	0.0095
LNTD does not Granger Cause LNFDI	12	7.35428	0.0190
LNFDI does not Granger Cause LNTD		3.78473	0.0769

Source: Authors' Own Calculation

Conclusion

This paper investigated the causal relationship between FDI, trade openness and GDP in India over the period of 2001-2014. The results of the ADF unit root tests indicate that all the variables in our study are stationary after first difference. Thus, we proceed to the Johansen cointegration test and we found that the variables are integrated which shows that there is present the long run relationship between the variables. Now, pairwise Granger causality test postulates that there exists bi-directional causality between GDP and FDI. But, when we check the causality between trade openness and GDP as well as trade openness and FDI, we found uni-directional causality. Now, the direction of causality between GDP & trade openness is flows from GDP to trade openness, where as the direction of causality between FDI and trade openness flows from trade openness to FDI.

Therefore, we may conclude that increase in GDP may cause trade openness vis-a-vis Trade openness increases the inflow of FDI.

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Pharmaceutical Sales Compensation Trends in India with Reference to Tamil Nadu and Kerala

Alexander Itty* & Smriti Verma**

Abstract

The pharmaceutical industry nationally & globally has shed thousands of sales representatives over the past decade, but paradoxically drug makers continue their elementary agenda to invest in hiring and training phenomenally, albeit at rates that are only slightly higher than what was seen several years ago. The researcher tries to investigate on the upshot and the inference is that the demise of these marketing stalwarts could have been exaggerated by sources unknown. Apropos of the reports from the pharma industry of India, the 2013 market size stood at 16.4 billion US\$ and is expected to reach an exorbitant figure of 84.9 billion US\$ by 2020 which is beyond any possible CAGR enhancements. This prediction indicates not only the potential of the industry but an adverse effect of how many citizens of the country can fall ill due to avoidable or non avoidable circumstances. CAGR of 2013 shows 14.3% as compared to the figures of FY 2009-13. This also proves the capability & effectiveness of a large sales force called Medical Representatives within the industry. As compared to the sales force of different industries, Medical Representatives have a very different style of operations and reporting. Although retail sector & doctors are the only two component targets, these sectors expect a day-to-day work, involving a lot of patience and understanding. This article examines the compensation sales plan structure adopted in the pharmaceutical companies which is quite unique in the commercial sector of India. A special focus is given to the southern states especially Tamil Nadu & Kerala.

Introduction

Medical representative is employed by a pharmaceutical company to maximize the prescribing of that pharmaceutical company's products in a geographical area. There are no

strict formulae for how to maximize product prescribing - hard work is only part of the story and often working smarter is the key to success. This is why pharmaceutical companies are constantly looking for candidates who have the ability to think (and then put into practice) new

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ways of approaching sales opportunities. As an experienced representative you will know your territory, know your customers and have a clear idea which part of your territory offers the highest potential for sales. But the story is totally different for a fresher. Many a times the reputed companies does not call for fresh representatives but on the job training is one privilege at the hands of certain organizations where the training & probationary periods are herculean. You set yourself clear objectives for every day that you work and will know exactly what you want to achieve from each customer visit. The traditional work pattern for a non-specialist medical representative is to spend the morning in 1:1 meetings with GP's and Practice Nurses. You may need to have booked an appointment for these meetings or you may be able to see the GP "On Spec" ie. if they are not too busy. At lunchtime you may have booked a meeting with a group of GP's/Practice Nurses or Hospital Doctors, where you will make a promotional presentation about your products and provide lunch. In the afternoons you will call on hospital doctors to try and persuade them to use your products. In addition you will call on local chemist shops where you will try to get information on the prescribing habits of the local GP's. This information should help you plan and set yourself objectives for future sales visits to those GP's. Finally, when all the selling is over, you will record all the information you have gathered regarding your sales calls and then plan for your next visits.

Review of Literature

Extensive studies are focused on the pharma industry, pharmaceutical companies and the drug related topics at large. Minor attention or to be more precise negligible attention is given on the importance of sales compensation plans in the pharma industry. Motivation being a basic

factor in the field of sales irrespective of the industry is studied at various levels. Economic Times of March 2015 reports that Sales Management of MNC pharmas in India are remodeling the structure of sales department by removing traditional medical representatives and replacing them with new age executives (Raji Reddy Kesireddy, 2015). Companies namely Pfizer, Sun Pharmaceutical Industries, Abbott, Dr Reddy's Laboratories, Cipla, Lupin, Glenmark Pharmaceuticals, Mankind Pharma, Torrent Pharmaceuticals, Ipca Laboratories and Hetero Drugs have started strategic move and implementation of using this "new cream of medical representatives" to improve sales of niche products and profits as publically notified by reliable sources of the Federation of Medical and Sales Representatives Associations of India (FMRA). Many of the MNC drug makers have been hiring management graduates from premier institutes in good and large numbers with hefty pay packages. The vital point of justification that these new gen executives can make better presentations with specialist doctors who may not have much time to spare. If this is widely dominating the industry it will be wise to think on the fortunes of trained and experienced bunch of more than six lakh medical representatives we have in the country presently.

Motivation would be precisely defined as a process that initiates, guides and maintains goal oriented behaviors. It keeps the sales force continually stimulated with moral, committed, empathetic attitudes towards the countless objectives set by the company. Hair et al. (2010) explained in a much broader sense that motivation as the set of dynamic interpersonal processes that cause the initiation, direction, intensity and persistence of work-related behaviors of a sales force towards the

attainment of organizational goals and objectives. Traditional beliefs are prevalent to sensitive and emotional addendum towards motivational factors as a driver to efficiency. Although obsolete, age old belief holds truth against the fact that the hygiene factors acts as motivators and are directly linked to the performance of the sales force irrespective of geographical and demographical differences. Bodla & Naeem (2010) attributed to the fact that financial incentives, fatigue allowances, raise in pay and fringe benefits, relaxed working environment are always linked with performance of sales force.

The role of FMRAI (Federation of Medical and Sales Representatives' Associations of India) by formulating a 27 point common charter of demands which consists of not only extension of the existing benefits of all labor laws for the field workers but also demands for the people on medicines. Due to the strenuous effort of the FMRAI nearly 40 large companies including multinational drug companies have recognized FMRAI as trade union for their field workers and regularly signs wage agreements periodically. Regular meetings and review meetings on day to day grievances of the field workers is also held with these companies. In regional level, some smaller companies also recognize FMRAI through its Zonal Committees. FMRAI has become the only national organization for the medical field workers in the country having functioning centers known as local units in 300 cities and towns across the country and FMRAI by its popularity and systematic functioning has a whopping membership of nearly 65,000

Training & Development

- Training is an essential ingredient to becoming successful in any field.

Pharmaceutical sales are no exception and you will receive a comprehensive initial training programme. This comprises 3 areas:

- Basic anatomy and physiology
- How your particular drug works
- How to become a more effective salesperson

The sales compensation plans in the medical sector is unique as compared to other industry sales compensation plans. Before we discuss on the compensation plan it would be imperative to focus a little on the pharmaceutical distribution plan now prevalent in India.

Pharmaceutical Distribution in India

Drug distribution in India has witnessed a paradigm shift. Before 1990, pharmaceutical companies established their own depots and warehouses. Now they have been replaced by clearing and forwarding agents (CFAs).

CFAs: These organizations are primarily responsible for maintaining storage (stock) of the company's products and forwarding SKUs to the stockist on request. Most companies keep 1–3 CFAs in each Indian state. On an average, a company may work with a total of 25–35 CFAs. The CFAs are paid by the company yearly, once or twice, on a basis of the percentage of total turnover of products. Large drug manufacturers will have CFAs in almost every state in India. CFAs majorly help manufacturers in providing reach for its products. They majorly facilitate in by passing the state sales tax (CST- 4%). CFA's are just created to avoid local state taxes (they hardly take 1 or 2% margin). Mostly CFAs serve a single company. CFAs follow a stock transfer model from the manufacturer and all invoices sent to the stockiest are on the name of the manufacturer itself. Based on the demand for their products they decide on how many stockiest to maintain in each district and further in talukas.

Association of Druggists and Stockiest in India

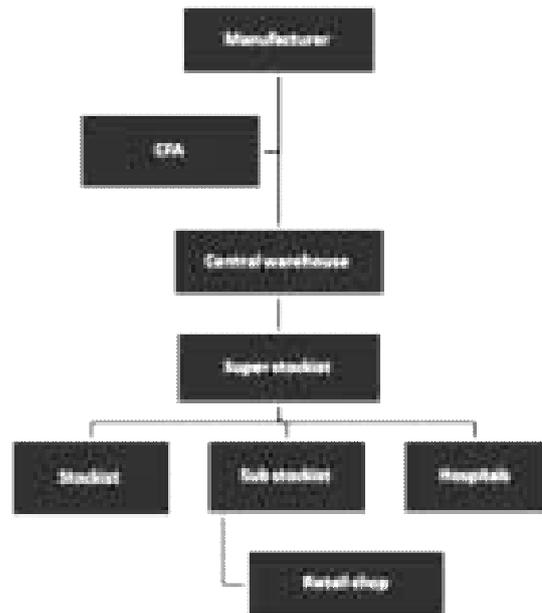
All India Organization of Chemists & Druggists (AIOCD) has over 5.5 Lac members from retail chemists and pharma distributors/stockists. Stockist plays a very powerful role in the pharma distribution in India. Companies cannot bypass stockiest and sell directly to institutions or retail chains. They may face a ban from the stockiest and considering the substitutes available for each molecule, companies cannot take the risk of losing the sales.

Retail Pharmacy Chains

Organized pharmacy retail sales in India are only 3% of the total sales. They can procure the stock from the stockists registered in the association (AIOCD) only (Manufacturers would not sell their products directly to retail chains). The remaining 97% market is completely controlled by the stockists. Sales representatives do rarely come and talk with the concerned distribution managers in the retail chains to sell their products.

Institutional Supplies

Institutional supplies are 7% of the total drug sales in India. Distribution for institutions (divided into state funded, central funded & large hospitals) happens either through stockist or directly from the company CFA. Companies bid for the tenders passed by these institutions like major PSUs (Public Sector Units) including NTPC, BHEL etc.



Typical Pharmaceutical Distribution structure is depicted above applicable to the states of Tamil Nadu, Andhra Pradesh & Kerala.

Typical Sales Force Structure in the States of Tamil Nadu, Kerala & Andhra Pradesh is as below

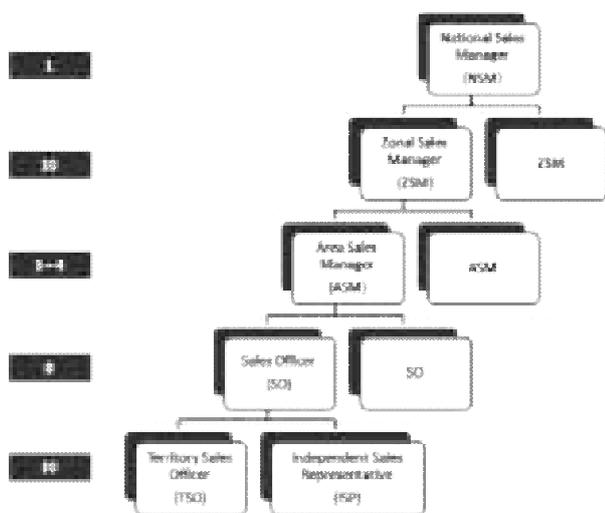
Seven basic tips given to the medical reps are basically:

- 1) Be honest and stick to the facts
- 2) Be clear & precise
- 3) Use visuals always, if an opportunity is given
- 4) Support your argument with evidence
- 5) Do not hide or suppress unpleasant information
- 6) Maintain constant communication
- 7) Build a relationship with the doctor

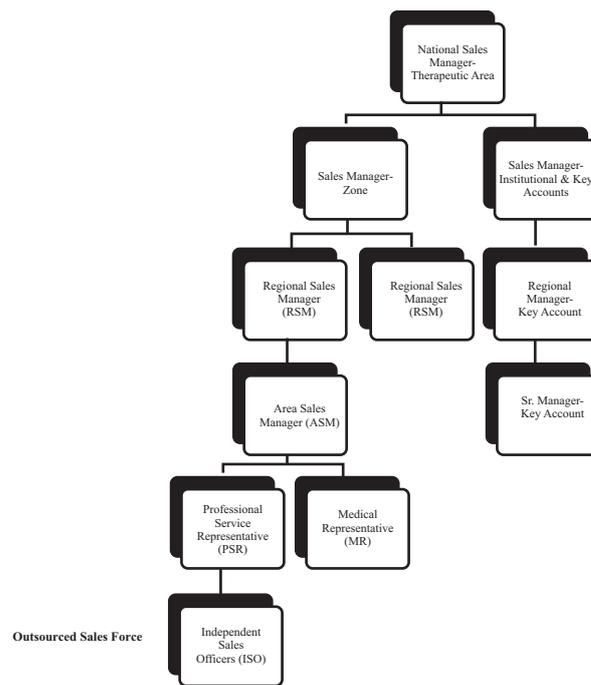
An average compensation plan for a Medical representative is depicted as one who draws a substantial income. Because of the high level of technical knowledge required and the high profit margins for pharmaceutical products an MSR gets an incentive of 20K to 50K quarterly. Average annual salaries for MSR range from

1.2L to 2.4L per annum plus annual or half yearly trips to international / domestic locations.

A figurative representation of the sales organization structure is depicted below which are prevalent in many of the corporate within the Industry in South India and moreover on a national level.

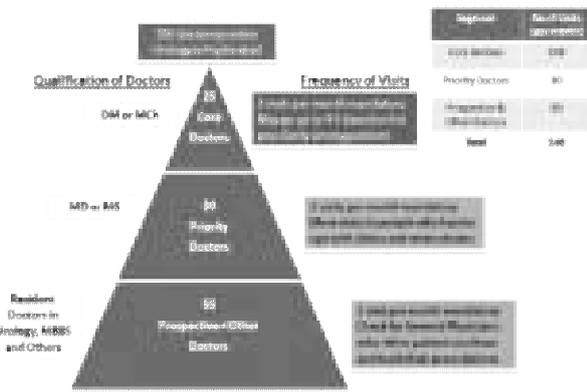


- Sales personnel dealing with OTC (over the counter) products have to cover all the pharmacy retail outlets in their allotted territory. The total sales force required to cover India would be in the tune of 2400 – 3200 approximately.
- Since it is not cost efficient to maintain such a large sales force on roles and the products are from OTC, companies hire independent sales representatives at the territory level.
- Another format of the sales organization (functional wise) prevalent in the Medical industries is as shown below:



Independent Sales Officers

One consideration is working with independent sales representatives--sometimes called manufacturers' representatives or manufacturers' agents--who sell products or services to customers directly for the company or companies he or she works for. Unlike with hiring a salesperson, with a rep you are taking on no initial risk until the person begins producing revenue, because you're not responsible for health and retirement benefits. Moreover ISR, as a miniature part of BPO is an intelligent move from the corporate sector. It has worked out well in the American & European countries and is finding its worthwhile for Indian environment too. Sure, you may have to dole out a little more commission for each sale. But it's worth it if you want to test the market, or if your product will benefit from a demonstration or your customers require constant explanation of new products.



The above figure shows a typical sales visit plan for a Medical representative or medical sales officer to chart out the plan of monthly visit, expected out to be in line with a structured formula or pattern of the manufacturer.

The Compensation Plan of the MSR (Medical Sales Representatives)

The Medical Representative plan running in different companies within the pharmaceutical Industry is moreover same. For the states of Tamil Nadu, Andhra Pradesh & Kerala, the pattern is identical since the corporate HQ considers these states are southern states and hence the plan runs on very similar quantum with mere or meager changes here and there. The Mega MNCs, Medium sized Indian corporate and the small companies has eventually same incentive structure, where the pattern encompasses like a financial target year is divided into four quarters and targets are set for each quarter or it can be termed as a quarterly target. (Taking into consideration Torrent Pharma as an example for easy illustration). Quarterly target is set as 30 lacs which would run into 120 lacs or 1.4 crores annually for each MSR.

Achievement of the target & sales incentive calculations are set bit complicated on the part of the MSR team. If in the FY 2013 the achievement of first three quarters was 75 lacs, then the actual achievement in the first three

quarters of FY 2014 has to have an incremental sales increase. Upon the incremental sales increase an incentive plan of 8.33% is allotted. To be more precise if 90 lakhs are achieved in FY 2014 1st, 2nd and 3rd quarters and since the actual achievement in the same quarters of FY 2013 is 75 lakhs; the MSR would receive 8.33% of 15 lakhs as the incentive amount. This also signifies that an incentive plan may not be applicable for an MSR leaving the company in one year.

An additional criteria is that if 89% to 90% of the target set for the first quarter (Jan Feb March 2014) is achieved then the MSR is supposed to achieve 90% of the target of the 1/3rd target of the 2nd quarter in the month of April 2014 itself. If not achieved the MSR has chances of losing some amount when the final calculation is done. It means that first month of each quarter is critical for an MSR's performance. This could be to make sure on the company's part the indication of the market performance. This pattern is almost uniform for all companies in the industry and in certain cases, as per the size of the company the 8.33% incentive structure may vary in the range of 8 to 10% upon the incremental sales over the previous year's corresponding quarter.

On addition a 200 Rs daily Bata is allowed for the MSR which cannot be considered as a part of saving because 100 Rs fuel & 100 Rs refreshment cost may eat out this 200 completely. As per the spokesperson it seems that even the actual expenditure may go beyond this stipulated amount at times when the daily travel is extensive. Also the food cost may differ at different locations and then the actual may exceed over this amount. One of the main demands from the MSR team is the rise of the daily bata which the industry is not encouraging. The Pharmaceutical manufacturers association

of India has agreement in not violating the incentive plan too vividly without approvals of the association since they feel that it would make the industry more complicated.

MSR does not switch jobs quite often because the incentive plan calculations would benefit them consistently if they stay with the organization for long periods. Even the industry demands for long stay and sometimes legal bonds are too signed for contractual periods. This prevails because of the high level of recruitment cost, induction and training cost incurred by the company on one MSR.

Other allowances are Medical Insurance coverage for self & family. No housing allowance or children education allowance are formulated. No loans for purchase of two wheelers & four wheelers. Some of the companies depending upon their ranking in the industry may offer two wheelers. On the other hand two wheeler possession is a criterion while calling for interviews & selections. Loans are allotted for Laptops which would be recovered at source on a monthly basis.

Conclusion

Incentive plans are moving away from being a specialty to a sales force only. More and more companies are adding their customer service reps, developers, production specialists etc on to variable pay plans to try and motivate the desired behaviors within them. Additionally, sales performance management is becoming more of a specialized function within the companies rather than just being a part of the finance or sales management functions. Incentive plans are becoming more specialized and more linked to key performance indicators. Sales compensation management is a complex, administrative process with significant strategic implications. Salespeople must be paid

accurately and on time. Sales management must have a good understanding of the performance of their people. And sales executives must have visibility into how the plans are working so that changes to plans can be designed and modeled. Of the root causes, a flexible system and efficient processes are essential enablers of success. However, true success comes only from leveraging people with enough time and the expertise and experience to optimally implement and manage the processes. Additionally foundation for solving sales compensation management problems is about linking corporate strategy to sales execution.

To secure the entire safety of the more than 6 lakh Medical Representatives, FMRAI was formed in April 1963 in its first conference at Hyderabad and in continuation of the growth the issues were resolved in a convention at Nagpur in 1962, where it also aimed to improve living conditions of the Medical Representatives. FMRAI has also joined All India People's Science Network (AIPSN) – a professional body which is a national organization for science movement. AIPSN actively work in the areas of health and pharmaceuticals & FMRAI jointly with AIPSN and with its own initiative, has campaigned for a Rational Drug Policy. FMRAI is considered as an important policy critic on Pharmaceuticals Policy of the Government and the Ministry of industries....FMRAI is also associated with Jan Sasthya Abhiyan, which along with 100 different organizations conducts campaign and movement throughout the country. The acceptance of FMRAI as a registered union and the huge membership it holds for the justice and benefits of the large group of Medical representatives envisage the sales force to be not left at the crossroads rather lead their lives with objectives fulfillment and happy living.

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Cluster Analysis for Customer Segmentation – A Case Study of Vespa S.

Garima Malik*

The ungeared scooter segment has been witnessing high growth trend since last 4-5 years. Although the Indian two wheeler market is dominated by motorcycles, scooters have exhibited remarkable growth over the years. This growth had encouraged many players to enter the Indian scooter segment. HMSI, Yamaha , Piaggio, Suzuki , Hero Motocorp, Mahindra Two wheelers , and TVS competing fiercely in coming out with new products to gain a significant market share in the competitive automotive market. Hence, in spite of the current challenging scenario, ungeared scooter segment has been able to grow by 16 per cent during April-February period of 2013.

Piaggio & Co. S.p.A. of Pontedera, Italy manufacturers of Vespa have come up with a new scooterette Vespa S. Vespa has been positioned at the premium end of the Indian scooter market. The challenge before Piaggio is to sell Vespa as a premium product to the Indians while making it sustainable and to ensure that the Vespa is a vehicle to which Indians would aspire. In order to position their new scooterette Vespa S, Piaggio Vehicles Private Ltd (PVPL) had approached a leading market research agency to conduct a static 2-wheeler clinic for 2 of their models, in a competitive scenario.

The case involves an in depth analysis to study the mapping drivers and value levers for purchase of Vespa S which would help in determining the customers perception and attitude towards the brand, the values associated with the brand and also the image associated with the brand. Analysing the preference of purchase of Vespa S over Vespa Regular. The case also tries to understand the consumer dynamics (changing needs, expectations and benefits sought), the emotional requirements of respondents from Vespa S. All this being done through Cluster Analysis which will help in identifying target customers who are similar in buying habits, characteristics and psychographics

Finally, the conclusions are given in order to help Vespa S create the right market communication.

Issues

- Analysing and determining the respondents perception and attitude towards the brand, the values associated with the brand and also the image associated with the brand.
- Understanding what rational and emotional values are attached with the scooterette.
- Understanding the awareness level of

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respondents in relation with Vespa brand.

- Determining the level of association of respondent with Vespa R (already in market) and Vespa S (going to be launched in market).
- Identifying the customer segmentation for Vespa S.

Introduction

A careful customer segmentation plays a vital role in successfully selling a product, one needs to understand what makes different customers tick and how best to reach them. Customer segmentation has become increasingly important in development of marketing strategies.

Italy-based automotive company Piaggio, known for its scooters and motorcycles, has re-entered the Indian scooter market after 13 years (in March 2012) through its own subsidiary Piaggio Vehicles Pvt Ltd. Piaggio's re-entry is a part of its global expansion strategy to attract the youth and new generation riders with a new, modern looking Vespa scooter in vibrant colors. Industry observers feel that the Indian scooter market provides an opportunity for Vespa to gain a strong foothold despite its scooter being priced higher than comparable models of other companies.

Piaggio & Co. S.p.A. of Pontedera, Italy have recently come up with a new scooterette Vespa S. Vespa has been positioned at the premium end of the Indian scooter market. In India, there is a clear differentiation made between the premium and economy segments in both the car and motorcycle markets. Experts say brands such as Harley Davidson and Triumph are considered as premium motorcycles and these in general have much larger engines and

are superior in performance. In India, motorcycles like the Rajdoot and the Royal Enfield have garnered a premium image with the associated retro feel. Vespa aims at achieving something similar with a retro feel and an Italian scooter image. Even though Piaggio Vehicles Private Ltd (PVPL) knows that while price would always be an important factor (inexpensive purchases do not need a lot of logic to back them up but expensive purchases do), for many customer groups, selecting scooterette was a more complex decision. The key questions were what attributes were important to which customer groups and how could the company appeal to those to whom price was only part of the purchase decision.

Hence in order to obtain positioning cues from their target customers, and thereby identify any marketing opportunities their new scooterette Vespa S can leverage, Piaggio Vehicles Private Ltd (PVPL) had approached KCBC a renowned market research agency to conduct a static 2-wheeler clinic for 2 of their models, in a competitive scenario.

KCBC set up a bike clinic where respondents were called to examine the scooterette and give their feedback regarding the same.

Background

The two-wheeler market in India is the biggest contributor to the automobile industry with a size of Rs.100,000 million. The two-wheeler market in India comprises of 3 types of vehicles, namely motorcycles, scooters, and mopeds. Foreign collaborations have been playing a major role in the growth of the Indian two-wheeler market. The modern two-wheeler firms in India have been manufacturing new categories of two wheelers such as Step Thrus

and Scooterettes. These have been produced by combining two or more two-wheeler segments. Foreign firms have already taken initiatives to own their two-wheeler subsidiaries in India.

Indian two wheeler industries saw a slight growth of 1.04% during the April-May period of 2013 compared against the same period of 2012. A total of 2,374,253 units were sold during the period as 2,349,814 units were sold in April-May 2012.

Hero Motor Corp is the biggest manufacturer in Indian market who sold 1,035,823 units during April-May 2013, thus registered a 3.54% decline in sales as against same period the previous year where 1,073,815 units were sold. The provision of giving 5 year warranty on every vehicle didn't pay off well for Hero.

The notable highlight of the period is the flourishing sales of Vespa, as they sold 8280 units during the period April-May 2013 and posted a growth of 247.02% as against same period last year. Honda, Yamaha and Royal Enfield had also posted growths while Suzuki sales took a downturn.

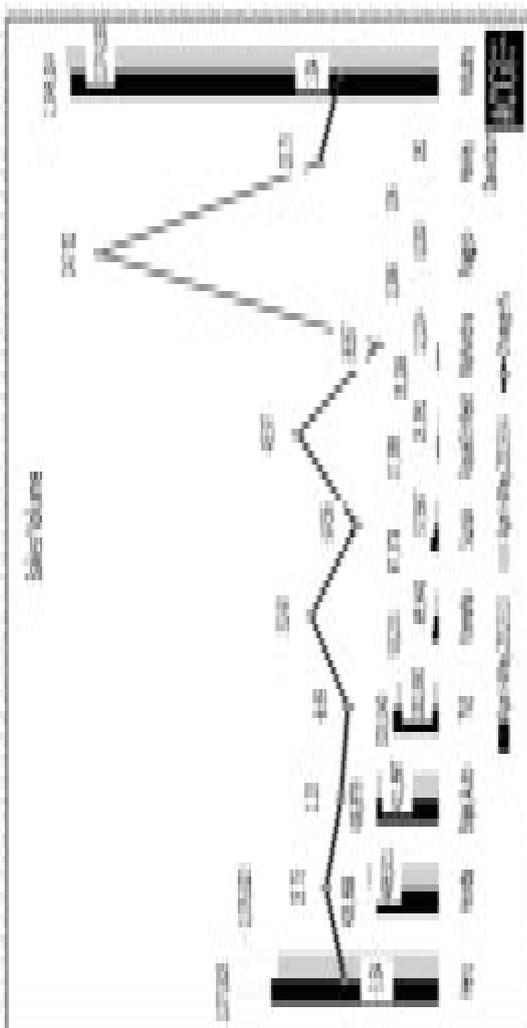


Figure 1.1 Sales Volume of Two Wheeler Industry

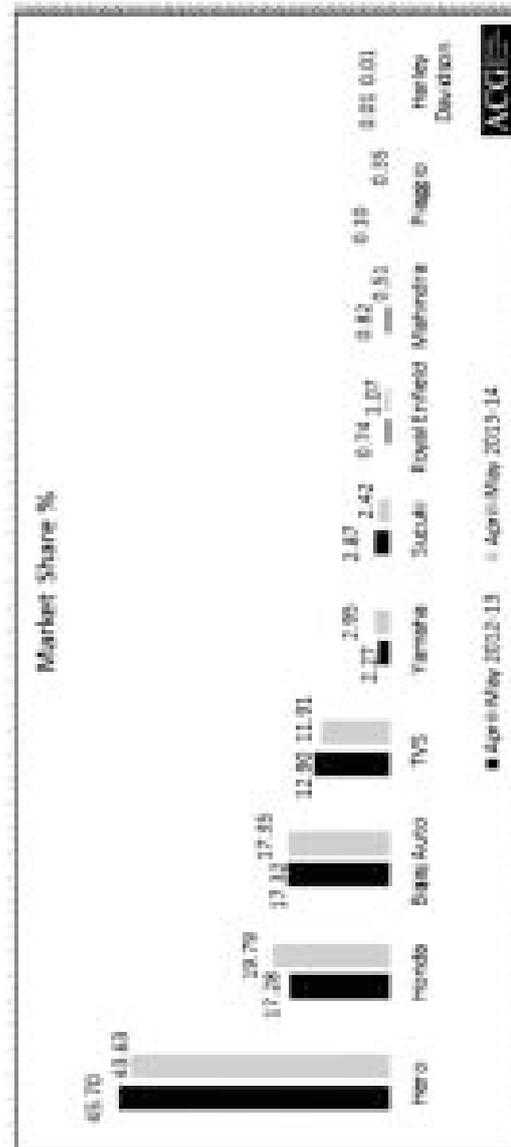


Figure 1.2 Market share of Two Wheeler Industry

The period April-May of 2013 saw the share of Hero came down to 43.63%. Honda gains some shares and put themselves at second place replacing Bajaj. Honda holds 19.79% share as per April-May 2013 while Bajaj has now 17.35% share.

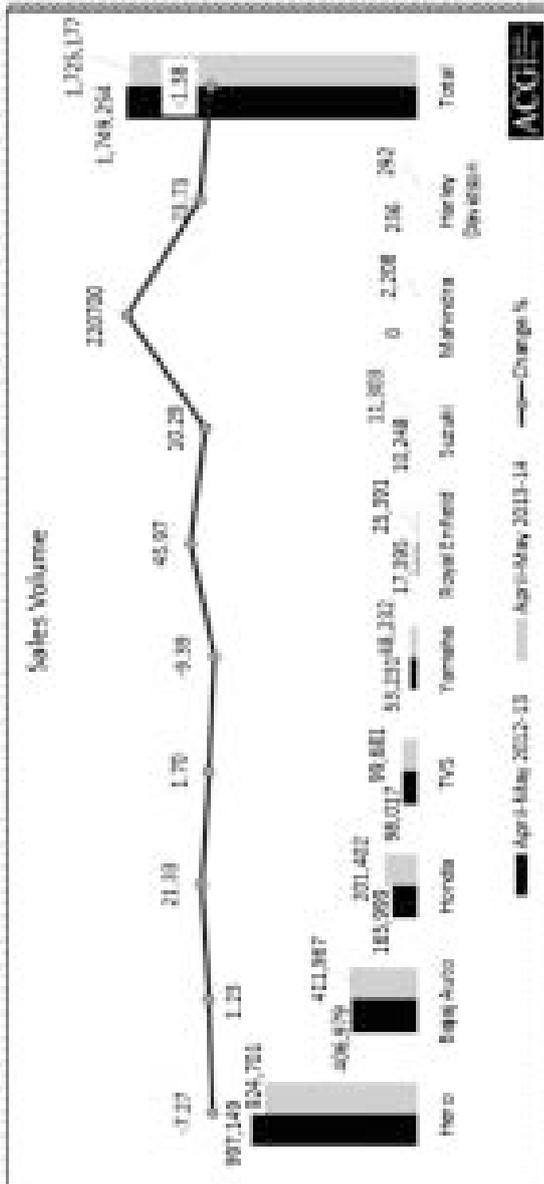
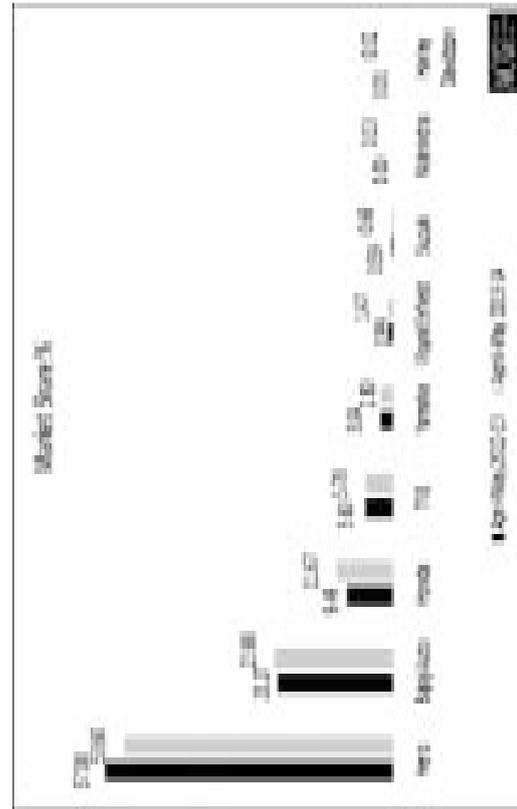


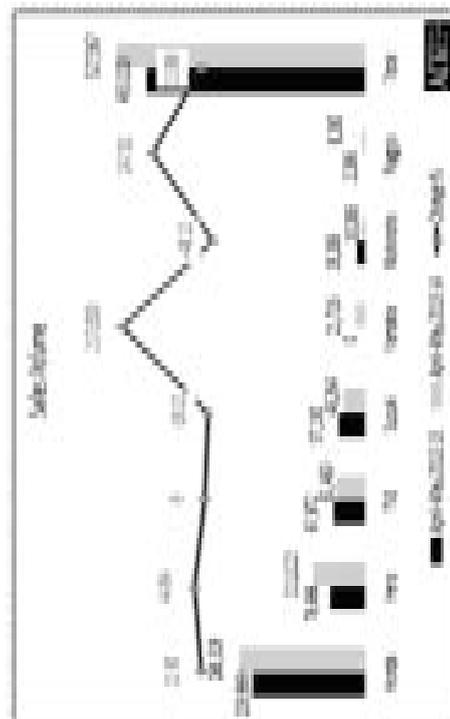
Figure 1.3 Sales Volume of Motorcycles

Sales of Hero declined by 7.27% while Yamaha also saw their sales went down by 9.39%. Apparently Honda registered 21.33% growth. Royal Enfield and Harley Davidson also wrapped up the month with concrete sales figures.



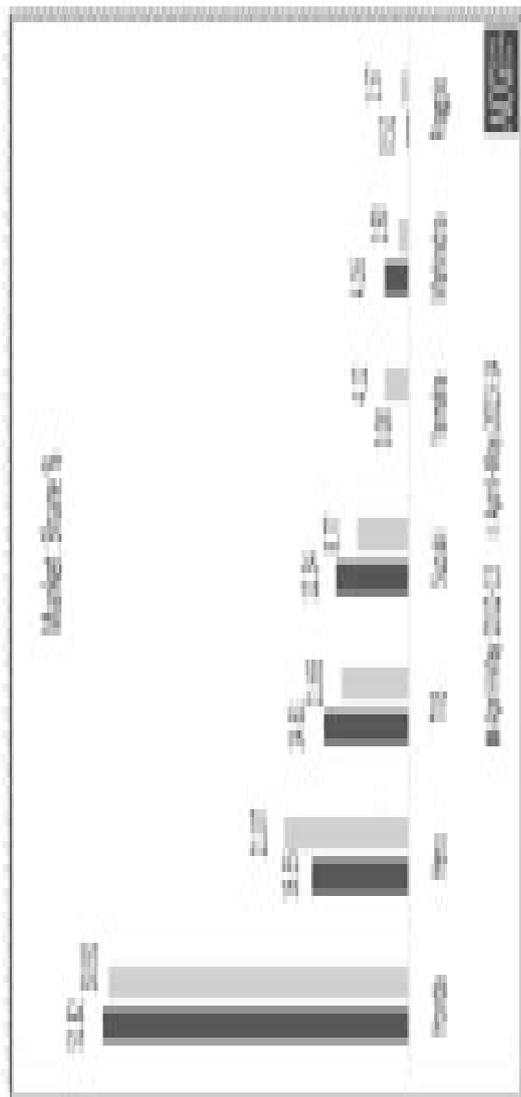
1.4 Market Share of Motorcycles

Triggered by the decline of sales Hero's share in motorcycle segment came down to 53.60% for April to May period of 2013. Their former partner Honda with improved share of 11.67% stays as third place in terms of sales in Indian two wheeler market.



1.5 Sales Volume of Scooters

The sales of scooter witnessed an encouraging growth by 13.88% in the April to May period of 2013 as compared to same period of 2012. Hero motor Corp had fared an uplifting growth of 44.94% during the period April-May 2013 as against April-May 2012. The newly launched Vespa has also reassured hopes for Piaggio as 8280 units were sold out in April – May this year. M&M has suffered a steep decline of 48%.



1.6 Market Share of Scooters

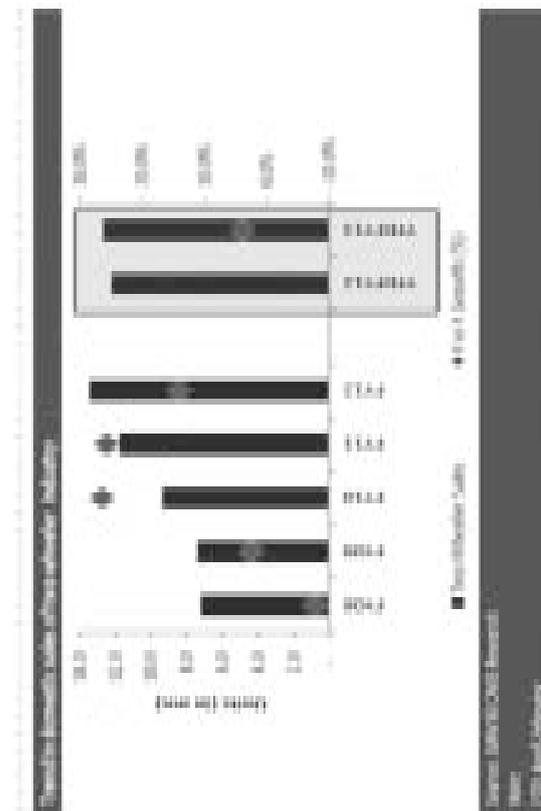
Honda remains mater leader in this segment and owns 50.92% of market share. Hero has again grew in market share for the period April-May of 2013 and now holds 21.07% of Scooter market share. To recapture the lost market share, Honda has now introduced 110cc Activa-I priced at

around Rs 44,000 and this will provide tough competition to Hero and Suzuki in coming months.

Rise in Scooter Industry in Comparison to Motorcycles

“Growth levels likely to moderate, scooters to act as a growth engine”

The demand for the two wheeler industry remained dejected in the current fiscal. According to CARE Research, the tough economic scenario resulting in high inflation, depleting growth in all economic activities, coupled with challenges like firm interest rates and spiraling fuel prices have moderated the growth in near term. Since there is a slowdown in the industrial activities, the income levels in urban areas have been affected. CARE Research observed that in spite of such a weak demand during third quarter of the year 2013, the two wheeler sales growth remained around 4 percent during April-February.



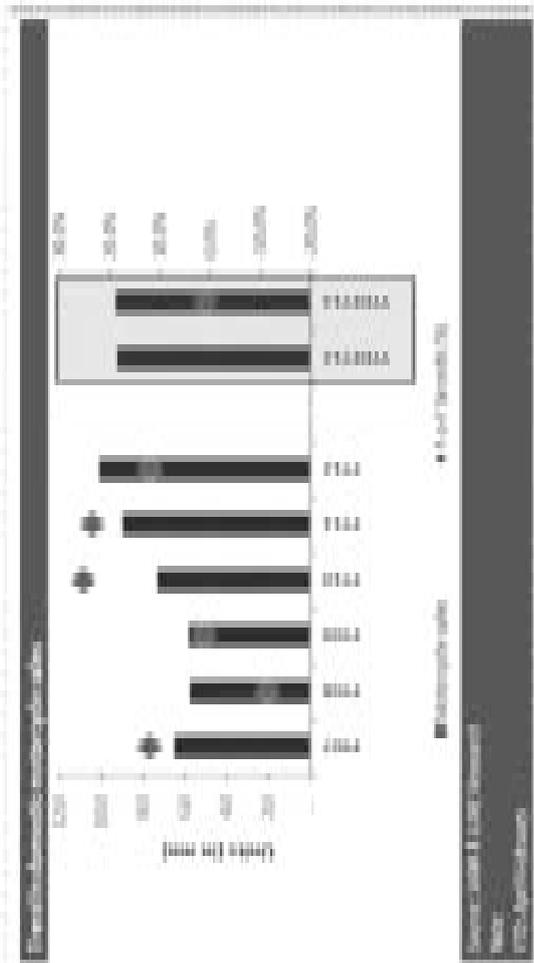
1.7 Two Wheeler Industry Domestic Sales

Motorcycles Expected to Take Back Seat in Near to Medium Term

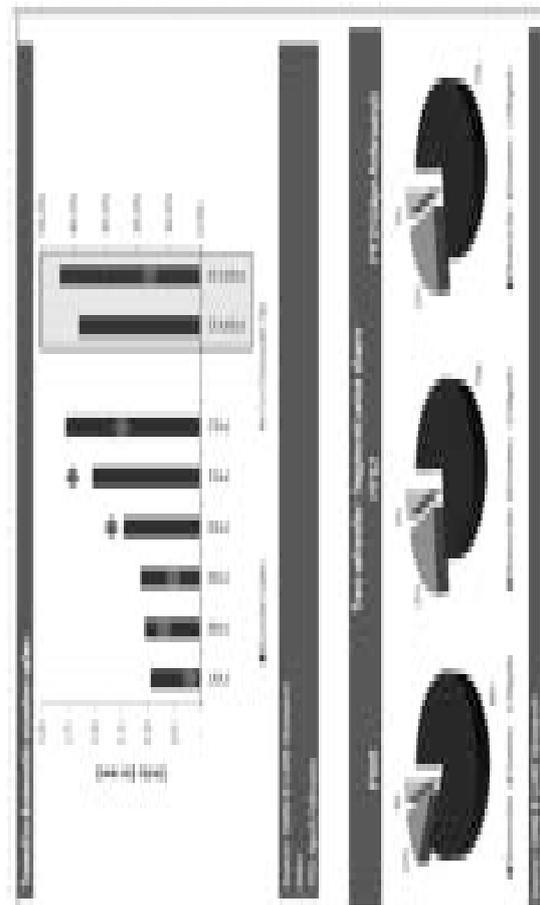
The motorcycle segment that has been mainstay for the industry since last two decades, but due to the impact on income levels in urban areas and slowdown in industrial and service activities, the segment has been witnessing slowdown in growth levels during past 4-5 years. For FY13 motorcycle demand growth remained around 1 per cent for first eleven months. Furthermore, growing popularity of ungeared scooters has also added to the woes of the motorcycle manufacturers. CARE Research foresees it would be difficult for the segment to retain the strong growth levels it has witnessed in past one decade owing to rising pressure due to substitution by scooters.

Ungeared Scooter Likely to Remain Growth Engine in Near Term

The ungeared scooter segment has been witnessing high growth trend since last 4-5 years. The scooter manufacturers which initially targeted working women population have off-late expanded their customer base by launching products catering to male buyers. For example, new models like HMSI Aviator, TVS Vego, Suzuki Access, Mahindra Rodeo, etc. has been able to lure considerable proportion of middle and upper middle class male buyers (primarily in age bracket greater than 35 years) for second vehicle. Hence, in spite of the current challenging scenario, ungeared scooter segment has been able to grow by 16 per cent during April-February period of 2013. CARE Research foresees, scooter segment to remain the growth engine for two wheeler industry in near to medium term period.



1.8 Domestic Sales of Motorcycles



1.9 Domestic Sales of Scooters

Two wheeler industry likely to register a growth of 8-9 per cent in the year 2014

CARE Research estimates marginal improvement in the economic scenario and expects the industry to grow by around 8-9 per cent in FY14. The motorcycle segment is likely to grow in a range of 6-7 per cent in FY14. The scooter segment is expected to remain the growth driver and is estimated to observe a growth of around 13-14 per cent for the year commencing 2014.

Perception and Attitude towards Vespa S

Majority of the respondents find the concept of Vespa S very appealing. This is mainly to do with the look of the scooterette, they say the striking and vibrant colour along with the audio visuals and pictures appealed to the senses, making the concept delightful. They even find the concept of Vespa Sporty Scooter extremely unique, some of the main reasons for such a response is the styling, attractive graphics, vibrant and eccentric colours, disc brakes and alloy wheels. They say that the scooter is something that the Indian market does not have. The seat design is also different; it has no back support since the concept of scooter was it's a "romantic seat". Another unique concept that is liked by the respondents was the possibility of customization that Vespa would offer-right from choice of colour, stickers to getting complimentary cool helmet. It stands out amongst the other scooters. One of the respondents even called it "a picture out of instagram". The alloy wheels gives the scooter a sturdy look. The Vespa Sporty even ranked 1 in respondents' preference of purchase. Since Vespa was high on style, design, looks, functional, situational and emotional factors.

Image Associated with Vespa S

The respondents feel that a young person will ride this scooter. The main reason behind this is that for the respondents Vespa Sporty exhibited youth. It is trendy. The colour, look and appeal of the scooter catered towards the young audience. The 'sporty' look of the Vespa S, its styling, features, graphics everything is 'modern' in its approach. Even the seat was especially designed for the young riders who want adventure and thrill in life (there was no back support). They even identify a fun loving person riding the Vespa Sporty. The main reason for this response is because a fun loving person enjoys activities like movies, shopping, travelling etc. And what better way to enjoy than to travel in the Vespa S. This scooterette will also be an ideal choice for someone who seeks excitement in life and would definitely use the Vespa Sporty when going out on picnics/ excursions with friends, to nearby places. Since this category of people particularly love weekend getaways and excursions. Even in the advertisement the company stresses on the importance of the Vespa owners ability to take the scenic route every day and to leave when they want and reach their destination faster. They say the scooter is light and a convenient mode of transport. It had the power and speed and is apt for both city drive and long trips since it projects a strong and sturdy image.

Another group of people who get be associated with the Vespa S are romantic people. This is because of the romantic saddle shaped seat of the scooterette which will ensure that the partner holds onto the rider during the romantic ride since there would be no back handle. Holding onto your partner for dear life would make the ride all the more romantic, respondents said.

A family person will also use the Vespa Sporty for a pillion ride with family members/relatives. This is because for them Vespa brand has been one which is known for being reliable and caring, no fear of breakdown and hence a strong investment. And since a family person is concerned about the well-being of family it will go for the Vespa Sporty as it would fulfil its family's needs and requirements.

Respondents feel I-phone matches the profile of Vespa Sporty Scooter. This is because I-phone is a premium brand like Vespa, meant for brand conscious customers. Its striking colours, light weight, graphics, connectivity bring it to close association with Vespa.

According to respondents Volkswagen Beetle matches the profile of Vespa Sporty, because both are available in vibrant and lively colours, designed especially for the youth. Both have retro styling, are head turners and have chrome finish giving them a sporty look.

Rational Value Associated with Vespa S

Majority of respondents think that the price of Vespa Sporty will be definitely higher than most of the other ungeared scooters available in the market. This shows that the respondents are mentally prepared that Vespa S wouldn't come at a cheap price. They here relate high price with the brand name and unique features that the scooterette is going to provide. Since the Vespa Sporty is having some added features like disc brakes, alloy wheels, unique console, colours, graphics, etc. The respondents are brand conscious, comparing the price with brand name. They are not irrational in their thinking and know they have to have deep pockets for the new Vespa S.

Awareness Level

The awareness level regarding Vespa as a brand is particularly high. There are respondents who say they have seen/ heard/ read about the scooter in various advertisements. This shows that word of mouth spreads fast and rigorous advertising and marketing that has been done by Vespa is turning out to be fruitful. The others say that their friend/ relative own the scooter. This shows that Vespa has already made its position in the market. And these might be the people who have come to see the new Vespa S after a positive feedback about Vespa Regular. The rest say that they have considered Vespa (in this case Vespa Regular) and were still in the decision phase whether to buy it or not after having a look at the new Vespa Sporty. This shows that customer's nowadays do all their homework about a product before making their purchase consideration. It also shows Vespa had already positioned itself not only in the market but also customers mind and lastly the customer is ready to even pay a higher price for new Vespa S.

Level of Association with Vespa R and Vespa S

Almost all respondents associate more with Vespa S in comparison to Vespa R. They say between the two Vespa Sporty is for youthful people because of its "small body" and sporty look. The updated version of Vespa i.e. Vespa Sporty, has unique consoling, innovative foot rest designs, alloy wheels, vintage headlight which resembles class, customization and new colors which is much more innovative than Vespa Regular. Vespa Sporty is a much more premium scooter. According to them, Vespa sporty is for upmarket person, a person who holds a respectable position in the society, who believes in high quality and who is very status conscious.

Customer Segmentation for Vespa S

The research agency with the help of Cluster Analysis has arrived at 4 clusters of customers for the Vespa S. These are:

- **Cluster I - Person with high aspiration yet looking for balance in personal and professional life**

Seeking Balance between Work and Family

Such a person lives a routine life of going for work on weekdays and spends weekends with family at home or going on some outing. In between they like to spare sometime for friends/colleagues for rejuvenation.

High Aspiration and Recognition

They aspire for bigger and luxurious worldly items and pleasures. Seek recognition and acknowledgement in society as well as from family. Acknowledgement from others motivates them to work harder. For them financial security and sense of achievement is a must.

Concerned for Family and Children

They thrive for financial and social security for family. Works harder to provide a luxurious life to family. Though money is important family happiness and wellbeing are the top priority.

- **Cluster II - Lifestyle and Materialism Defines Success**

Weekdays Vs Weekend

Weekdays are professional days Spend most of the time working. Weekends are family days Tries to spend whole time with family. Goes out with family on every weekend.

Materialism is a Definer for Success

Believes can buy most of the pleasure and happiness e.g. big house, big vehicle. Money is considered as a step to success & recognition.

- **Cluster III - Passionate and Seek Challenge in Life**

High on Zeal

These people are passionate towards work and life. They strive for success and excellence. Their motto is to attain success and win in every aspect of life. They have a strong attitude and do not like to give up easily.

Seek Challenges in Life

They are hardworking people. Ready to work 7 days a week. Always open to engage in multiple profitable avenues or business for various flow of income.

Involved in Recreational Activities and Exploration

Prefer outdoor activities like outdoor games and morning walk. They always take out time for these despite their busy schedules. They like travelling on weekends and hunt unexplored places.

Self-Indulgence

They look for a getaway from daily work pressure to rejuvenate themselves. They are always enthusiastic about taking out spare time for themselves.

- **Cluster IV - True Romantic**

Such a person believes love and relationships are an essential part of life. They are easy going and fun loving by nature. They love going out on weekend trips and long drives. Thrill and excitement is the way to live life.

Clusters



Cluster	1	2	3	4
Label				
Description				
Size	32.0% (16)	8.0% (4)	28.0% (14)	32.0% (16)
Inputs	drive to workplace 5.00 early 3.25 Picnic ride with family 5.00 Type of customer intender (50.0%) drive to college 5.00 movies 4.00 picnics/ excursions with friends, to nearby places 4.75 going out with my girlfriend/ boyfriend 5.00 meeting friends 5.00	drive to workplace 4.00 party 3.25 Picnic ride with family 4.50 Type of customer intender (75.0%) drive to college 4.50 movies 4.75 picnics/ excursions with friends, to nearby places 4.50 going out with my girlfriend/ boyfriend 4.75 meeting friends 4.00	drive to workplace 4.00 party 3.38 Picnic ride with family 4.07 Type of customer Owner (100.0%) drive to college 5.00 movies 4.88 picnics/ excursions with friends, to nearby places 5.00 going out with my girlfriend/ boyfriend 5.00 meeting friends 5.00	drive to workplace 4.51 party 3.44 Picnic ride with family 4.19 Type of customer intender (100.0%) drive to college 5.00 movies 5.00 picnics/ excursions with friends, to nearby places 5.00 going out with my girlfriend/ boyfriend 5.00 meeting friends 5.00
Evaluation Fields	Unique 0 (100.0%) Relevance 1 (75.0%) purchase consideration 0 (100.0%)	Unique 0 (50.0%) Relevance 0 (100.0%) purchase consideration 0 (50.0%)	Unique 0 (95.7%) Relevance 0 (78.6%) purchase consideration 1 (94.3%)	Unique 0 (97.5%) Relevance 0 (75.0%) purchase consideration 1 (75.0%)

Scenario to Drive Vespa S

Clusters

Import (Practicality) Importance
 ■ 1 ■ 2 ■ 3 ■ 4 ■ 5 ■ 6 ■ 7 ■ 8 ■ 9 ■ 10

Cluster	I	II	III	IV
Label				
Description				
Size	43.0% (27)	22.0% (14)	26.0% (16)	9.0% (6)
Segment	young professionals (2.00) middle for time (2.00) Type of customer behavior (100.0%) first time customer (5.00) Males (2.71) Chinese (5.00) Living standard (5.00) Frequent (4.00) social domain (4.71) Overall health (5.00) Flight mode whether "G1 (75.0%) or "G2 (25.0%)	young professionals (2.00) middle for time (4.00) Type of customer behavior (100.0%) first time customer (5.00) Males (4.00) Chinese (4.04) Living standard (5.00) Frequent (4.57) social domain (5.00) Overall health (5.00) Flight mode whether "G1 (75.0%) or "G2 (25.0%)	young professionals (2.00) middle for time (4.00) Type of customer behavior (100.0%) first time customer (5.00) Males (4.07) Chinese (5.00) Living standard (5.00) Frequent (4.71) social domain (5.00) Overall health (5.00) Flight mode whether "G1 (75.0%) or "G2 (25.0%)	young professionals (2.00) middle for time (4.00) Type of customer behavior (100.0%) first time customer (5.00) Males (4.00) Chinese (5.00) Living standard (4.75) Frequent (4.00) social domain (5.00) Overall health (5.00) Flight mode whether "G1 (75.0%) or "G2 (25.0%)
Evaluation Results	Utility (1.000.0%) Performance (1.000.0%) purchase consideration	Utility (1.004.0%) Performance (1.000.0%) purchase consideration	Utility (1.003.0%) Performance (1.004.0%) purchase consideration	Utility (1.000.0%) Performance (1.000.0%) purchase consideration

Appearance of Vespa S

Conclusion

After conducting the analysis of the data pertaining to the questionnaire, the conclusion that can be drawn is that Vespa Sporty is the preferred brand of scooterette over others. The reason for high purchase consideration was that every respondent attached one or more value with Vespa S. There was social-emotional value; these seemed closely intertwined with each other. Another value was functional-Quality

value; this was indicated by the price and brand. The next being functional- Price value in terms of Value for money. Even the study conducted helps us arrive at four clusters of respondents on basis of similarity in buying habits, characteristics and psychographics

Limitations

- The sample taken for the study was small and not very representative to draw very

relevant conclusion that might hold good in the larger scheme of things.

- There was time constraint. We were given three days to conduct the entire research.
- There were certain respondents who got confused with rating scale, hence they had to be reminded again and again about it, leading to loss of time.
- The questionnaire was quite lengthy and respondents found it cumbersome after a point of time.
- The views of the people could be biased as they already knew that the research was being conducted for Vespa S.

Questions

Q1. Can Vespa's 'premium' tag recreate its past glory?

Q2. Could the Scooter market be segmented on geographical base planned by Vespa's? What other factors do you think play a vital role in customer segmentation?

Q3. What improvements according to you should Vespa make in its scooterette that is in sync with its core value and also project the road ahead of Vespa's?

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Book Review

Economic Freedom of the States of India 2013

Book by Bibek Debroy, Laveesh Bhandari, and Swaminathan S. Anklesaria Aiyar, Academic Foundation, 2014, PP. 95, Rs. 995.00, ISBN 9789332701359

Reviewed by **Megha Agarwal***

The book is a compilation of essays on the impact of economic freedom as felt by different states of the country by three famous Indian economists. It is a part of the series of reports published since 2005. The authors B. Debroy, L. Bhandari and S. Aiyar are eminent personalities in the field of economics. The Cato institute (American think tank located in Washington DC), Friedrich-Naumann-Stiftung fur die Freiheit (Germany) and the Academic Foundation (New Delhi) have jointly published the report seeking to measure economic freedom for twenty different Indian states. The authors try to revisit the relationship between economic freedom on one hand and prosperity, growth and human well being on the other.

India, being a vast and diverse country geographically, has not felt the benefits arising from economic freedom uniformly throughout its length and breadth. The differences in economic freedom seem quite evident when we compare the state of metropolitan cities in the country with the rest of the country. The market reforms have increased the economic freedom

which has also been accompanied by improving indicators of human development, yet the country's ratings are poor and show a downward trend during recent years. At this juncture, with a change in the central government and advent of new ideologies, this book would guide the policy makers for formulation of national policies. The importance of state level reforms for achieving inclusive growth has been stressed upon by the authors.

The authors create an Economic Freedom Index (EFI) along the lines of the methodology adopted by Fraser Institute's Economic Freedom of the World (EFW). The methodology as adapted has been explained in detail in the attached Appendix. Even a layman or a person with little knowledge of economics will not face any difficulty in comprehending the methodology. Latest data until 2012, available from reliable official sources, has been used to produce the index. To capture the performance of sub national institutions, three variables namely size of the government, legal structures and security of property rights, and regulation of

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business and labour have been analysed for the twenty states for which data was available. The states are then ranked according to the index. Further, a comparison of ranks of the states in 2012 vis-a-vis 2005 is undertaken to stress upon the changing situation over the years. A correlation between economic freedom and well being of citizens has been formulated. Clear conclusions follow from the analysis. The authors also suggest policy recommendations.

A separate chapter by Swaminathan Aiyar elaborates upon the situation of Bihar, the state with lowest level of economic freedom. Bihar has witnessed a remarkable improvement in its social and economic performance over the years from 2005. Although the rank remains unchanged at twenty, the improvement level is better than the national average, perhaps due to decrease in the level of violent crimes in the region. A balanced and objective view of the contributions of Nitish Kumar's government in helping Bihar achieve this has been stated. An extensive coverage of the state of schools, classrooms, teacher; Maoist threat; e-governance; police, judicial and administrative reforms has been undertaken. Emphasis has been laid on construction boom, electricity crisis, crime and punishment and road building. On the other hand, presence of tainted ministers in Kumar's government has also been mentioned.

Another chapter by Bibek Debroy focuses on the role of centralisation in constraining economic freedom of the states. The excessive centralisation adopted in the country has been adequately explained in relation to the distribution of planned and non planned funds. It also mentions about the step motherly treatment given to Bihar. Simple language has been used to explain the complex ratios calculated. A case for equitable access to services has been built by the author. In light of the present endangered status of the Planning Commission, the book brings about an imperative topic for research and debate for the policy makers and the academicians.

A path to miracle economic growth has been shown by the authors by stressing upon the importance of governance, judicial and administrative reforms and adoption of a more decentralised approach for appropriation of funds. The variables and methodology adopted to compute the economic freedom index has been explained extensively. Data has been extracted from the most trusted sources. A chapter on the impact of the report and its policy implications may be added in the future series. Perhaps with a drastic ideological change at the governmental level, this monograph would pave a way for better national economic policies. One may recommend the book to the policy makers, academicians and research scholars with an expectation of high quality research in the area and better policies so as to achieve horizontal equity between the states.

Book Review

Buy-Ology: How Everything We Believe About Why We Buy is Wrong

Book by Martin Lindstrom, Doubleday Publishing Group, Division of Random House, 2009, Pages 256, ISBN: 978-1847940131

Reviewed by Chandan Chavadi*

This book is one of the interesting reads that I have come across in the area of consumer buying behavior. It is a secret revealer and an eye opener for consumers and marketers. Martin Lindstrom, the author, takes us behind the scenes of the marketing euphoria to take a look at what sells and why it sells. He presents impressive findings from his avant-garde research project study spanned over 3 years, spending around 7 million dollars, funded by 8 multinational companies. He and his team have used neuromarketing techniques to understand the brain activity happening in the consumers' minds when they are exposed to advertisement commercials, when they think about brands, and how the brain works when we buy stuff, and much more. He has used more than 1000 global volunteers, whose brains were read by two hi-tech pieces of equipments, 10 professors and doctors, 200 researchers, and an ethical committee for the study. Many of the results were startling and impeached the efficacy of established consumer research.

Each of the 11 chapters of the book has numerous thought provoking examples and uses

fMRI technique- sophisticated brain scanner and SST technique - advanced electroencephalogram (EEG), which tracks rapid brainwaves in real time to reflect the precise motivations of buyers. Though several groups have objected to and petitioned the use of neuromarketing for commercial gain, the author makes an attempt to understand the subconscious thoughts, excitability and desires that spur the purchase decisions.

In the introductory chapter, the author discusses how neuromarketing is used in the study to get to the bottom – or the brain – of a mystery that has defied health professionals, cigarette companies, smokers and non smokers, governments for decades. Neuromarketing analysis revealed that health warnings on cigarette boxes barely have any effect on smokers; they, on the contrary, encourage smokers to smoke more as cigarette warnings stimulate smokers' brain called nucleus accumbens. Though we claim to be a rational species, we consistently engage in behavior for which we have no logical or clear-cut

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explanation. It is observed that 85% of the time our brain is on autopilot mode and our subconscious mind is a lot better at interpreting our behavior than the conscious mind. The more stressed we are, the more irrationally we behave and marketing research relying on consumers being accurate and honest in their responses spells disaster. The author wishes that he could unmask the subconscious forces that provoke interest and eventually cause us to open our wallets. In another experiment of Coke-vs-Pepsi, the emotional coke-ness of the brand overpowered the rational preference for the taste of Pepsi. It was crystal clear that a lot of what happens in the brain is emotional, not cognitive.

In the second chapter, the author confabulates about the lack of originality on the part of the advertisers and the always-on media assault, as a result of which our brains have grown thick and self protective. We can hardly differentiate any TV commercials as noncreative companies are simply imitating other uncreative companies. Product placements almost never work. Only those products that play an integral part in the narrative of a program had a double barreled effect, i.e., increase the memory of the product and weaken the ability to remember other brands.

In the third chapter, Lindstrom discusses the idea of mirror neurons. The human brains tend to mimic the way others interact with the objects. The author quotes examples such as why we pump our arm in air when our home team scores a goal or when we observe a ballet and we try enacting it. Several examples of these kinds prove the existence of mirror neurons in the human brain.

In the fourth chapter – the author discusses how subliminal messages act as hidden persuaders

and enhance the sale of the products. He quotes several examples of companies using psychologically manipulative methods in their advertisements.

In the next chapter the author discusses - rituals & superstition, how they help us to form emotional connections with the brands and products. The more unpredictable the world becomes, the more we adopt rituals and superstitious behavior. To gain control or at least the illusion of it, rituals or superstitious beliefs are performed in some form every day. Several examples have been quoted on rituals and superstitions, but one of the examples which I liked the most was the “Magners on Ice”.

In the next chapter, the author discusses faith, religion & brands: How companies are making money from holy soil, sacred dirt & holy water. Sense of belonging, clear vision and power over enemies, sensory appeal, storytelling, grandeur, evangelism, symbols, mystery and rituals, all of which are integral parts of various religions, have profound effect on our behavior. The author has distinctly linked these aspects of religion with our most beloved brands and products.

In the seventh chapter, the author discusses the power of somatic markers. Most customers take two seconds to make their choice of products in the supermarket. The real rationale behind such decisions is the instant shortcuts that our brains have created which the author terms as somatic markers or unconscious markers. An inspiring ingenious somatic marker that I came across in the book was the stand-alone plastic urinal, seven feet above in the conventional line of urinals and stalls. Next to it were the words Spiderman 3..... coming soon!

In the subsequent chapter, the author discusses the power of sensory branding. Visuals in combination with sound and smell create a ripple effect. The experimental study also revealed that image-fragrance combination was more appealing than using it alone. Because of mirror neurons, signature sounds (Nokia tone), too, can evoke equally powerful visual images. Even colors are also powerful in connecting emotionally to the brands.

In the next chapter, the author uses the power of neuromarketing to predict the future. An experimental study using neuromarketing was conducted on TV viewers to know the popularity of 3 TV shows. The results indicated that what people said and how they felt were often polar opposites. Based on viewers' brain responses, one can predict which TV show will be more successful than the others.

In the last but one chapter, the author discusses sex and beauty campaigns in advertisements and says they don't necessarily sell products. Because of overexposure to images of sex, the author predicts that we will become desensitized to sex in advertising and such ads may turn ineffective.

In the final chapter, the author concludes by saying that roughly 90% of consumer buying behavior is unconscious and we have almost no control over it or are unaware of it. The brain scan study of neuromarketing has helped science and marketing to come together. The real driving factors of human behavior are better understood by this study. Though neuromarketing is in its infancy, i.e., not able to tell us exactly where the 'buy button' resides in the brain, it will help predict, direct or alter the course of actions and change the fate of companies across the world.

After reading this book, I sometimes wonder whether we are the guinea pigs of a larger marketing experiment or we can really choose to lead a simpler life by not getting led by several ads and buying only what we need. Well, it's not easy, for marketers and advertisers with their tricks & traps try to control and seduce the subconscious mind in their favor. Buyology is a fascinating book as it shows, through state-of-the-art research, why we don't always buy things for the reasons we think we do.

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