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From the Editor's Desk ...

Dear Reader,

Greetings to you from the Editorial team!

We are happy to inform you that our PJMTR is listed in the UGC Approved Journal list.

With the support of our readers and contributors, we are happy to publish the 14th issue of PJMTR. At this moment, I would like to thank our former Chief Editor Dr. M.J. Arul for his unstinted support, guidance and stewardship over the journal.

From time to time as warranted by new developments, the journal publishes research papers, articles, book reviews and case studies on a wide range of topics related to the field of management.

The current issue will bring to you a mixed bag of five research papers and two case studies. I am pretty sure, our readers will find this issue constructive and thought-provoking.

A whole lot of research has gone into explaining navigation in shopping malls through shopper characteristics (paper 1) and an analysis of long-run operating performance following share repurchases (paper 2). The next paper delves deeply to examine whether R&D Activities of pharmaceutical companies impact financial performances of the MNC companies (paper 3). Anytime, if you are stuck up with a comparison to of new or old initiatives offered by financial inclusion, you can look up into this research paper (paper 4). The next paper gives you a new taste of investors in Mutual Funds (paper 5). Finally, the Corus Acquisition and Hero Moto Corp (Case study) shall complete your dose of reading.

We would like to thank all the reviewers and editors who have contributed their time and all the members of PJMTR Editorial Team who have made the publication of this journal possible.

We look forward to work together to publish meaningful management research in PJMTR.

Dr. R. Venkataraman

Chief Editor

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Explaining Navigation in Shopping Malls through Shopper Characteristics: A Support System for Tenanting Decision Making

Sumanta Deb* & Keya Mitra**

Abstract

The purpose of the paper is to establish the relationship between shopper characteristics and navigation within shopping malls. Navigation of customers within a shopping mall has been identified in retail management literatures as a significant factor for achieving economic sustenance relying on the concept of urban spatial structure and explained through bid-rent analysis. Navigational behaviour, like other spatial behaviours, is considered as a function of personal and environmental factors. Studies in the field of Architecture and environmental psychology suggest higher visibility result in higher accessibility of a particular space in a built environment. Visibility, therefore, has been selected as the environmental factor responsible for navigation in shopping malls. Shopper characteristics has been studied as personal factors which consist of achievement orientation and shopping activities and responses on those constructs are taken through a structured questionnaire employing mall intercept method of surveying. The influence of shopper characteristics on attitude and intention (behavioural factors) to navigate through most visible path has been established with structural equation modelling. The intention is validated with actual preferences of respondents in computer generated situations of mall junctions.

1. Introduction

Navigation or way finding within a built environment has been attracting research attention for several decades. Lynch (1960), for example, suggested that the legibility of an environment influences a person's familiarity in the process of finding one's way. Architecture, as a spatial configuration contains information that influences navigation. Environmental information can be broken down into architectural and graphic expression needed to solve navigational problems (Passini, et al., 1998) in built environments.

The relationship between the environment (both, natural and man-made) and behaviour has been recognized for a long time in the field of architecture and urban design. In order to emphasize the significance, psychologist Kurt Lewin (1951) argued that, behaviours (B) are not only a function of personal factors (P) but also of the environment (E) where it takes place. Lewin (1951) expressed the relationship in a functional form as: $B=f(P, E)$. Way-finding and navigation behaviours can be influenced by factors from both the environment and human individual differences (e.g. Montello, 2007, O' Neil, 1991; Peponis et al., 1990).

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Navigation is significant for different categories of building, but in case of shopping malls it is the determining factor for achieving economic sustenance. The identification of an 'ultimate tenant mix' had always been the objective of researchers working on shopping malls and approached mostly through inter-store externalities since the inception of the format. The configurational theories on shopping malls (e.g. Vandell & Lane, 1989; Brown, 1999, Carter & Vandell, 2005) were evolved from and relied on the theories of urban spatial structure for describing the relationship between customer movement and profitability of a tenant store through bid-rent analysis. Understanding behavioural factors behind navigational preference for a particular stimulus (visibility, in this case) in a shopping mall, therefore, is an interesting area of study and a significant tool for the mall management.

2. Need for the Study

Visibility influence movement in a built environment and shopper characteristics (personal factors) influence behavioural intentions (movement influenced by visibility in this case). The relationship between shopper characteristics and visibility of a particular location will therefore be significant for explaining and predicting movement in a shopping mall. The study is of strategic significance as the analysis and findings help to explain movement and influencing movement is almost all of what mall management aspire towards.

3. Background of the Research

The success of a shopping mall is dependent on the mall configuration (i.e., location and area allocation along with facilities for different

stores) for attracting and distributing customers throughout the mall and to draw them into the stores and potentially engage in shopping behaviours (e.g. Hunter, 2006; Brito, 2009; Chebat, et al., 2010).

Studies on mall configuration focused on circulation or movement of customers within shopping centres for describing tenant mix (e.g. Brown, 1991; Sim & Way, 1989). The outcomes of these studies suggest that the profit function of a store can be expressed as a function of customer foot fall near it, when other things remain constant. Navigation is therefore a significant success factor in shopping malls. As our intention is to identify the influence of shopper characteristics on navigation behaviour, the environmental, shopper characteristics (personal) and behavioural factors for navigation (in shopping mall) are discussed below in detail for better understanding of the context:

3.1 Environmental Factor: Relationship between Navigation and Visibility

A rich body of literatures from architecture and environmental psychology indicate a significant role of visual fields in experiencing built structures and shaping patterns of use (e.g. Benedikt, 1979; Frankl, 1973). Frankl (1973) mentioned that our visual perception of any built structure affect our cognitive interactions with that environment and not only the aesthetic appreciation of architecture as the common wisdom suggests. Different literatures advocate different kinds of cognitive process and behaviour influenced by visibility in a built environment: visitor's movement (e.g. Peponis et al., 2004; Psarra, 2009); movement between workstations and interactions between employees (e.g. Markhede & Koch, 2007;

Peponis et al., 2007), way finding behaviour (e.g. Churchill et al., 2008; Lam et al., 2003). Batty, et al.(1998), Turner and Penn (1999), Turner, et al.(2001) and Desyllas & Duxbury (2001) studied movement and the research results suggested that, a space with higher visibility enjoys more accessibility. Ordway et al. (1988) found that, poorly visible strips in a shopping mall have higher vacancy level, while Simons (1992) found that accessibility and visibility accounted for about 5% of the first year's sales. Visibility has been identified as the environmental factor responsible for navigational preference in this research.

3.2 Shopper Characteristics

3.2.1 Achievement Shopping Orientation

Shopping centre literatures have focused on consumer perception and motivations rather than objective reality to describe shopping behaviour. Shopping Orientations (motives) express consumer's need and want and they vary from consumer to consumer (e.g. Luomala, 2003) and they represent “enduring characteristics of individuals” (Westbrook & Black, 1985: p. 87). Dawson et al. (1990) showed that shopping orientation play a significant role in store choice and preference of individuals. The different goals for shopping can be narrowed down to shopping orientations: task or achievement orientation and experiential (Babin et al., 1994; Büttner et al., 2014; Kaltcheva & Weitz, 2006). Under achievement orientation, consumers see shopping as an enjoyable task. Shopping orientation indicates how an individual reacts to an environmental stimulus (Büttner et al., 2014).

In a shopping mall, in spite of the presence of a shopping list, 40-60% of the purchases are unplanned. This is because of in-store marketing stimuli and impulse buying (e.g. Stille et al.,

2010, Zhou & Wong, 2004). Impulse buying is defined as the purchase decision made in-store with no explicit recognition or the need for that purchase (e.g. Bellet al., 2011, Hui et al., 2013). Achievement shopping orientation thus can be considered as a significant construct in determining attitude towards navigational preference in a shopping mall (e.g. Patel & Sharma, 2009).

3.2.2 Shopping Activities

Bloch et al. (1994) identified six distinct patterns of mall habitat to signify spaces where shoppers visit and hang around for various hedonic and utilitarian motives. Satisfaction of a shopper need not necessarily derive from mere acquisition of products. The physical space of shopping, thus play a significant role in overall shopping experience of the shoppers. Shopping achievements and activities, or habitats are related constructs. The shopping activities are manifestations of shopping values. The activities as identified by Bloch et al. (1994) are as follows:

- Mall enthusiasts (high level of purchase, enjoyment of mall aesthetics)
- Escape (relief from boredom and routine life)
- Exploration (desire for variety of novelty and enjoyment of exploring new products)
- Flow (losing track of time)
- Knowledge or Epistemic (obtaining information about new stores and new products)
- Social affiliation (enjoyment of communicating and socializing with others)

These variables describe another aspect of shopper's character apart from achievement orientation.

3.3 Behavioural Factors

3.3.1 Attitude

Keller (1993) identified three different types of associations in respect to brand associations. Attitude (or the summary of evaluations and judgement) represents the most abstract and highest-level association. Attitude refers to a general evaluative reaction and it is stable and enduring. As attitudes are personal judgment, they depend on personal orientations (Achievement shopping orientation and Shopping Activities in this case) (e.g. Hanna & Wozniak, 2001). There are three reasons to believe that, attitude of an individual to a stimulus are influenced by shopping orientations and activities (e.g. Morschett et al. 2006):

- Attitudes are formed based on perceptions. Shopping orientation has potential influence on perceptions (e.g. Luomala, 2003)
- Attitudes are higher-order associations. So, individual evaluation process is more subjective and influence by personal characteristics. Dawson et al., (1990) established a relationship between shopping orientations and emotions.
- There are evidences from several retail literatures that shoppers place varying degree of emphasis on certain store attributes

So consumers can build subjective judgments regarding attitude towards highly visible paths in exploring a shopping mall. Kiriakidis (2015) referred Liska (1984) to mention that intentions are, in turn, determined by attitude towards that behaviour.

4 Research Objective and Hypothesis

The basic objective of the study is to understand the effect of visibility in predicting customer movement within a shopping mall for different shopper characteristics. Constructs for shopper characteristics and behavioural factors have been identified from the previous discussion of literatures. The research hypotheses are framed to check the relationship between constructs relying on the logic explained in previous research findings. It can therefore be posited:

H₁: Shopping Activity influence consumer attitude towards following most visible paths in exploring a shopping mall

H₂: Consumer's achievement shopping orientation influence their attitude towards following most visible paths in exploring a shopping mall

H₃: Attitude towards following most visible area in exploring a shopping mall influence the intention of consumers

4.1 Conceptual Model for Navigational Behaviour

Based on the research hypotheses discussed above, shopping activity and achievement orientation influences attitude towards following the most visible path in exploring a shopping mall, which in turn influences the intention. The conceptual model for navigational intention towards most visible paths can be developed as shown in the following Figure 1.

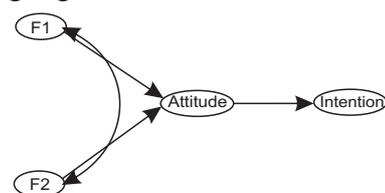


Figure 1: Conceptual model for navigational intention in a shopping mall (based on visibility) [F1: Shopping Activities, F2: Achievement orientation]

The survey instrument administered to the respondents contains questions based on the personal and behavioural constructs discussed in the background of the study. The description of the questions (research variables) and the relevant references are shown in Table 1.

5. Methodology

The navigation behaviour in a shopping mall is rather difficult to measure in real situations/ actual settings as most of the movement decisions are guided by prior experiences. In any survey, it is difficult to segregate the movement influenced by spatial factors or movement influenced by prior experience. A proper methodology has to be selected to measure the navigation behaviour at shopping mall junctions. Authors like Franz & Weiner (2008); Weiner et al.,(2007) as well as Dalton (2003) have shown that abstracted computer generated stimuli-approximating real spaces- can be used, instead, as a viable tools for capturing behavioural tendencies.

It is hypothesized previously that, shopping orientation and shopping activities influence attitude towards spatial stimuli (visibility in this case) which in turn influence the intention to act towards that stimulus. Questions were asked to shoppers to measure the above factors and a Structural Equation Modelling (SEM) was used to test the hypothesized model. A survey was conducted to measure navigational preferences using representative computer generated pictures (Figure 2) of junctions in shopping malls with multiple directional choices. The pictures were shown to the respondents and their preferences for moving in a particular direction were recorded. It was conveyed to the respondents prior to the survey that, unless otherwise shown, there were shops of similar types with no perceivable 'brand' differences in

all the directions available to them.



Figure 2: Scenes of the Simulated Situations of Shopping Mall Junctions Shown to the Respondents for Recording Navigational Preferences

Among the two pictures shown to the respondents in the survey as in Figure 2, the picture in the left shows a foreground with a blank wall at one end. Visibility to the left beyond this wall is more than the visibility to the right, where another wall at right angle to the first narrows the gap and blocks vision. At the right, the second situation shows a doubly loaded corridor with a closed end and options for left and right turns at different distances.

At the beginning of each section of the structured questionnaire, a short description was provided to ensure the clarity of content when answering the questions. As English is most commonly spoken and written language in Urban India (e.g. Rai, 2012) the survey instrument was written and the Interviews were conducted in English.

5.1 Sample

Data were collected from 10th September, 2016 to 16th February, 2017 using mall intercept survey technique which involves face-to-face interviewing. The interviews were taken at three shopping malls in Kolkata, intercepting a sample of passing by consumers whether they would be willing to participate in a research study. The target population consisted of active mall shoppers. Those who visit a shopping mall less than four times a year are excluded from the study.

5.2 Survey Instrument

A structured questionnaire was developed and administered to the respondents. The survey instrument consisted of items adapted from established scales with few exceptions. The survey instrument consists of scales to capture all the variables in the proposed model as well as demographic information. The instrument is divided into three sections:

1. **Section 1:** this section measures personal behaviour and decision making (research variables shown in Table 1)
2. **Section 2:** this section measures behavioural intentions in computer generated situations of shopping mall junctions
3. **Section 3:** this section records demographic information

A total of 119 respondents participated in the survey. A seven-point Likert Type scale with anchors of “Strongly Disagree” (1) to “Strongly Agree” (7) was used for all items except behavioural intentions and demographics.

In order to determine the underlying dimensions in this study, Principal Component Analysis (PCA) with Varimax rotation was performed with SPSS 20.0 for all constructs in the analysis. Item loading above 0.50 was retained (e.g. George & Mallery, 2007). Reliability of the measurement scales were evaluated using Cronbach's Alpha value. A Cronbach's Alpha value of more than 0.7 is commonly acceptable (e.g. Churchill & Brown, 2006, George, 2003).

Table 1: Description of Constructs and Research Variables used in the Survey

Constructs/Items /References

Attitude:

“In your opinion, following most visible path to explore a shopping mall is” (on a scale of 1- 7, i.e., Misleading =1 and Beneficial =7, other scores fall between , a score of 4 means neutral)

- | | |
|---------------|------------|
| 1. Misleading | beneficial |
| 2. Bad | good |
| 3. Negative | positive |

Reference : Battacherjee, 2000; Pedersen, 2005

Intention:

“Please indicate your opinion regarding the following statements from strongly disagree (1) to strongly agree (7)”

1. I have the intention to follow the most visible path
2. I have the intention to move to a location which is clearly visible from my position
3. I will turn to a direction which opens up to more space compared to others

Reference : Pedersen, 2005; Wang et. al. 2006

Achievement Orientation:

“Please indicate your opinion regarding the following statements from strongly disagree (1) to strongly agree (7)”

1. I always plan my shopping trips
2. It is important for me to accomplish what I had planned for a particular shopping trip
3. I always have a list of products to buy when I go for shopping
4. I already know which products I want to buy when I go for shopping

Reference : Patel & Sharma (2009)

Shopping Habit:

“Please indicate your opinion regarding the following statements from strongly disagree (1) to strongly agree (7)”

Mall enthusiasts

1. I visit malls only to buy something
2. I love shopping
3. I like the ambience/aesthetics of shopping malls

Escape

4. I visit malls to avoid boredom
5. I visit malls to escape from the routine life

Exploration

6. I always look for new products launched when visiting a mall
7. I look for product variety in shopping mall visits

Flow

8. I like to spend time in mall when I visit one
9. I never plan my time of stay when visiting a mall

Epistemic

10. I like to obtain information about new products in a mall
11. I like to see new things

Social affiliation

- 12. In a mall, I enjoy being with others
- 13. I enjoy socialization with others.

Reference : Bloch et. al. (1994)

The proposed theoretical model based on the hypothesized model (Figure 1) is shown in the following Figure 3.

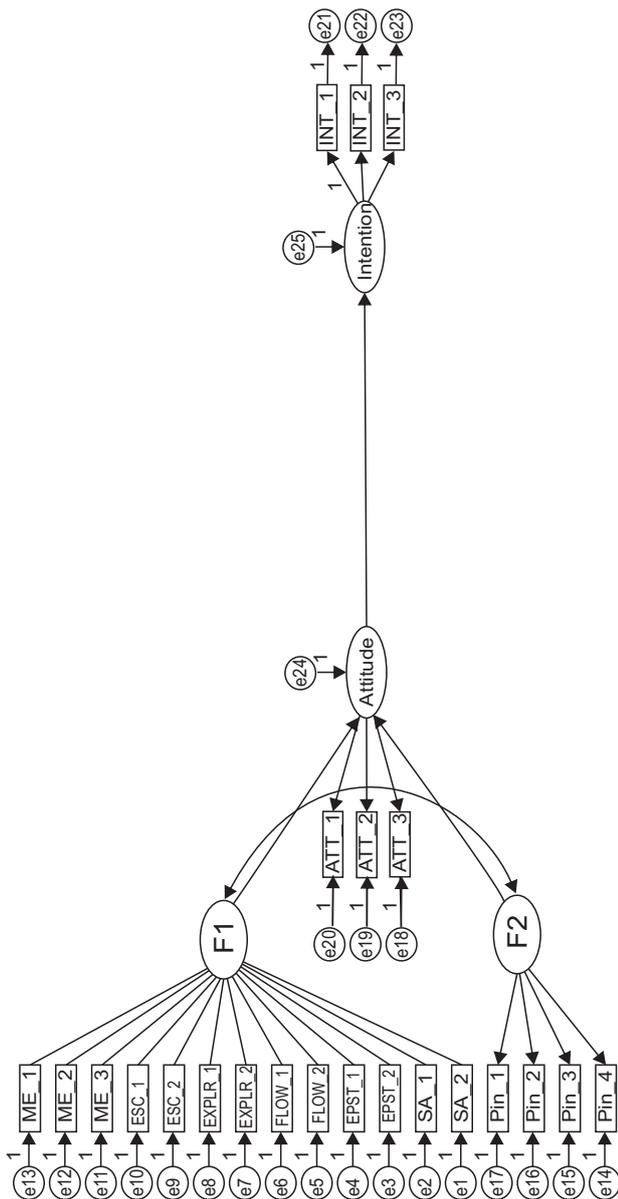


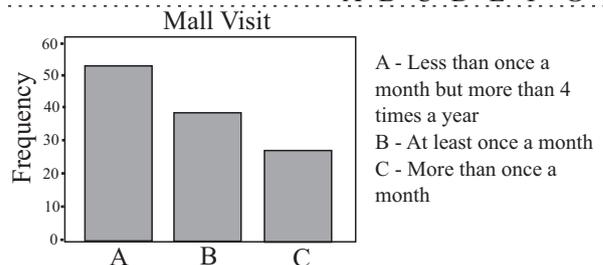
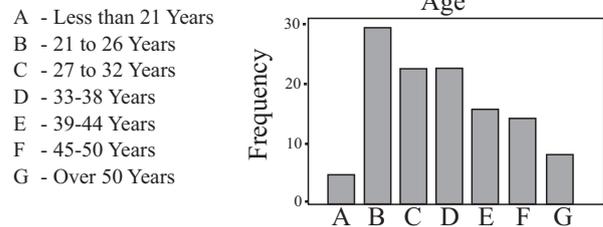
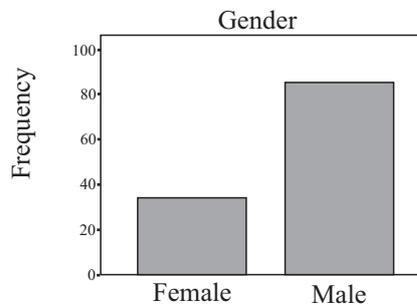
Figure 3: Theoretical Model of Navigational intention with the constructs and all research variables [F1: Shopping habitat/ activities, F2: Achievement orientation]

6 Analysis and Discussion

6.1 Demographic characteristics

The demographic characteristics of the sample are shown in Table 2. The sample consisted of 71.4 % of male and 28.6% of female respondents. Respondents were mostly between age group of 21-38 years (63.8%).

Variables		Frequency	%
Gender	Male	85	71.4
	Female	34	28.6
Age	Less than 21 years	5	4.2
	21 to 26 years	30	25.2
	27 to 32 years	23	19.3
	33 to 38 years	23	19.3
	39 to 44 years	16	13.4
	45 to 50 years	14	11.8
	over 50 years	8	6.7
Mall Visit	Less than once a month but more than 4 times a year	53	44.5
	At least once a month	39	32.8
	More than once a month	27	22.7



6.2 Factor Analysis of the Model Constructs

The test of sample adequacy has to be performed to check whether the collected data is adequate for factor analysis. For analysing the adequacy, Kaiser-Meyer-Olkin (KMO) test of sampling adequacy and Bartlett's test of Sphericity has been conducted. A minimum accepted value of 0.50 or KMO has been considered. The values of the data set are presented below. Based on the values of KMO, the sample adequacy is found to be acceptable.

Table 3: Summary of KMO and Bartlett's Test of Sphericity

Construct	KMO	Bartlett's
Achievement orientation	0.843	.000
Shopping Habitat	0.978	.000
Attitude	0.745	.000
Intention	0.743	.000

The factor structure for all the variables is shown in Table 4.

Table 4: The Factor Structure for all the Research Variables

Factor Structure		Factor Loading	Cronbach's Alpha
Achievement Orientation	I always plan my shopping trips (Pln 1)	0.896	0.916
	It is important for me to accomplish what I had planned for a particular shopping trip (Pln 2)	0.899	
	I always have a list of products to buy when I go for shopping (Pln3)	0.902	
	I already know which products I want to buy when I go for shopping (Pln 4)	0.884	
Shopping Habitat	I visit malls only to buy something (ME 1)	0.884	0.987
	I love shopping (ME2)	0.906	
	I like the ambience / aesthetics of shopping malls (ME 3)	0.931	

Factor Structure		Factor Loading	Cronbach's Alpha
Shopping Habitat	I visit malls to avoid boredom (ESC1)	0.949	0.888
	I visit malls to escape from the routine life (ESC 2)	0.952	
	I always look for new products launched when visiting a mall (EXPLR 1)	0.952	
	I look for product variety in shopping mall visits (EXPLR 2)	0.950	
	I like to spend time in mall when I visit one (FLOW1)	0.918	
	I never plan my time of stay when visiting a mall (FLOW 2)	0.904	
	I like to obtain information about new products in a mall (EPST 1)	0.913	
	I like to see new things (EPST 2)	0.952	
	In a mall, I enjoy being with others(SA1)	0.957	
	I enjoy socialization with others. (SA 2)	0.935	
Attitude	In your opinion, following most visible area to explore a shopping mall is” (on a scale of 1-7, i.e., Misleading =1 and Beneficial =7, other scores fall b/w, a score of 4 means neutral) Misleadingbeneficial (Att1)	0.898	0.928
	Bad Good (Att2)	0.917	
	(-ve) (+ve) (Att3)	0.898	
Intention	I have the intention to follow the most visible path (Int1)	0.944	0.928
	I have the intention to move to a location which is clearly visible from my position(Int2)	0.953	
	I will turn to a direction which opens up to more space compared to others (Int 3)	0.910	

6.3 Model Fit and Hypothesis Testing

The structural equation modelling (SEM) for the proposed model, as shown in the Figure 3, is tested with AMOS 18. The summary of the Model fit results are shown in the following Table 5. The goodness of fit measures are important to determine how well represents the proposed theory (e.g. Ho, 2006).

Table 5: Summary of the Model Fit Results

Model fit Index	Score
CMIN (Chi-Square/ Degrees of Freedom) χ^2/df	1.464
Normed Fit Index (NFI)	0.924
Tucker Lewis Index (TLI)	0.971
Comparative Fit Index (CFI)	0.974
Root Mean Square Error of Approximation (RMSEA)	0.063

Although there is no consensus regarding the acceptable ratio of the statistic, χ^2/df , there are references of it being as high as 5.0 (Wheaton et al., 1977) to as Low as 2.0 (Tabachnick & Fidell, 2007). There are also references which consider a value of more than 2.0 as an inadequate fit (Byrne, 1994). Bentler & Bonnet (1980) recommended the value of greater than 0.9 for Normed-fit Index suggests a good-fit. The major drawback of this index is that, it does not give proper results for sample size below 200 (Mulaik et al., 1989; Bentler, 1990). So, it is rectified into Tucker- Lewis Index. Hu & Bentler (1999) suggested a value of ≥ 0.95 as a threshold for good fit. They also suggested similar threshold value for CFI (≥ 0.95). These indices are more robust in nature than the commonly used GFI and AGFI. (e.g. Schumacker & Lomax, 2004; Garson, 2006). The range of 0.05 to 0.10 was considered to the criteria for good fit and values beyond 0.10 indicated a poor fit (e.g. Mac Callum et al., 1996). However, the recent literatures suggest a stringent upper value of 0.07(e.g. Steiger, 2007). So, based on the discussions the model fit indices are summarized as follows in Table 6:

Table 6: Summary of the Model Fit with Standards

Model Fit Index	Score	Standards	Remarks
CMIN(Chi-Square/Degrees of Freedom) χ^2/df	1.464	<2.00	Suggest good-fit
Normed Fit Index (NFI)	0.924	>0.9	Suggest good-fit
Tucker Lewis Index (TLI)	0.971	>0.95	Suggest good-fit
Comparative Fit Index(CFI)	0.974	>0.95	Suggest good-fit
Root Mean Square Error of Approximation (RMSEA)	0.063	<0.07	Suggest good-fit

Based on the above analysis, it can be said that the theoretical model for navigation behaviour suggests a good fit. Or, in other words, the shopping orientation and shopping activities influence attitude towards moving to high visible areas, which in turn influence intentions to move to those areas. The regression weights of the model are shown in Table 7 and 8 and the standardized correlation between independent variables is shown in Table 9.

Table 7: Regression Weights of the Model Shown in Figure 3

	Estimate	S.E.	C.R.	P	Label
Attitude <--- F1	.395	.083	4.732	***	
Attitude <--- F2	-.239	.089	-2.699	.007	
Intention <---Attitude F1	1.535	.1191	2.951	***	
F1 <--->F2	-2.634	.400	-6.581	***	

Table 8: Standardized Regression Weights of Variables

		Estimate
Attitude <--- F1		.642
Attitude <--- F2		-.361
Intention <--- Attitude		1.004

Table 9: Standardized Correlation between Independent Variables

		Estimate
F1	<--> F2	-.955

The final model with the standardized regression weights is shown in Figure 4. The hypothesized model satisfactorily described the sample data.

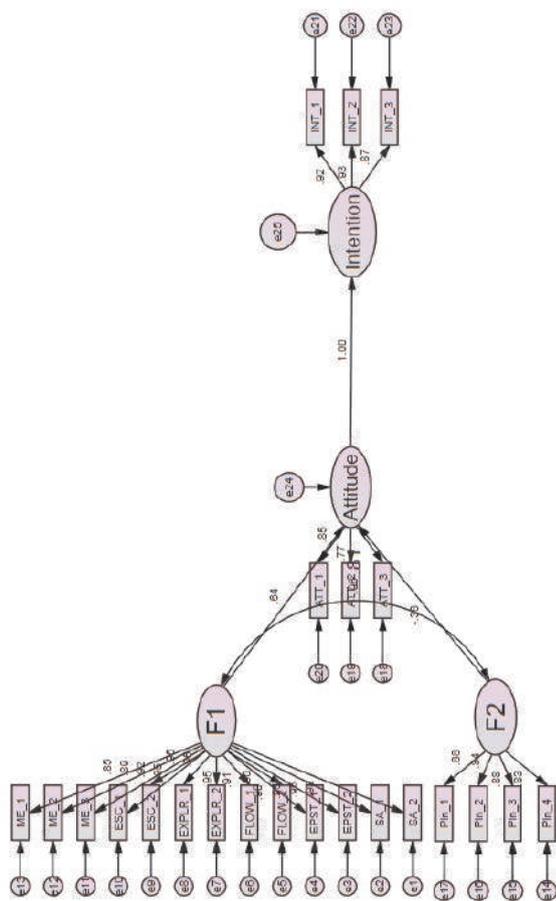


Figure 4: Final Model of Navigation with Standardized Regression Weights

H1 states that Shopping Activity influence consumer attitude towards following most visible paths in exploring a shopping mall. The regression weight between F1 and Attitude is 0.642 with a significance level of 0.000. This result suggests that shopping activity influences the attitude towards following the most visible

path in exploring a shopping mall. H1 is thus accepted. The regression based factor scores of shopping activity and attitude towards following most visible path is plotted in the following Figure 5 to show the relationship.

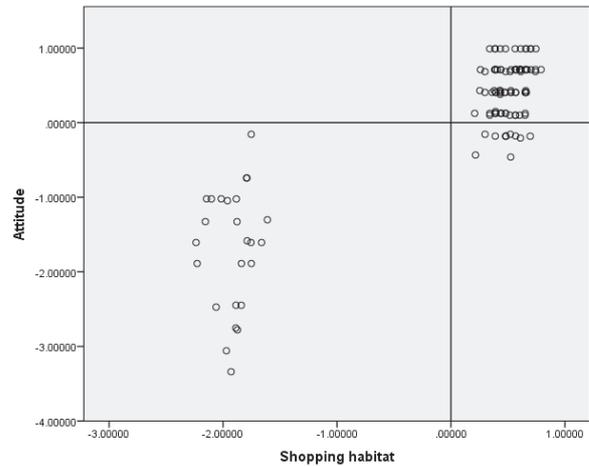


Figure 5: Scatter Plot of the Regression Weights of Attitude towards High Visible Areas and Shopping Habitat

From the above figure two distinct clusters are visible. The high shopping activity value (high hedonic) customers show greater attitude towards following the most visible areas and vice-versa.

H2 states that achievement shopping orientation influences consumer's attitude towards following the most visible path in exploring the shopping mall. The regression weight between F2 and Attitude towards following the most visible paths is -0.361 with a significance level of 0.007. This suggests that achievement shopping orientation influences attitude. The relationship is negative, which suggests when achievement shopping orientation increases, attitude towards following the most visible path decreases. The regression based factor scores of both the achievement shopping orientation and attitude towards following the most visible path in exploring a shopping mall is plotted in the following Figure 6. The scatter diagram clearly depicts the relationship between the achievement shopping orientation and attitude.

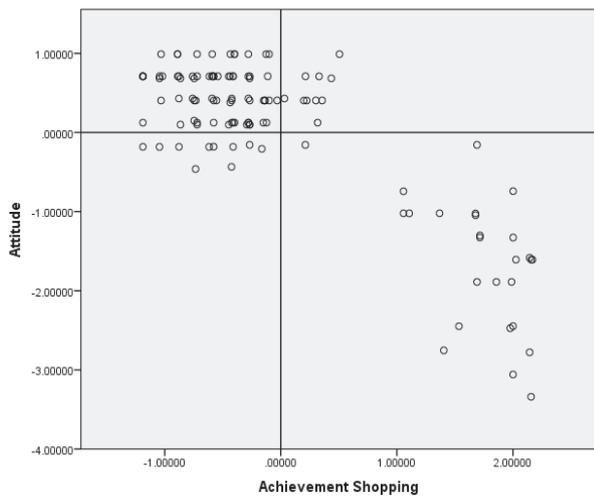


Figure 6: Scatter Plot of the Regression Weights of Attitude towards High Visible Areas and Achievement Shopping

From the figure it can be concluded that the customers who plan less for a shopping trip (low achievement shopping value) exhibit positive attitude towards visibility. The above two scatter diagrams can be combined to assess the impact of achievement shopping orientation and shopping activity on attitude.

H3 states that attitude towards following the most visible area in exploring a shopping mall influences the intention to follow the most visible area. The regression weight between attitude and intention is 1.004 with a significance level of 0.000. Jöreskog, 1999 stated that regression weight more than one is acceptable. So, Attitude influences intention.

7 Findings

The purpose of this investigation is to study the behavioural pattern behind the directional preferences. As we have already discussed the significance of visibility in shaping the navigational pattern, visibility analysis will be the proper tool for analysing the spatial configuration of the situations of mall junctions and relationship of the same with actual behaviour exhibited. The Figure 7 shows the

representative layout of the hypothetical shopping mall junction shown to the respondents. Viewpoints are marked as dots and the respective directional options are shown by arrows.

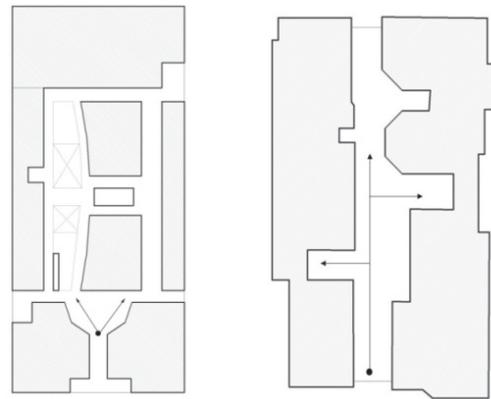


Figure : The Layouts of the Shopping Mall Junctions Shown to the Respondents. The Dot Denotes the Point of View. STN1 at the Left and STN2 is at the Right

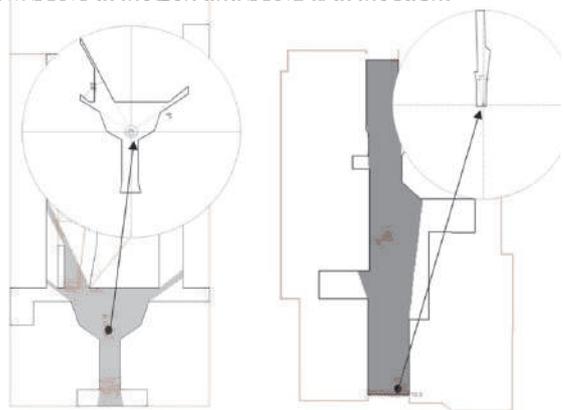


Figure 8: Isovist from the Vantage Points of the Two Situations

From the visibility analysis of the plan diagrams (Figure 8) it is clear that the Left direction in Stn 1 and Straight direction in Stn 2 enjoys more visibility.

Table 2: Actual Preferences Shown by the Respondents in Simulated Situations

Stn	Image	Responses	Significance of Difference
STN1		Left 94 Right 25	$\chi^2 = 40.008$, $df = 1, p < 0.0001$
STN2		Left 14 Right 18 Straight 87	$\chi^2 = 84.909$, $df = 2, p < 0.0001$

Note: * By Conventional Criteria this Difference is Considered to be Extremely Statistically Significant

If we plot the regression based factor scores of intention with respect to the actual preferred direction marked by the respondents for situation 1 and 2, it is clear from the figures that the majority of respondents with high intention towards following the most visible area in exploring a shopping mall prefers left direction for STN1 and Straight direction (predominantly, with a few exceptions to the left direction, which enjoys more visibility compared to the right) for STN 2. It can be concluded that, the actual behaviour and behavioural intentions have strong relationship. The respondents, who show strong intention to follow most visually connected area, actually (majority of them) behaved like that when given options for navigation.

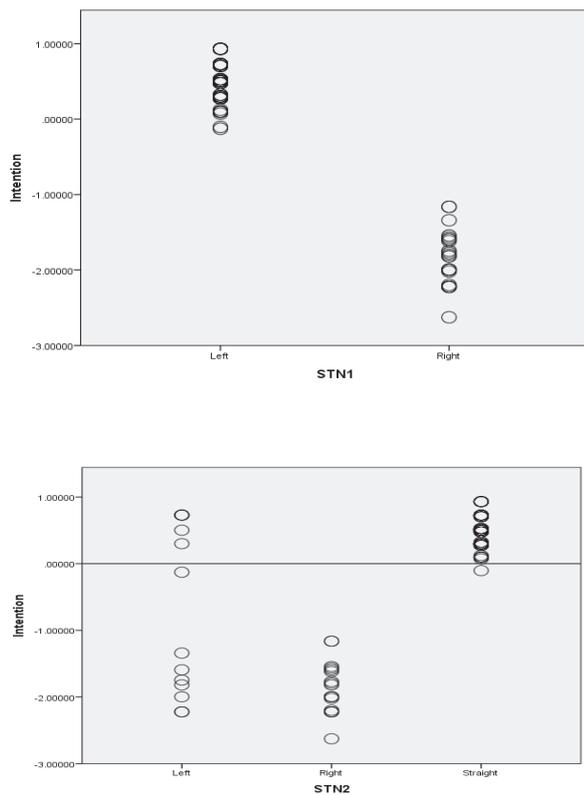


Figure 9: Scatter Plot of Behavioural Intention Scores and Actual Behaviour Results of the Two Situations

8 Conclusions

From Figures 5 and 6 it is found that, less achievement shopping orientation and high shopping activity values for a customer signifies high attitude towards following the most visible path in a shopping mall for exploration which in turn indicates high intention. To conclude the analysis, the customer, who plan less for a shopping trip and/or who enjoy being in a shopping mall for several hedonic reasons, prefer highly visible paths for exploration of the shopping mall. The relationship between attitude and two shopper characteristics is shown in the following 3D scatter plot.

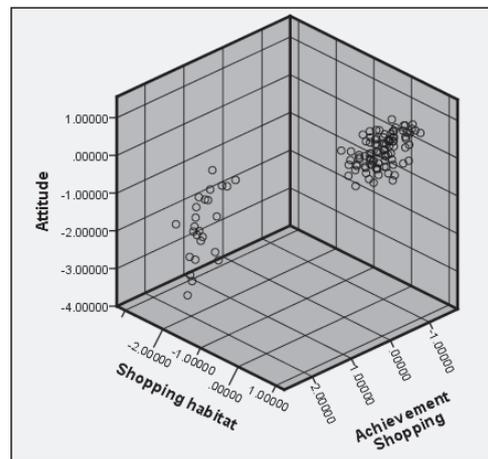


Figure 10: Scatter Plot of the Regression Weights of Attitude towards High Visible Areas, Achievement Shopping and Shopping Activities (habitat)

This findings will help mall management in allocating stores which rely on high impulse purchase (less plan or less achievement orientation from customers) and which provide high hedonic experience (explore, escape, flow, socialize etc) on most visible paths. A visibility analysis will provide the guideline for such allocation as the analysis will identify areas of high visibility. This is the conservative use of the findings. The less visible areas remain less explored. To increase the footfall in those areas two approaches can be taken. Either a strong

anchor can be included in those areas and proper signage has to be installed, or visibility of those areas can be enhanced either by opening up few areas (as the case suggests) or incorporating secondary entrances. Behavioural profiling of shoppers and relating them with navigational behaviour in a shopping mall can be used as a support system for tenanting decision making.

9 Managerial Implications

Tenanting decision making, as already discussed, is significant for economic sustenance of a shopping mall. In reality, the tenanting decision making is mostly done on the basis of rule of thumb. Customer movement has been identified as a significant factor for profitability of a store, but shopper characteristics has not been exploited to understand movement pattern in a shopping mall. Visibility analysis and categorisation of customers based on shopper characteristics combined together provides a logical background for locating different tenant stores at different locations in a shopping mall. Tenanting decision making can scientifically be done relying on visibility analysis of the shopping mall.

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Questionnaire

Introduction

The purpose of this study is to understand the behavioural pattern of individual customers in a shopping mall. Your participation in this study is completely voluntary and you may refuse to participate. If you agree, your involvement will not be more than 20 minutes and you will not incur any kind of cost. Your identity will be kept confidential and will not be made publicly available. The purpose of this study is purely academic and it is not intended for promotion of any product or a particular shopping mall.

Section 1

This part of the survey tries to identify how do you define yourself, your personal behaviour and decision making. Please answer the following questions based on how you actually feel about yourself and your behaviour. A 7 (seven) point scale is used for measuring your responses, where it varies from 1= "Strongly Disagree" to 7 = "Strongly Agree", a score of 4 (four) is thus a neutral answer, neither disagree, not agree. Other opposite meaning word pairs also varies from 1 to 7; e.g. from "bad" to "good", 1 means extremely bad and 7 means extremely good. Intermediate points represent their relative inclination towards badness or goodness and a score of 4 represent neutrality of opinion. There is no right or wrong answer and also there is no good or bad response. Every response that reflects the true self of the respondent is valuable for the research.

(Rating Scale: 1 Strongly disagree 7 Strongly agree)

- 1 I always plan my shopping trips
1 2 3 4 5 6 7
- 2 It is important for me to accomplish what I had planned for a particular shopping trip
1 2 3 4 5 6 7
- 3 I always have a list of products to buy when I go for shopping
1 2 3 4 5 6 7
- 4 I already know which products I want to buy when I go for shopping
1 2 3 4 5 6 7
- 5 I visit malls only to buy something
1 2 3 4 5 6 7
- 6 I love shopping
1 2 3 4 5 6 7
- 7 I like the ambience /aesthetics of shopping malls
1 2 3 4 5 6 7
- 8 I visit malls to avoid boredom
1 2 3 4 5 6 7
- 9 I visit malls to escape from the routine life
1 2 3 4 5 6 7
- 10 I always look for new products launched when visiting a mall
1 2 3 4 5 6 7
- 11 I look for product variety in shopping mall visits
1 2 3 4 5 6 7
- 12 I like to spend time in mall when I visit one
1 2 3 4 5 6 7
- 13 I never plan my time of stay when visiting a mall
1 2 3 4 5 6 7
- 14 I like to obtain information about new products in a mall
1 2 3 4 5 6 7
- 15 I like to see new things
1 2 3 4 5 6 7
- 16 In a mall, I enjoy being with others
1 2 3 4 5 6 7
- 17 I enjoy socialization with others.
1 2 3 4 5 6 7
- 18 In your opinion, following most visible area to explore a shopping mall is
1 2 3 4 5 6 7
(1 Misleading, 7 Beneficial)
- 19 In your opinion, following most visible area to explore a shopping mall is
1 2 3 4 5 6 7
(1 Bad, 2 Good)
- 20 In your opinion, following most visible area to explore a shopping mall is
1 2 3 4 5 6 7
(1 Negative, 2 Positive)
- 21 I have the intention to follow the most visible path
1 2 3 4 5 6 7
- 22 I have the intention to follow the most visible path
1 2 3 4 5 6 7
- 23 I will turn to a direction which opens up to more space compared to others
1 2 3 4 5 6 7

Section 2

In this section you will be given two situations of shopping mall junctions and you have to mark your preferred direction of movement. Kindly go through the pictures carefully and mark your response accordingly.

Situation 1

This situation is the view from entrance of a shopping mall. The shops you will get on both the available directional choices present are more or less similar, sell similar merchandise with no perceivable brand differences



Situation 2

This situation also is the view from entrance of another shopping mall. The shops you will get on all the available directional choices present are more or less similar, sell similar merchandise with no perceivable brand differences..



In this case, where will you prefer to go?

Left Right Straight

Section 3

You Are	Male	Female
How old are you?	Less Than 21 Years	
	21-26 Years	27-32 Years
	33-38 Years	39-44 Years
	45-50 Years	Over 50 Yrs
How frequently you visit a shopping mall?	Less than once a month but more than four times a year	
	At least once a month	
	More than once a month	

Analysis of Long-run Operating Performance Following Share Repurchases in India

P. A. Korbu* & Raju L. Hyderabad**

Abstract

The study examines the long-run operating performance of share repurchasing decisions of Indian companies. A sample of 76 buyback announcements of the period from 1999 to 2010 has been employed. The study finds deteriorating operating performance following repurchases. The results indicate that non-improvement in operating performance in post-buyback period is a clear pointer that the buyback is not a tool to improve operating performance.

For Indian firms, the cash flow measures of operating performance show a decline indicating that firms return cash flow for reasons other than operating performance improvement. The results are in consonance with international trends that repurchase firms show a decline in the long-run operating performance.

1. Introduction

The finance literature suggests that managers announce share repurchase plans for multiple reasons that are not mutually exclusive. Among the more commonly accepted explanations are that managers announce repurchases to buy back shares that are undervalued in the market (the undervaluation hypothesis), to signal improved future operating performance (the earnings signaling hypothesis), or to pay out free cash flow (the free cash flow hypothesis) (Nixon and et. al. 2008). Prior financial research focuses on uncovering the dominant managerial motives for share repurchases and on documenting the performance of firms using share repurchase plans.

Nohel and Tarhan (1998) argue that different

firms may have different reasons for repurchasing shares, depending on their investment opportunity set. In particular, low q firms are less likely to have valuable investment opportunities and more likely to have free cash flow (Nixon and et. al. 2008). To distinguish among possible motives for share repurchases, Nohel and Tarhan (1998) gather evidence on the long-term operating performance of firms making tender offer share repurchases. They find evidence that managers of low q firms make tender offer repurchases as part of a larger restructuring package designed to sell off unproductive assets, shrink the size of the firm, improve operating performance, and pay out free cash flow. In contrast, Nohel and Tarhan find that high firms do not experience an improvement in operating performance

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following tender offer plans.

A few studies investigate the long-term operating performance of firms announcing open market repurchase plans, which are much more common than tender offer plans (Nixon and et. al. 2008). Lie (2006) finds evidence that firms experience an improvement in operating performance when they actually repurchase shares during the same fiscal quarter in which they make open market plan announcements. His evidence suggests that actual open market repurchases, rather than simply open market plan announcements, foreshadow performance improvements. Grullon and Michaely (2004) find no evidence that firms announcing open market plans subsequently experience an improvement in operating performance. Grullon and Michaely (2004) find evidence that managers announce open market plans because their firms are maturing and managers seek to pay out free cash flow. Consistent with firms losing growth opportunities, Grullon and Michaely (2004) find that repurchase announcing firms subsequently experience a decrease in capital expenditures, R and D expenditures, systematic risk, and cost of capital. Consistent with firms paying out free cash flow, they find that the cash holdings of firms decrease following repurchase announcements. However, the authors do not allow for high-growth firms and low-growth firms to have different motives underlying their re-purchases. The study did not divide their sample on the basis of growth opportunities to determine whether operating performance or changes in firm characteristics differ for firms with different investment opportunities.

This study provides a new evidence on long-term operating performance and changes in other characteristics for firms announcing open market repurchase plans in India and aims to fill

the void that exists in literature. Several studies on repurchases or buybacks in India have analyzed the announcement returns. Studies analyzing long-term or post-announcement operating performance are conspicuous by their absence. Further, the sample firms that announce open market plans are matched to control firms that did not announce repurchase plans during the six years period, i.e., three years before and three years after the sample firms repurchase announcements.

2. Need for the Study

Though buybacks in India are of two-decade old, there is limited number of studies or no study at all evaluating operating performance of firms announcing or completing buyback of shares. Nearly 250 companies in India have completed buyback since its introduction. However, no attempts have been done to analyse the effect of buybacks on operating performance. The effects of buyback on operating performance are substantial. The buyback completion reduces excess cash flow in the balance sheet and improves the operating performance indicators like ROCE and ROE. The reduction in cash reduces the temptation of managers to overspend on negative NPV projects. Further, buyback conveys a positive confidence of the managers about future cash generating abilities of the firm. There would be substantial savings in shareholding serving cost. All these effects would save operating expenses and improve operating performance. An improved operating performance improves the overall valuation of the firm. In view of limited number of studies on analysis of long-run or post completion operating performance improvements this study assumes the significance. The long-term or long run is a period of time subsequent to buyback

completion. In most of the US, UK, European studies, etc., a period of 3-year is taken as a period of time for the analysis of post-buyback effects. The repurchase effects are not immediate on operating performance. The effects are felt only in a longer period, say 3-year or 5-year period. The improvements in operating performance are compared with a 3-year prior buyback completion period.

3. Objectives

1. To examine the financial characteristics of repurchasing sample and control firms.
2. To analyse the operating performance of repurchasing companies using cash flow measures
3. To examine the relation between operating performance of repurchasing firms and leverage employed
4. To identify the impact of repurchasing decision on accounting measures of operating performance.

4. Review of Literature

Several researchers have hypothesized in both positive and negative terms the impact of the decision to repurchase shares by the companies on the post-repurchase operating performance. Positively speaking, the repurchasing reduces the excess cash flow and reduces the denominator of ROA/ROE measure of operating performance. On the other hand, the others put it that the diversion of cash flow, meant for supporting operating activities, for repurchase decision negatively affects the operating performance. Firms may postpone research spending and may use the resources to defend hostile takeover attempts.

Lie (2005) examines the effect of 4,729 open market repurchase announcements of 1981 to 2000 period and finds improvement in operating performance. Moreover, the capital market responds favourably to earnings announcements after the program announcements. Further analysis reveals that both the operating performance improvement and the positive earnings announcement returns are limited to those firms that actually repurchase shares during the same fiscal quarter.

Nixon and et.al (2008) investigate the informational content of very large, highly publicized, insider stock purchases and document long-term buy-and-hold returns and long-term operating performance after large insider purchases. The study calculates abnormal share returns and abnormal operating performance using a carefully constructed benchmark of control firms. It suggests that large insider purchases do not precede abnormally positive performance and finds modest evidence that large insider purchases are associated with negative future performance, both share price performance and operating performance. The study further finds that low-q firms managers announce repurchases because they perceive an increase in free cash flow and desire to disgorge cash, whereas high q firms managers announce repurchases because their firms' shares are undervalued.

Goh and et.al (2006) examine the firms' share price and operating performance surrounding actual share repurchases and the motivations behind share repurchases in the Hong Kong stock market. The empirical results show that, on average, firms engage in share repurchases when their stocks are under-valued and repurchases are followed by abnormal positive returns. Among re-purchasers, the stock price

performance varies across firms' size and market-to-book ratios. The market responds most favourably to repurchases that are made by small and "value" firms.

Gong and et.al (2008) find that post-repurchase abnormal returns and reported improvement in operating performance are driven, at least in part, by pre-repurchase downward earnings management rather than genuine growth in profitability. The downward earnings management increases with both the percentage of the company that managers repurchase and CEO ownership. Pre-repurchase abnormal accruals are also negatively associated with future performance, with the association driven mainly by those firms that report the largest income-decreasing abnormal accruals. Annalisaand et.al (2008) analyze the operating performance of industrial companies listed on the Italian Stock Exchange that announced share buy-backs from 1989 to 2001. The study finds that the sample companies exhibit a significant worsening of the operating performance subsequent to the announcement, both in absolute terms and bench marking with matching companies. The poor operating performance is particularly significant for companies that effectively buy back the shares after the announcement, while no significant difference is detected for firms that announce the buyback and do not repurchase shares effectively.

Grullon and Michaely (2002) find that contrary to the implications of many payout theories, announcements of open market share repurchase programs are not followed by an increase in operating performance. However, the systematic risk and the cost of capital of these firms decline after these events. Further, the market reaction to share repurchase announcements is more positive among those

firms that are more likely to overinvest. Taken together, the results suggest that the market reacts positively to share repurchase announcements because these events are associated with a reduction in the agency costs of free cash flows and with a reduction in the firm's cost of capital.

Urs and Vermaelen (2005) reject the hypothesis that the market has become more efficient and has eliminated the anomalies first reported by Lakonishok and Vermaelen (1990) and Ikenberry, Lakonishok, and Vermaelen (1995). Buying and tendering shares before the expiration of a self-tender offer still generates large excess returns of 9% in a few weeks. Furthermore, long-run abnormal returns persist after self-tender and open market repurchases. They are highest for firms with very negative returns in the six months prior to the repurchase announcement and firms where managers motivate the repurchase by stating that their stock is undervalued.

Junand et.al (2007) conclude that firms may repurchase their own stocks not only to distribute wealth to shareholders but also to gain control of the firm. The study examines stock repurchase programs of Japanese firms listed in the Tokyo Stock Exchange and finds that ultimate owners of firms with large cash flow to voting right deviation announce stock repurchases more aggressively. It appears that incumbent management teams are wary of the fact that they can become hostile takeover targets. Extending Bagwell's (1991) argument, the study interprets that firms with large deviation between cash flow rights and voting rights are likely to announce large amounts of stock repurchase in order to increase both the cost of gaining a toehold and the price of the offer. The study also finds that Keiretsu (business group) affiliate firms are aggressive in

repurchasing their own shares when the cash flow rights and voting rights are far from alignment. This is consistent with the view of Claessens et. al. (2000) that firms with low deviation between cash flow rights and voting rights return more cash dividends to shareholders to distribute earnings.

Eberhart and Siddique (2005) find no consistent evidence of positive long-term abnormal operating performance or stock returns following buy-backs and find no consistent evidence of a decrease in cash flow from financing or an increase in the firm's debt ratio or default risk. Chemmanur and et.al(2009) analyse accelerated share repurchase (ASR) programs and finds that ASR an innovative way of repurchasing shares in which a company purchases shares of its own stock from an investment bank at a set price on a specific date, typically, the investment bank borrows the shares and is in a short position that it will cover through open-market purchases over a period of time. ASRs have become an increasingly popular means of repurchasing shares in recent times. This paper presents an empirical analysis of firms' rationale for using ASRs rather than the traditional open market repurchase (OMR) programs. It concludes that firms undertaking ASR programs are significantly larger than those undertaking OMR programs, and that ASR programs have larger median deal values than OMR programs.

Thus, the review indicates there is a mixed bag of results relating to the impact of re-purchase decision on operating performance. Further, the studies on Indian repurchases are lacking. In view of this reason, the study aims to examine the buyback decision of Indian firms on long-run operating performance.

1. Research Methodology

The study has selected 76 buybacks announcements completed in India during the period 1999 and 2010 and analyses the effect by considering 6-year event period, 3-year pre and 3-year post-announcement period. All the required data was obtained from the CMIE Prowess Database and employed SPSS package for the purpose of testing the statistical data. The financial variables were employed similar to the works of Barber and Lyon (1996) and Lie (2001). The study uses Earnings Before Interest, Taxes and Depreciation as a proxy cash flow measure (EBITDA) scaled by the average of beginning – and ending-period book value of assets (i-e.,

$$\frac{EBITDA_t}{(Book\ Value_t + Book\ Value_{t-1})/2}$$

as our primary measure of operating performance. The advantage to using the operating income before depreciation (rather than income before extraordinary items) is that this measure is not affected by changes in capital structure. Income before extraordinary items is sensitive to changes in interest payments, but the operating income is not. Another advantage is that operating income before depreciation is not affected by factors such as special items and income taxes that usually affect other measures of earnings (Barber and Lyon, 1996).

However, to test the robustness of our results, we also examine the return on cash-adjusted assets, the return on sales (ROS), and the return on assets (ROA). The return on cash-adjusted assets is equal to the operating income before depreciation scaled by the average of beginning and ending-period book value of cash-adjusted assets. The cash-adjusted assets are equal to the book value of total assets minus cash and marketable securities (Barber and Lyon, 1996). The ROS is equal to the operating income before depreciation scaled by the average of beginning

– and ending-period sales. The ROA is equal to the EBITDA scaled by the average of beginning- and ending-period book value of total assts.

To examine the post event performance of repurchasing firms relative to their pre-event performance, we examine the changes in operating performance. Barber and Lyon (1996) recommend the use of changes instead of levels to examine unexpected or abnormal performance because the test statistics based on changes are more powerful than those based on levels.

We estimate abnormal or unexpected changes in operating performance in two ways. First, we use a benchmark that assumes that the unexpected change in average operating performance is equal to the change in performance in repurchasing firm's operating performance as the change in performance for a matching firm. Following Lie (2001), we choose matching firms that closely resemble the sample firms in industry classification, level of performance in year -1(OP-1), change in performance in year-1 ($\Delta OP-1$), and market-to-book ratio in year-1 (M/B-1). Specifically, we identify matching firms with the following characteristics: (1) a level of operating performance between 80 percent and 120 percent to the sample firm's level of operating performance in year-1; (2) a change in operating performance between 80 percent and 120 percent of the sample firm's change in operating performance from year-2 to year-1; and (3) a market-to-book ratio between 80 percent and 120 percent of the sample firm's market-to-book ration in year-1.

From this initial sample of matching firms, we select the firm that minimizes the following function:

$$\begin{aligned}
 & |OP_{-1, sample\ firm} - OP_{-1, matching\ firm\ i}| \\
 & + |\Delta OP_{-1, sample\ firm} - \Delta OP_{-1, matching\ firm\ i}| \\
 & + |M/B_{-1, sample\ firm} - M/B_{-1, matching\ firm\ i}|
 \end{aligned}$$

The process is repeated if suitable firms are not found first for matching firms with the same asset size as the sample firms, and then for all firms independently of their asset size. If still no matching firm is available we choose the matching firm that minimizes equation (1) independently of the filters. Lie (2001) shows that this performance-adjusted benchmark yields more powerful test statistics than do other benchmarks. To reduce confounding effects, we only consider matching firms that do not announce a repurchase program during the year of the event and during the 3 years after the event.

The variables below are defined as in Nohel and Tarhan (1998), Lehn and Polsen (1989) etc:

Variables	Definition
Operating Performance	Earnings before depreciation, interest, and taxes (EBITDA), as a percentage of average of beginning and ending period book value of assets.
Cash flow margin	EBITDA divided by sales.
Asset turnover	Sales divided by beginning-of-year market value of assets.
Return on Assets	Earnings before depreciation, interest, and taxes (EBITDA), as a percentage of Total Assets.
Leverage	End-of-year market value of assets, divided by end-of-year market value of equity.
Return on Sales	Earnings before depreciation, interest, and taxes (EBITDA), as a percentage of average of beginning and ending period sales.
Return on Cash Adjusted Assets	Earnings before depreciation, interest, and taxes (EBITDA), as a percentage of average of beginning and ending period book value of cash adjusted assets.

6. Descriptive Statistics

Table 1 provides details relating to descriptive statistics of 76 sample repurchasing firms for which information was available:

Table 1: Descriptive Statistics of Repurchasing Firms

Variables	Total Debt (Rs. Cr.)	Leverage (%)	Assets (Rs.)	MTB Ratio (%)	OP (Rs. Cr.)	PAT (Rs. Cr.)	ROCE (%)	RONA (%)
Mean	674.31	40.66	1480.08	5.06	179.71	116.80	17.78	14.55
Median	104.11	41.55	189.53	2.91	33.18	23.79	11.09	11.29
Minimum	0.3	5.05	0.3	0.47	-18.77	-18.84	-11.27	-10.43
Maximum	33899.88	100	72163.74	3.23	7719.83	5137.11	119.93	43.64
Standard Deviation	3849.38	20.20	8211.28	6.19	882.15	587.25	25.94	10.34
Variance	14817720.65	407.98	67425045.09	3.84	778192.48	344865.49	672.83	106.85

Source: Computed from CMIE Prowess Database

A perusal of Table 1 reveals important financial characteristics of 76 repurchasing firms. The average amount of debt employed by the sample firms is Rs. 674.31 crore with mean and median debt to total assets ratio of 41% and 42% respectively. There is a wide variation, both, in amount and proportion of debt employed. The minimum and maximum amount of debt employed ranges from Rs. 03 lakh to Rs. 33,900 crore with a maximum leverage ratio of 100%. The average assets size of Indian repurchasing firms is Rs. 1,481 crore with minimum and maximum values of Rs. 03 lakh and Rs. 72,164 crore respectively.

The sample Indian repurchasing firms are highly valued with a mean MTB ratio of 5.06 times. The average operating profits are Rs. 179.71 crore with a minimum operating profit of Rs. -18.77 crore. There is a high degree of variance in profitability position. The profit after tax averages Rs. 117 crore for the study period with a negative minimum value and greater standard deviation. The return on capital employed (ROCE) is 17.78 % for the study period while the return on net assets (RONA) is 14.55%.

Table 2 provides the financial characteristics of 76 control firms selected for developing reference portfolio:

Table 2: Descriptive Statistics of Control Firms

Variables	Total Debt (Rs. Cr)	Assets (Rs)	Leverage (%)	OP (Rs. Cr)	PAT (Rs. Cr)	ROCE (%)	RONA (%)	MTB (times)
Mean	710.45	1308.87	49.96	180.48	118.45	0.15	9.22	5.83
Median	75.11	218.12	48.68	12.75	5.58	0.13	7.10	2.68
Minimum	0.05	0.64	1.30	-32.99	-33.99	-0.60	-18.14	-2.97
Maximum	36545.81	64035.36	147.03	10161.97	7004.07	1.23	40.92	5.53
Standard Deviation	4153.64	7286.26	27.31	1159.51	800.07	0.20	10.27	9.60
Variance	17252729.74	53089536.95	745.74	1344459.64	640111.87	0.04	105.55	9.21

Source: Computed from CMIE Prowess Database

The average amount of debt employed by control firms is Rs. 710.45 crore with a comparable leverage ratio of 50%. The average debt employed by sample firms is Rs. 674.31 crore. The control firms are, on average, 0.88% lower than the size of sample firms with an asset size of Rs. 1308.87 crore. The MTB ratio of control firms is 5.83 times as against 5.06 times in case of sample firms. This indicates that sample firms are undervalued and control firms' value is just 0.77 times more than the sample firms' value. The minimum and maximum MTB ratios vary from a negative of 2.97 times to a high of 5.53 times. Though the control firms are profitable, but ROCE and RONA are relatively at lower levels compared to sample firms.

The descriptive statistics indicates that compared to sample firms control firms are smaller, employ more debt, overvalued and have lower profitability ratios. Generally, larger firms, with lower debt and higher equity base, more profitable and undervalued employ buybacks to correct market valuation, signal future profitability, increase debt and reduce the equity.

7. Analysis of Operating Performance

The following analysis provides details relating to operating performance ratios of 76 sample repurchasing and control firms for which information was available:

7.1 Operating Performance based on Asset Turnover Ratio

The asset turnover ratio of share repurchasing and control firms is calculated and compared. The higher asset turnover ratio is preferred as it reflects more efficient asset utilization.

Table 3: Operating Performance of Sample and Control Firms based on Asset Turnover Ratio

Year	Sample	Control	Asset Turnover Ratio
-	112.77	89.89	22.89
-2	113.35	87.09	26.26
-1	112.54	79.75	32.79
1	126.90	91.43	35.47
2	121.18	91.32	29.86
3	125.01	98.33	26.68
Sum			173.94
Mean			28.99
Median			28.27
Standard Deviation			4.63
N			76
Sqrt of N			8.72
t-test			0.53
No. of Co's with + AT			76
Per cent of Co's with + AT			100

Source: CMIE Prowess Database

Table 3 provides details relating to the operating performance based on asset turnover ratio of sample and control firms. The differences in the values are also indicated. The ATR shows a decline in post-buyback period compared to pre-buyback. The control-firm adjusted ATR decline is a pointer that share repurchasing firms do poorly in operational terms. All sample firms record positive ATR in pre and post periods, which is statistically not significant.

7.2 Operating Performance based on Cash Flow Margin

The cash flow margin is a measure of the money a company generates from its core operations per rupee of sale. Cash is what a company needs to generate to pay its expenses and purchase assets, and how well a company can convert sales into cash is crucial. Knowing that a

company is continually improving its cash flow margin is extremely valuable and is a key indicator of performance. In the present study the cash flow margin is calculated by dividing EBITDA by Sales. Table – 4 provides the details:

Table 4: Operating Performance based on Cash Flow Margin

Year	Sample	Control	Cash Flow Margin
-3	21.03	20.48	0.54
-2	21.32	20.39	0.93
-1	22.83	21.91	0.92
1	22.89	22.43	0.46
2	21.22	20.70	0.52
3	20.43	20.22	0.21
Sum			3.58
Mean			0.60
Median			0.53
Standard Deviation			0.28
N			76
Sqrt of N			8.72
t-test			0.03
No. of Co's with + CFM			73
Per cent of Co's with + CFM			96.05

Source: CMIE Prowess Database

The cash flow margin of sample firms remains unaltered in post-buyback period while control firm adjusted cash flow ratio has deteriorated in +1 period compared to -1. It improves in +2 before declining in +3. However, pre and post comparison reveals that repurchasing firms' operating performance as measured by cash flow margin ratio deteriorates in post-buyback period.

7.3 Operating Performance based on Leverage Ratio

The financial leverage ratios measure the overall debt load of a company and compare it with the assets or equity (End-of-year market value of assets, divided by end-of-year market value of equity). This shows how much of the company assets belong to the shareholders rather than creditors. When shareholders own a majority of the assets, the company is said to be less leveraged. When creditors own a majority of the assets, the company is considered highly leveraged. The measurements are important for investors to understand how risky the capital structure of the company and investing in it.

The common motive for repurchasing is to alter the firm's capital structure or increase the firm's leverage. Young (1969) proposed that share repurchase is a means of increasing the firm's financial leverage and thereby allows the firm to benefit from the tax advantages of debt financing. Further, the author finds that, repurchasing firms had a lower leverage position than non-repurchasing firms and the repurchasing firms had greater ability to carry additional debt. For the repurchasing firms, with the increase in financial leverage, they can benefit from the tax saving of debt financing. The cost of capital is lower when a company uses some debt for financing repurchase because interest payments are tax deductible while dividends are not. Holding excess cash raises the cost of capital because income from interest earned from the cash is taxable. In general, having too much cash on hand penalizes a company by increasing its cost of financing and puts investors in a disadvantageous situation (Dobbs and Rehm, 2005). Mintz (1995) presented evidence that the 20 largest share repurchases in 1995 allowed firms to benefit from tax savings of a market

value of \$9.5 billion. Guffey and Schneider (2004) showed that the firms engaging in open market repurchase were less indebted and they repurchase to adjust leverage. Table 5 provides sample, control and control firm adjusted values of leverage ratio of both pre and post buyback period, measured by dividing the market value of assets at the end of the year by end-of-year market value of equity:

Table 5: Operating Performance based on Leverage Ratio

Year	Sample	Control	Leverage Ratio
-3	0.00177	0.00157	0.00019
-2	0.00229	0.00180	0.00049
-1	0.00252	0.00164	0.00088
1	0.00136	0.00147	-0.00011
2	0.00105	0.00140	-0.00035
3	0.00084	0.00125	-0.00041
Sum			0.00069
Mean			0.00012
Median			0.00004
Standard Deviation			0.00050
N			76
Sqrt of N			8.71780
t-test			5.76373E-05
No. of Co's with + LR			76
Per cent of Co's with + LR			100

Source: CMIE Prowess Database

Table 5 reveals that leverage ratio of sample firm decreases from 0.00252 in -1 period to 0.00136 in +1. The trend continues in +2 and +3. The ratio is lower in post than in pre-buyback years. The similar results are evident for even control firms. The control firm adjusted leverage ratio is negative in post-buyback period of the study. This decrease is in consonance with the descriptive statistics which shows that repurchasing firms are low-levered compared to control firms.

7.4 Analysis based on Operating Performance Ratio

Barber and Lyon (1996) use expected operating performance (earnings before depreciation, interest and taxes (EBITDA) as a percentage of average of beginning and ending period book value of assets as a measure of operating performance. The present study too uses the same approach to decipher the operating performance of repurchasing firms. Table 6 presents the details:

Table 6: Analysis based on Operating Performance Ratio

Year	Sample	Control	OP Ratio
-3	20.49	13.90	6.59
-2	21.22	13.38	7.84
-1	21.21	13.83	7.37
1	20.27	13.48	6.79
2	20.26	14.09	6.16
3	20.22	14.42	5.80
Sum			40.55
Mean			6.76
Median			6.69
Standard Deviation			0.75
N			76
Sqrt of N			8.72
t-test			0.09
No. of Co's with + OP			74
Per cent of Co's with + OP			97.37

Source: CMIE Prowess Database

Table 6 reveals that the ratio of EBITDA to book value of assets of sample firms is higher than the control firms' ratio for all the duration considered by the study. This corroborates the descriptive statistics inference that the sample firms are more profitable firms than control firms. However, the worrying point is that has fallen in post-buyback compared to pre-buyback indicating deterioration in the performance. This is a testimony to the fact that the buyback is not a strong technique to improve operating performance of the firm.

The results of this ratio are consistent with the results of Grullon and Michaely (2004). The firms generally undertake open market share repurchases to pay out free cash flow. They reason out that firms announcing open market repurchasing plans do so because they are maturing and running out of valuable growth opportunities. Consistent with free cash flow hypothesis, they find that firms announcing open market share repurchases do not subsequently experience an improvement in operating performance.

7.5 Analysis based on Return on Assets

A share repurchase has an obvious effect on a company's income statement, since it reduces its outstanding shares. But it also impacts other financial statements. On the balance sheet, a share repurchase will reduce the company's cash holdings, and consequently its total assets base, by the amount of the cash expended in the buyback. The buyback will simultaneously also shrink shareholders equity on the liability side by the same amount. As a result, performance metrics such as return on assets ROA and return on equity (ROE) typically improve subsequent to share buy-back. This measurement is similar to that used by Lie (2005) and is widely used in the finance and accounting literature to gauge operating efficiency. Table 7 presents the details:

Table 7: Analysis based on Return on Assets

Year	Sample	Control	Return on Asset
-3	18.57	13.19	5.38
-2	20.41	13.06	7.36
-1	20.53	13.25	7.28
1	18.70	14.72	3.98
2	18.74	14.67	4.07
3	18.53	14.98	3.55
Sum			31.62
Mean			5.27
Median			4.73
Standard Deviation			1.70
N			76
Sqrt of N			8.72
t-test			0.20
No. of Co's with + □O□			74
Per cent of Co's with + □O□			97.37

Source: CMIE Prowess Database

The results of the analysis are in continuation of EBITDA to book value of assets ratio, that the sample firms are more profitable than control firms and the ratio has fallen in post period compared to pre-announcement period indicating that the buyback does not improve operating performance.

7.6 Analysis based on Cash Adjusted Assets Ratio

The return on assets measure scales operating income by the book value of total assets, which reflects all assets of the firm, both operating and non-operating. Operating income reflects income generated by only the operating assets of the firm. To obtain a more accurate measure of the productivity of a firm's operating assets, operating income should be scaled only by the value of the operating assets (Barber and Lyon, 1996).

The most important adjustment to total assets is

the deduction of cash and marketable securities from the book value of total assets. While a certain level of cash is necessary for a firm's operations, much of the time series variation in cash balances is attributable to the financing activities of the firm. Thus, we often observe large increases in cash balances when a firm issues securities but does not immediately invest those funds. When sample firms experience a time series variation in cash balances that is significantly different from control firms, results can be affected by deducting cash balances from total assets. This is likely to be the case for sample firms recently issued securities (Barber and Lyon, 1996).

A separate, but related, issue is the build-up in operating assets following a securities issue. Though some firms might retain a portion of the proceeds from an issue in cash, others might invest the full amount in operating assets. Of course, this investment leads to an increase in operating assets, but in all likelihood, these assets have not been put in place long enough to generate operating income. This build up in operating assets can lead to a temporary decline in ROA, until the new operating assets begin to generate income. Obviously, deducting cash and marketable securities from the book value of total assets does not address this issue. However, researchers can extend their analysis to several years after an event of interest to ascertain whether erosion in operating performance is the result of a temporary build-up in assets. Or they can use a performance measure that is unaffected by the change in the asset base (i.e., return on assets). The study re-estimates all of our results using an ROA in which assets are net of cash balances. This performance measure is return on cash adjusted assets (Barber and Lyon, 1996) and table 8 presents the details:

Table 8: Analysis based on Cash Adjusted Assets

Year	Sample	Control	Cash Adjusted Asset
-3	19.51	14.05	5.46
-2	20.86	13.27	7.60
-1	20.56	13.76	6.80
1	20.00	13.56	6.44
2	19.29	14.15	5.14
3	18.92	14.46	4.47
Sum			35.90
Mean			5.98
Median			5.95
Standard Deviation			1.16
N			76
Sqrt of N			8.72
t-test			0.13
No. of Co's with + C□□			74
Per cent of Co's with + C□□			96.10

Source: CMIE Prowess Database

The results of cash adjusted assets ratio are consistent with several international empirical studies. The operating performance measure as shown by ROA for cash adjusted deteriorates in post-buyback period compared to pre-buyback period though control firms are more profitable than sample firms. The results of Barber and Lyon, (1996), Nohel and Tarhan (1998), Annalisa Annalisaand et.al., (2008), find similarly that the buyback affects firms' performance.

7.7 Analysis based on Return on Sales

Scaling operating income by sales can overcome the historical cost and non-operating assets problems associated with ROA. The scaling of operating income by the book value of total assets indicates that operating income may not be appropriately matched with the assets used to generate that income. In addition, the total assets

includenon-operating assets and total assets are recorded at historic cost while operating income is reported in current rupees.

An alternative performance measure–(return on sales)is constructed by scaling operating income by sales. The advantage of this performance measure is that both the numerator and denominator are from a firm's income statement and are more appropriately matched. Table 9 gives the details:

Table 9: Analysis of Sample and Control Firms based on Return on Sales

Year	Sample	Control	Cash Adjusted Asset
-3	22.15	21.88	0.26
-2	23.47	20.76	2.71
-1	23.70	22.78	0.92
1	21.25	20.51	0.74
2	20.39	19.18	1.21
3	21.09	20.67	0.41
Sum			6.26
Mean			1.04
Median			0.83
Standard Deviation			0.89
N			76
Sqrt of N			8.72
t-test			0.10
No. of Co's with + C□□			73
Per cent of Co's with + C□□			94.81

Source: CMIE Prowess Database

The results of table - 9 are similar to other ratios employed in this study. There is an immediate deterioration in operating performance in +1 year compared to -1 year. However, the difference in ROS is marginal and could mean that sales are equally profitable both in sample and control firms but when compared to assets the profitability falls. The lower asset profitability could be attributed to larger size of sample firms as per descriptive statistics.

8. Conclusion

The study examines the operating performance of repurchase firms in the post announcement period, by employing operating measures as employed by Barber and Lyon (1996), Noel and Tarhan (1998), Gurlon and Michaely (2002) and other studies. The results of our study are in consonance with majority of studies especially with Gurlon and Michaely (2002), that buybacks do not improve operating performance. These results are quite complex and contrasting. Non-improvement in operating performance in post-buyback period is a clear pointer that the buyback is not a tool to improve operating performance. It is rather than a tool to distribute excess or flabby cash flows without affecting operating performance. For Indian firms, the cash flow measures of operating performance show a decline indicating that firms return cash flow for reasons other than operating performance improvement.

In general, buyback is employed in India to build promoters' holding or to correct lower valuation. The decline is a clear pointer at this hidden goal. The firms operating cash flows are used to build promoters stake and thwart hostile take-over attempts even if it decreases post-buyback performance. The gullible investors suffer on account of firms' decision to buyback shares.

9. References

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Appendix1: List of Sample and Control Firms with Media/Public Announcement Date

Sl.No	Media/Public	Sample Firms	Control Firms
1	09-12-2002	Aarti Drugs Ltd.	Merind Ltd
2	18-04-2002	Abbott India Ltd	Ajanta Pharma Ltd
3	26-08-2006	Abbott India Ltd	Surya Pharmaceutical Ltd
4	01-10-2003	Ace Software Exports Ltd	Integrated Hitech Ltd
5	21-04-2007	Ace Software Exports Ltd	Prithvi Softech Ltd
6	14-11-2002	Addi Industries Ltd	Samtex Fashions Ltd
7	23-01-2002	Ador Welding Ltd/ Advani Oerlikon Ltd	Esba India Ltd.
8	03-05-2003	Apollo Tyres Ltd	Goodyear India Ltd
9	09-03-2004	Avery India Ltd BB	Kabra Extrusiontechnik Ltd.
10	10-06-2004	Avery India Ltd BB	Stovec Industries Ltd.
11	04-11-2000	Bosch Ltd (Moter Industries Ltd)	Bharat Forge Ltd
12	07-12-2001	Bosch Ltd (Moter Industries Ltd)	Bharat Forge Ltd
13	28-08-2001	Britannia Industries Ltd	Shah Foods Ltd
14	26-08-2002	Britannia Industries Ltd	Shah Foods Ltd
15	09-06-2004	Britannia Industries Ltd	Shah Foods Ltd
16	01-07-2000	Carborundum Universal Ltd	Grindwell Norton Ltd
17	02-09-2002	Chordia Food Products Ltd	Bilati (Orissa) Ltd
18	19-03-2005	D I L Ltd	Zandu Realty Ltd.
19	17-02-2003	E C E Industries Ltd	Jyoti Ltd (Duplicate name Gujarat)
20	23-03-2006	E T C Networks Ltd	Hathway Bhawani Cabletel & Datacom Ltd.
21	26-12-2001	Exide Industries Ltd	Amara Raja Batteries Ltd
22	26-12-2001	F D C Ltd	Neuland Laboratories Ltd
23	17-05-2003	Fine-Line Circuits Ltd	Raaj Medisafe India Ltd.
24	30-08-2004	Fine-Line Circuits Ltd	Ruttonsha International Rectifier Ltd.
25	08-02-2000	Finolex Cables Ltd	RPG Cables Ltd
26	24-04-2002	Finolex Cables Ltd	Sterlite Technologies Ltd.
27	11-04-2001	Finolex Industries Ltd	Supreme Petrochem Ltd.
28	31-07-2002	Finolex Industries Ltd	Chemplast Sanmar Ltd.
29	18-01-2002	G G Dandekar Machine Works Ltd	Integra Engineering India Ltd.
30	30-05-2000	Gandhi Special Tubes Ltd	S T I Products India Ltd.
31	02-12-2004	Glaxosmithkline Consumer Healthcare Ltd	Anik Industries Ltd.
32	15-03-2005	Glaxosmithkline Pharmaceuticals Ltd	Cipla Ltd.
33	11-01-2002	Godrej Consumer Products Ltd	Continental Chemicals Ltd.
34	05-08-2002	Godrej Consumer Products Ltd	Emami Ltd.
35	16-01-2003	Godrej Consumer Products Ltd	Emami Ltd.
36	23-10-2003	Godrej Consumer Products Ltd	Emami Ltd.
37	27-04-2004	Godrej Consumer Products Ltd	A V T Natural Products Ltd.
38	16-10-2004	Godrej Consumer Products Ltd	A V T Natural Products Ltd.
39	01-11-2000	Great Eastern Shipping Co.Ltd	Essar Ports Ltd.
40	11-08-2001	Great Eastern Shipping Co.Ltd	Essar Ports Ltd.
41	05-04-2007	Gujarat Ambuja Exports Ltd	Marico Ltd.
42	16-01-2002	Heritage Foods (India) Ltd	Hatsun Agro Products Ltd.

Appendix1: List of Sample and Control Firms with Media/Public Announcement Date

Sl.No	Media/Public	Sample Firms	Control Firms
43	30-01-2002	Hindalco Industries Ltd	National Aluminium Co. Ltd.
44	04-04-2001	India Nippon Electricals Ltd	Automotive Axles Ltd.
45	20-08-2002	Indian Hume Pipe Co.Ltd	Everest Industries Ltd.
46	31-03-2004	Inox Air Products Ltd	B A S F India Ltd.
47	28-04-2000	Kesoram Industries Ltd	D C M Shriram Consolidated Ltd.
48	02-12-2002	Kesoram Industries Ltd	Balaji Industrial Corpn. Ltd.
49	30-09-2003	Khoday India Ltd	Shaw Wallace & Co. Ltd. [Merged]
50	15-10-2001	Manugraph India Ltd	Veejay Lakshmi Engg. Works Ltd.
51	20-05-2004	Mastek Ltd	Sonata Software Ltd.
52	01-04-2007	Mro-Tek Ltd	S Mobility Ltd.
53	06-09-2006	Natco Pharma Ltd	Surya Pharmaceutical Ltd.
54	06-03-2000	Neelamalai Agro Inds. Ltd	Norben Tea & Export Ltd.
55	26-09-2001	O C L India Ltd	Andhra Cements Ltd.
56	20-01-2003	O C L India Ltd	Rain Commodities Ltd.
57	22-10-2003	Punjab Communications Ltd	Avaya Globalconnect Ltd
58	06-01-2001	Raymond Ltd	Digjam Ltd.
59	27-12-2004	Reliance Industries Ltd	Indian Oil Corpn. Ltd.
60	29-06-2006	Revathi Equipment Ltd	Premier Ltd.
61	28-06-2006	S R F Ltd	Indo Rama Synthetics (India) Ltd.
62	29-02-2000	Selan Exploration Technology Ltd	Hindustan Oil Exploration Co. Ltd.
63	26-03-2001	Selan Exploration Technology Ltd	Hindustan Oil Exploration Co. Ltd.
64	01-04-2002	Selan Exploration Technology Ltd	Hindustan Oil Exploration Co. Ltd.
65	11-05-2003	Selan Exploration Technology Ltd	Hindustan Oil Exploration Co. Ltd.
66	18-06-2001	Siemens Ltd	A B B Ltd.
67	01-08-2002	Solitaire Machine Tools Ltd	Miven Machine Tools Ltd.
68	31-12-2002	Sun Pharmaceutical Industries Ltd	Wockhardt Ltd.
69	22-04-2004	Sun Pharmaceutical Industries Ltd	Orchid Chemicals & Pharmaceuticals Ltd.
70	09-10-2002	Tube Investments of India Ltd	Electrosteel Castings Ltd.
71	11-09-2002	Venky's (India) Ltd	Hind Industries Ltd.
72	30-06-2001	Winsome Yarns Ltd	Patspin India Ltd.
73	18-04-2002	Winsome Yarns Ltd	Cheslind Textiles Ltd.
74	05-01-2000	Jay Shree Tea & Inds. Ltd	Goodricke Group Ltd.
75	24-05-2001	Jay Shree Tea & Inds. Ltd	Harrisons Malayalam Ltd.
76	11-06-2003	Mazda Ltd	Jaipan Industries Ltd.

Source: CMIE Prowess Databases

Does Research & Development (R&D) Activities Impact Financial Performance? An Empirical Study Based On Selected Multinational (MNC) Pharmaceutical Companies Operating In India

Mithun Nandy* & Brajaballav Pal**

Abstract

Multinational (MNC) companies are known for their commitment towards innovation and they spend heavily on Research & Development (R&D) Expenditure. In India, subsidiaries of major multinational pharmaceutical companies (MNCs) are spending over 15 to 24 per cent (%) of their net sales on Research & Development (R&D) expenses to ensure its prosperity in Indian as well as International market by offering innovative health care solutions to the health care providers for treating the needy patients and ensuring speedy recovery. Since the cost of Research & Development (R&D) Expenditure for subsidiaries of different Multinational Companies (MNCs) operating in India is very high and sometimes the cost of Research & Development (R&D) Expenditure touches up to 24% on their Annual Income, many management professionals do consider that Research & Development (R&D) Expenditure as a wastage of company's resources and are completely unaware of its unmatched and unexplored usefulness towards serving the mankind.

The purpose of this study is an attempt to explore the impact of different market structure elements (Research & Development Expenditure or R&D, Advertising Expenditure, Marketing Expenditure, Capital Intensity, Leverage Ratio and Operating Expenditure Ratio to Total Assets Ratio) on the Financial Accounting Performance measurement (Sales Turnover / Annual Income) in the Indian Pharmaceutical Industry (IPI). Stratified Sampling Technique has been used to select the subsidiaries of Multinational Companies (MNCs) based on two criteria's and the criteria's are : all the companies have presence in Indian Market for the study period 1995 – 2015 and all these companies have invested rational Research & Development (R&D) Expenditure in their business. The study includes twenty six (26) subsidiaries of Multinational Companies operating in India as sample size. We have used secondary data in our study which are collected from Capitalline Corporate Database, Annual Reports, Press Release and Corporate Brochures. Strongly balanced panel dataset has been used in our study. In our study Descriptive Statistics, Correlation Matrix and Regression Analysis have been used as statistical techniques and statistical software package STATA has been used for data analysis. The results of the study confirmed a significant positive relationship between Research & Development (R&D) Expenditure and profitability of the Subsidiaries of Multinational Companies (MNCs) operating in India.

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1. Introduction

Health is defined both as cause and effect of economic development, and the Indian Pharmaceutical Industry (IPI) is especially recognized in the “UN Millennium Development Goals” as a catalyst that can contribute to economic development. This Indian Pharmaceutical Industry (IPI) is classified as one of the most high-tech and capital-intensive industries. It is considered as the “life line” industry because its products play a crucial role in remedying the suffering of diseased persons. It is also significant contributor to the strength of Indian economy by creating jobs for millions and contributing to the export earnings. The distinctive feature of this Indian Pharmaceutical Industry (IPI) is such that the goods produced by this sector can neither be substituted nor replaced by the products pertain to other industry or sector.

The Indian pharmaceutical industry, now over to Rs. 1,00,000 crores (US \$ 20 billion) industry, has shown tremendous progress in terms of infrastructure development, technology base creation and a wide range of products. It has established its presence and determination to flourish in the changing environment. The industry now produces bulk drugs belonging to all major therapeutic groups requiring complicated manufacturing technologies. Formulations in various dosage forms are being produced in GMP (Good Manufacturing Practices) compliant facilities. Strong scientific and technical manpower and pioneering work done in process development have made this possible. The country now ranks 3rd worldwide by volume of production and 14th by value thereby accounting for around 10% of world's production by volume and 1.5% by value. Globally, it ranks 4th in terms of generic production and 17th in terms of export value of

bulk actives and dosage forms. Indian exports are destined to more than 200 countries around the globe including highly regulated markets of USA, West Europe, Japan and Australia. By making right investment in creating Pharma Innovation Hub in the country, the country can reap the benefits both social and economic which would also include creation of additional high value research jobs.

The total employment is about 340,000 in the sector and an estimated 400,000 doctors and 300,000 chemists are serving over 1 billion customers market. The Indian pharmaceutical sector has emerged as a prominent provider for healthcare products catering to more than 95% pharmaceutical needs of the country with a population of 1.1 billion (FICCI Report 2005). There has been a paradigm shift in the policies and programs governing Indian pharmaceutical industry resulting in this industry, almost non-existent till 1970, transforming to a 6 billion USD industry growing at a Compound Annual Growth Rate (CAGR) of 13.7%.

The Indian pharmaceutical market is highly fragmented with 300 large and 18,000 mid-sized and small companies. It is a successful, high-technology-based industry that has witnessed consistent growth over the past three decades. The Indian pharma industry (IPM) accounts for about 1.4 per cent of the world's pharma industry in value terms and 10 per cent in volume terms. The pharma industry across the world is likely to get boost owing to increased urbanization and change in lifestyle patterns.

Also, growing at an average rate of about 20 per cent, India's biotechnology industry comprising bio-pharmaceuticals, bio-services, bio-agriculture, bio-industry and bioinformatics may reach the US\$ 7 billion mark by the end of FY15, according to an industry body.

Biopharma is the largest sector contributing about 62 per cent of the total revenue, with revenue generation to the tune of over US\$ 2.03 billion. The bio-pharma sector comprises vaccines, therapeutics and diagnostics.

Further estimates the healthcare market in India to reach US\$ 31.59 billion by 2020.

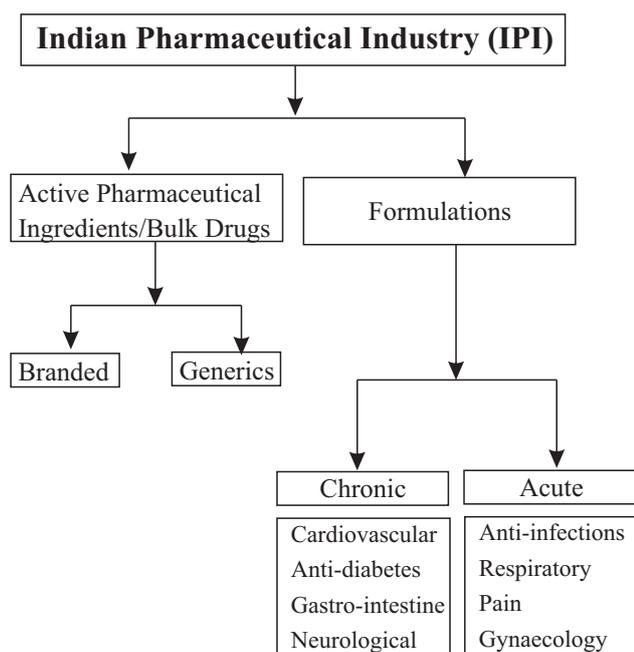
In future it will be a growth period of the Indian Pharmaceutical Industry. The growth is expected to emerge from three major areas:

1. Contract research and development services.
2. Export led business of generics and bulk drugs and.
3. Growth in specialty therapeutic areas in the domestic market.

The growth in the institutional segment is likely to raise the market for diagnostics.

1.1 Structure of Indian Pharmaceutical Industry (IPI)

Structure of Indian Pharmaceutical Industry (IPI) is presented below with the help of a diagram.



Source: Dun & Bradstreet, TechSci Research

The Indian pharmaceutical industry can be divided into the bulk drug and formulations segments.

A brief discussion on Active Pharmaceutical Ingredients / Bulk Drugs and Formulations are made in the following.

Active Pharmaceutical Ingredients / Bulk Drugs

Bulk drugs are the active pharmaceutical ingredients (APIs) with medicinal properties, which are used to manufacture formulations.

The Indian pharmaceutical industry manufactures about 400 bulk drugs belonging to various therapeutic segments.

Formulations

Formulations are the end-products of the medicine manufacturing process, and can take the form of tablets, capsules, injectables or syrups, and can be administered directly to patients.

Formulations further classified into Chronic and Acute Diseases. In the following a short description of these two types diseases are made.

Chronic Disease

A chronic disease is one lasting 3 months or more, by the definition of the U.S. National Center for Health Statistics. Chronic diseases generally cannot be prevented by vaccines or cured by medication, nor do they just disappear.

Examples of Chronic Diseases are mentioned below.

- Cardiovascular
- Anti-diabetes
- Gastro-intestine
- Neurological

Acute Disease

A disease or disorder that lasts a short time, comes on rapidly, and is accompanied by distinct symptoms. Acute disease is characterized by a relatively sudden onset of symptoms that are usually severe. An episode of acute disease results in recovery to a state comparable to the patient's condition of health and activity before the disease, in passage into a chronic phase, or in death.

Examples of Acute Diseases are mentioned below.

- Ant infections
- Respiratory
- Pain
- Gynaecology

1.2 Profile of Some Subsidiary Companies of Multinational Companies (MNCs') Operating in India

In the early decades of Independence, Government policies for the pharmaceutical sector encouraged multinational companies to establish manufacturing bases in India. With the result, that such companies quickly gained a dominant control of the Indian pharmaceutical market. The multinationals enjoyed a market share of over 80% till the 1970s. With the introduction of the Indian Patents Act and the Drug Price Control Order in 1970, Indian players discovered new avenues of growth, and consequently, the share of the multinationals declined. The Patent Act, 1970, provided opportunity to Indian players by allowing reverse process engineering of known molecules (under and off patent). Thus, the multinationals felt discouraged to introduce their latest products (on which they had patents internationally) in the Indian market even as the Indian companies increasingly took up the manufacturing of formulations.

The share of multinationals in India's retail formulations market has declined over time. While in fiscal 1998, eight multinationals figured among the top 20 players, the figure was just five by the end of calendar 2001. In the year 2017 the MNC subsidiaries pharmaceutical companies operating in India have tracked and in the following some of the profile of MNC subsidiaries irrespective of their turnover are discussed in the following.

A. Glaxosmithkline Pharmaceuticals Limited (GSK INDIA)

Company Profile

GlaxoSmithKline Pharmaceuticals Limited (GSK India) is an Indian subsidiary of GlaxoSmithKline Plc. (a British multinational employing around 98,000 people in 150 countries), with its head office in Mumbai, Maharashtra, India. Established in 1924 (under a different name), GSK India manufactures and sells medicines across therapeutic areas such as anti-infectives, dermatology, gynaecology, diabetes, oncology, cardiovascular diseases and respiratory diseases, as well as vaccines for critical diseases like pneumococcal disease, meningitis, hepatitis, rotavirus, whooping cough, small pox and influenza.

Operational Areas

The company operates in the following key segments.

a. Pharmaceuticals

(anti-infectives, dermatology, gynaecology, diabetes, oncology, cardiovascular diseases and respiratory diseases).

b. Vaccines

(pneumococcal disease, meningitis, hepatitis, rotavirus, whooping cough, small pox and influenza).

c. Consumer Healthcare, through a different company, GlaxoSmithKline Consumer Healthcare Ltd., selling nutritional and OTC products.

- i. Nutritional Products like Horlicks (a 100+ year brand), Boost, Foodles, Maltova and Viva.
- ii. OTC products like Crocin, Eno, Iodex and Sensodyne.

Research & Development (R&D) Activities – Short Description

GSK continues to be committed to Research and Development of medicines that will improve the quality of life of people around the world and truly make a difference to patients.

Patient safety is always GSK's priority and hence, a fundamental focus of GSK's research and development activities is the evaluation of benefits and risks of GSK's products. This involves rigorous checks not just before approval, but also continuous monitoring while the product is in use.

The Company has a R&D unit in India, namely Pharmaceutical Research & Development (PR&D) is approved by Department of Science and Industrial Research, Government of India.

To address ethical concerns related to biomedical research, GSK maintains the following.

Opening about company's approach and participates in discussions on research practices.

Regularly engage with academic scientists, regulators, policy makers and other stakeholders involved in this field of work.

Marketing Activities – Brief Discussion

Sales and marketing is a big part of GSK's Pharmaceuticals and Vaccines businesses.

Essentially, its role is to commercialise GSK's

product portfolio. That could mean bringing vaccines to protect people against diseases, marketing its medicines or identifying new research and development opportunities.

Sales and marketing is an exciting, evolving area. GSK is constantly looking to drive business improvement, deliver greater value to patients and accelerate our growth. The work can also be extremely diverse. Many of GSK's commercial activities involve liaising with governments, regulatory and health authorities.

The product portfolio of GSK includes both established brands and newer, innovative medicines. The company gives their customer-facing professionals in-depth science training to present their medicines and vaccines properly and reward them for their ability to build relationships with the healthcare industry. By putting the interests of patients first, the company makes sales and marketing an extremely rewarding career option.

B. Sanofi India Limited

Profile

Since 1956, Sanofi India Limited has aligned itself with India's healthcare needs by building expertise, capability & capacity, through continued investments, strategic partnerships, and a shared commitment towards patients.

Sanofi India Limited was incorporated under the name Hoechst Fedco Pharma Private Limited. Over the years, its name was changed to Hoechst Pharmaceuticals Private Limited, Hoechst India Limited and Hoechst Marion Roussel Limited.

The shares of Sanofi India Limited are quoted on the Bombay Stock Exchange and the National Stock Exchange.

Operational Areas

The company offers therapeutic solutions in the following areas.

- a. Diabetes
- b. Cardiology
- c. Consumer Healthcare
- d. Hospital
- e. Central Nervous System
- f. Anti-Histamines
- g. Cardiovascular Diseases
- h. Internal Medicine
- i. Oncology
- j. Vaccines & Consumer Healthcare
- k. Primary Health Care
- l. Arthritis and Osteoporosis

Research & Development (R&D) Activities – Short Description

Over the past decades, the company has achieved tremendous efforts in biomedical research and have progressed in controlling infectious diseases for instance. People live longer, they now suffer from more complex and chronic diseases, such as diabetes, cancer or cardiovascular diseases. These diseases remain difficult to treat effectively, hence the necessity to find ways to accelerate the development of new, more effective and better tolerated health solutions for patients. At the heart of company's job is high-quality and rigorous science combined with a passion to understand patients' needs and develop the solutions that will improve their lives.

Marketing Activities – Brief Discussion

This company also remains committed to adhering to compliant behaviour and uniform code of marketing practices that ultimately helps protect patient safety and ensures the proper use of medicines. The company is having expertise and know-how to market their products.

C. Abbott India Limited

Profile

Abbott India Ltd. is an Indian subsidiary of the American worldwide healthcare company, Abbott Laboratories, with its head office in Mumbai, Maharashtra, India. Although incorporated under a different name in 1944, Abbott has been operating in India since 1910.

Operation Areas

It has a strong brand presence in several therapeutic categories, ranging from women's health to gastroenterology, neurology, thyroid, diabetes, urology, pain management, vitamins and anti-infectives. Some of the company's global products include Brufen, Prothiaden, Thyronorm and Leptos.

The company's business is divided into 4 key segments:

- A. Women's Health, Gastroenterology and Hepatic Care
(i.e. global and local brands in the pregnancy, constipation and liver diseases segments)
- B. Specialty Care
(i.e. hypothyroidism, epilepsy, sleep disorders, depression, vertigo, migraine and diabetes)
- C. General Care
(i.e. pain management, vitamins and pregnancy)
- D. Consumer Care
(i.e. over-the-counter antacid segment)

Abbott India Limited also offers a variety of nutritional products for infants, children, active adults and people with special dietary needs. Some of the key products include:

- a. Similac, a milk formula for infants and children
- b. PediaSure, a balanced nutrition product for children
- c. Ensure, an adult nutritional product
- d. Glucerna, a nutritional product for people with diabetes
- e. Nepro, a nutritional product for people with kidney diseases
- f. Prosure, a nutritional product for people with cancer
- g. Mama's Best, a nutritional supplement for pregnant and breast feeding mothers

Research & Development (R&D) Activities – Short Description

Over 130 Abbott scientists conduct research and development (R&D) activities to meet specific Indian needs. These scientists work passionately to advance health by addressing the country's unique challenges. Some of Abbott's contributions include developing locally relevant nutrition products for women, children and diabetic patients; treating epilepsy in children; raising awareness of thyroid conditions; combating gingivitis and more.

Marketing Activities – Brief Discussion

With over 14,000 employees in India and extensive local knowledge, Abbott India offers relevant solutions that ensure the healthcare needs of consumers, patients, doctors, hospitals, blood banks and laboratories are being met throughout both rural and urban areas.

Positioned as a market leader in

pharmaceuticals, nutrition, devices and diagnostics, Abbott India's key brands occupy the top positions in relevant categories. The company offers over 400 trusted pharmaceutical brands; a variety of nutritional products for infants, children, active adults and people with special dietary needs; medical devices, including blood glucose meters, vascular devices and a range of diagnostics solutions.

1.3 Profile of some Reputed Indian Pharmaceutical Companies

A. Sun Pharmaceuticals Limited

Profile

Sun Pharmaceuticals Ltd. is India's largest (by market capitalization) and the world's 5th largest specialty generic pharmaceutical company. The company manufactures and sells high-quality, affordable medicines in over 150 countries across 6 continents. The company has over 48 manufacturing facilities across the globe. 30 of their brands are among the top 300 pharma brands in India.

Operational Areas

The therapeutic segments covered by the company's portfolio of 2000+ molecules include psychiatry, anti-infectives, neurology, cardiology, orthopaedics, diabetology, gastroenterology, ophthalmology, nephrology, urology, dermatology, gynaecology, respiratory, oncology, dental and nutritionals.

Sun Pharma's business is broadly categorized into four segments:

- a. Active Pharmaceutical Ingredients (API)
- b. International Branded Generics
- c. Indian Branded Generics and
- d. US Generics.

Research & Development Activities

As of 31st March 2015, Sun Pharmaceuticals Ltd. had an intellectual capital of 2,000+ scientists, and had invested over 7% of its annual revenues in R&D.

Marketing Activities

The company markets its pharmaceutical formulations as generics and branded generics in India and all major international markets. Over 72% of Sun Pharma sales are from overseas markets. The US is its single largest market, accounting for almost 60% of its turnover. They also make and market specialty APIs that include steroids, hormones, peptides and anti-cancers manufactured at 14 international standard manufacturing facilities around the world.

B. Glenmark Pharmaceuticals Limited

Profile

Glenmark Pharmaceuticals Limited is an Indian multinational pharmaceutical company based in Mumbai, Maharashtra, India. Founded by Mr. Gracias Saldanha in 1977, the company manufactures and sells finished branded formulations, generic drugs and active pharmaceutical ingredients (APIs) in 80+ countries including India, the United States, EU, Japan and South America.

Operational Areas

Glenmark's primary business is structured around the following areas.

- a. Drug Discovery
- b. Branded Formulations
- c. Generics Formulations and
- d. Active Pharmaceutical Ingredients (APIs)

The above mentioned cover the areas such as dermatology, internal medicine, paediatrics, cardiovascular, gynaecology, anti-infectives,

antibiotics, anti-allergics, anti-emetics, ENT, diabetes, etc.

Research & Development Activities

Glenmark Pharmaceuticals focuses on differentiated, specialty and innovative products especially in the three core therapeutic areas of oncology, dermatology and respiratory. As per the strategic blueprint to make the transition into an innovation led global pharmaceutical organisation, the company is targeting 30 percent (30%) of total revenues from specialty and innovation segments over the next decade.

Marketing Activities

The company's US subsidiary (Glenmark Generics Inc.) is one of the Top 25 generic drug companies in the US, with portfolio of 90+ products which perform the marketing activities in niche segments like dermatology, hormones, controlled substances, oncology, and modified release products.

C. Lupin Limited

Company Profile

Lupin Ltd. is one of the reputed pharmaceutical companies in India. It is based in Mumbai, Maharashtra, India. The company was founded by Dr. Desh Bandhu Gupta (an associate professor) in 1968.

Operational Areas

The business of Lupin mainly concentrated on the following areas.

- a. Active Pharmaceutical Ingredients (APIs),
- b. Advanced Drug Delivery Systems (ADDS) and
- c. Biotechnology Products.

Research & Development Activities

Lupin's investments in Research and Development (R&D) have helped to gain a leadership position in differentiated product introductions and become a formidable player in the generics space. It forms the base for further successes as the company emerge gradually as a specialty pharmaceutical player. With a solid team of 1,700 scientists and technologists employed at company's state-of-the art facilities in India and abroad, the company is well on track to emerge as an innovation led transnational pharmaceutical powerhouse providing affordable healthcare solutions with uncompromising quality. Lupin's research scientists have a proven track record of delivering high quality technology intensive products; Active Pharmaceutical Ingredients (APIs), Formulations and newer dispensation forms. In keeping with focus on research led financial growth, the company has increased investments in Research & Development in the current fiscal to Rs. 23,101 million, which is 13.5% of company's global revenues. This continues to company's efforts in finding novel solutions and ramp up efforts on a range of delivery systems spanning multiple concepts and solutions.

Marketing Activities

The company manufactures and sells a wide range of Branded and Generic Formulations in the therapy areas such as cardiovascular, anti-TB (world leader), anti-asthma, anti-diabetic, anti-infective, gastro-intestinal (GI), central nervous system (CNS) in over 100 Countries. Its major markets include USA, India, Japan, Europe, South Africa, Philippines and Australia.

Tabular Chart 1: Product Development through CRAMS (Contract Research and Manufacturing Services)

Indian Pharma	R&D Area
<i>Multinational Pharma</i>	
Lupin Laboratories	
<i>Fujisawa Apotex</i>	Cefixime Cefuoxime Cefuroxime Axetil Lisinopril (Bulk)
Nicholas Piramal	
<i>Allergan Advanced Medical Optics Bulk & Formulations</i>	Eye Products
Wockhardt	
<i>Ivax</i>	Nizatidine (anti-ulcer)
Dishman Pharmaceuticals	
<i>Solvay Pharmaceuticals</i>	Eprosartan Mesylate
IPCA labs	
<i>Merck Tilomed</i>	Bulk Drugs Atenelol
Orchid Chemicals and Pharmaceuticals	
<i>Apotex</i>	Cephalosporin and an Injectables
Sun Pharma	
<i>Eli Lilly</i>	CVS Products, Insulin Anti-infective drugs
Kopran	
<i>Synpac Pharmaceuticals</i>	Penicillin-G Bulk Drugs
Cadila Healthcare	
<i>Atlanta Pharma</i>	Intermediates for Pantoprazole Gastrointestinal & C Products
Biocon	
<i>Bristol Myers Squibb</i>	Bulk Drugs

Source: Pharmaceuticals Export Promotion Council of India

Tabular Chart 1 explains the joint collaboration between multinational companies and Indian companies for product development through CRAMS (Contract Research and Manufacturing Services). This is very encouraging to note that foreign multinationals are building trust on Indian Pharmaceutical Companies for product development through quality Research & Development (R&D) activities.

2. Review of Literature

A number of literatures have been studied to serve our purpose out of which a few have been mentioned as under.

Susan E. Feinberg, Sumit K. Majumdar (2001) in their joint study entitled “Technology Spillovers from Foreign Direct Investment in the Indian Pharmaceutical Industry” examine whether knowledge spillovers from MNCs' local R&D activities benefit domestic firms in the Indian pharmaceutical industry for the period of 1980-1994 or not? They have illustrated that in a policy , environment that restricted FDI and provided weak intellectual property protection, they have also found that only significant R&D spillovers in the Indian pharmaceutical sector were between MNCs and each other.¹

K. Sankaran (2002) in his study entitled “Financial performance evaluation of pharmaceutical companies in India” discusses the comparative study between the Indian origin pharmaceutical companies and Multi National Companies (MNCs). In their study they have considered Return on Assets (ROA) and Return on Equity (ROE) as explanatory or independent variables. The study shows that the performance of MNCs' is better than the Indian pharmaceutical companies.²

In the study conducted by Shyama V Ramani (2002) entitled “Who is interested in biotech? R&D strategies, knowledge base and market sales of Indian biopharmaceutical firms” addresses three main questions on Indian pharmaceutical firms that have integrated biotechnology in their marketing, production or research activities: (i) What kind of labour stocks of the knowledge base have an impact on market sales? (ii) Which components of the R&D strategy are strategic substitutes and which are strategic complements? (iii) What are

the distinguishing features of firms that have already integrated biotechnology in their research activities? The study also shows that market sales are an increasing function of qualified labour stocks. Internal R&D and foreign collaborations are strategic substitutes, while patents and publications are strategic complements. Firms that are active in biotechnology research are likely to be younger and implementing more aggressive learning strategies.³

In the study conducted by Jaya Prakash Pradhan (2003) entitled “Liberalization, Firm Size and R&D Performance: A Firm Level Study of Indian Pharmaceutical Industry” indicates that competitive pressure generated by liberalization has worked effectively in pushing Indian pharmaceutical firms into R&D activity. A host of firm characteristics like firm age, size, profitability, intangible assets, export orientation and outward foreign direct investment have been also found to be important determinants of innovative activity in the industry.⁴

The study conducted by Dhar & Gopakumar (2006) entitled “Post-2005 TRIPS scenario in patent protection in the pharmaceutical sector: The case of the generic pharmaceutical industry in India” provides analysis to indicate the performance of the firms in the Indian pharmaceutical industry following the changes in the patent regime necessitated by the Agreement on TRIPS. The study shows that the R&D spending of some of the leading firms, in particular, Ranbaxy and Dr Reddy's has shown increase in Post- TRIPS period. As a result, R&D intensities of the firms have improved significantly.⁵

Sunil (2006) in his study entitled “Proximate and distant implications of TRIPS compliance: India” undertakes a detailed mapping out of the

sectoral system of innovation of India's pharmaceutical industry. The study shows that the TRIPS compliance of the intellectual property right (IPR) regime has not reduced the innovation capacity of the domestic pharmaceutical industry which has visualized an increase in both research budget and patenting.⁶

In the study entitled "Effects on the Pharmaceutical Industry and Access to Drugs" conducted by Sheena Reddy (2006) shows that the growth in R&D for larger pharmaceuticals is greater than the growth for the general pharmaceutical sector. The study has also shown that larger pharmaceuticals have the resources to devote more investment for R&D and can afford to think about the future. Smaller pharmaceuticals do not have these resources and might not be able to survive in the market.⁷

Jaya Prakash Pradhan (2006) in his study entitled "Global Competitiveness of Indian Pharmaceutical Industry: Trends and Strategies" found that strategic government policies were the main factors that transformed the status of the Indian pharmaceutical industry from a mere importer and distributor of drugs and pharmaceuticals to an innovation-driven cost-effective producer of quality drugs. The researcher also has expressed that India emerged as one of the fast growing pharmaceutical industry in the world with growing trade surpluses and exports.⁸

Chaudhuri (2007) in his study entitled "Is Product Patent Protection Necessary in Developing Countries for Innovation? R&D by Indian Pharmaceutical Companies after TRIPS" mentioned that R&D expenditure has dramatically increased for a segment of the Indian pharmaceutical industry after TRIPS came into effect. It is not only that the amount of R&D expenditure has increased, but there has been a drastic shift in the structure of R&D

activities of the Indian companies. He also has explained that in earlier the activities were primarily engaged with the development of new processes for manufacturing drugs, now they are also involved in R&D for new chemical entities (NCE).⁹

Sougata Ray, Raveendra Chittoor (2007) in their joint study entitled "Internationalization paths of Indian pharmaceutical firms - A strategic group analysis" proposes a conceptual model of internationalization for emerging economy firms through a combination of exploitation and exploration strategies along the dimensions of products and markets. They also have discussed that firms that are able to supplement the conventional exploitation strategies with exploration through new products and new markets, by taking advantage of increasingly liberalized economies, could emerge as third-world multinationals with capabilities that could potentially challenge even MNCs from the developed world.¹⁰

3. Research Gap

Based on the review of existing literature, it is found that in India there were limited studies on the Research & Development (R&D) activities of MNC Subsidiaries Pharmaceutical Companies operating in India on their financial performance. Neither of the studies so far conducted in India dealt with the relationship between Research & Development (R&D) activities and financial performance.

4. Theoretical Foundation of Study

The global pharmaceuticals industry is highly research intensive and innovative firms spend on average about 15 per cent to 24 percent of their sales turn over in R&D. With the change in the Government of India's (GOI) approach to

the private sector and the creation of new incentive mechanisms (product patent rights), the R&D intensity began to increase from 2000-01 and reached its peak in 2005-06 followed by the amendment of India Patent Act 2005. This increase has entirely been accounted for by the private sector inclusive of subsidiaries of Multinational (MNC Companies) operating in India.

The rapidly changing economic, trade and intellectual property scenario, nationally and internationally poses many challenges including the challenge of becoming leaders and competitors globally. This necessitates a shift in the approach of pharmaceutical industry to move away from manufacturing only known drugs through innovative process routes to discovering and commercialising new molecules.

5. Objective of the Study

The objective of our study is mentioned in the following.

1. To study the relationship between research & development activities and financial performance of Indian Pharmaceutical Companies.

6. Hypothesis

We are interested in observing whether Research & Development (R&D) activities have relation with financial performance or not. Research & Development (R&D) activities is measured by Research & Development Expenses and Financial Performance is being measured by Sales Turnover.

With respect to the research presented above, we propose the following hypothesis.

H01 : Research & Development (R&D)

activities have no relation with Sales Turnover.

H11 : Research & Development (R&D) activities have relation with Sales Turnover.

7. Research Methodology

A research methodology is the specification of methods and procedures for acquiring the information needed. It is the over-all operational framework of a study that stipulates what information is to be collected from which sources by what procedures. In the following complete step wise procedures have been discussed which have been followed by the researchers in a systematic and scientific manner.

7.1 Data Collection

The study is based on the secondary data only. The data relating to Sales Turnover, Research & Development Expenses, Advertisement Expenses, Marketing Expenses, Capital Intensity, Leverage Ratio, and Operating Expenditure to Total Assets Ratio pertain to subsidiary companies of different Multinational Companies (MNCs) listed in India's National Stock Exchange (NSE) have been collected from capitalline corporate database, annual reports, corporate brochures and press release.

The name of the subsidiary of Multinational (MNC) Pharmaceutical Companies considered for the study is shown in the following with the help of Table - 1

Table 1: List of Subsidiary of Multinational (MNC) Pharmaceutical Companies

#	Company Name
1	Pharmacia Health
2	Astrazeneca Phar
3	Boehringer-Merge
4	Abbott India
5	Burroughs Wel -M

#	Company Name
6	Wyeth
7	Merck
8	Smith. B. P (Mer)
9	Fulford (India)
10	Glaxosmit Pharma
11	Novartis India
12	Sanofi India
13	Organon (India)
14	Parke Davis (I)
15	Pfizer
16	WyethLab(Merged)
17	Solvay Pharma.
18	Fres.Kabi Onco.
19	Merck Specialiti
20	Makson Pharma.
21	Sandoz Pvt
22	Holden Medical
23	Astellas Pharma
24	Abbott Healthcar
25	Reckitt Ben.Hea.
26	Claris Inject.

Source: Capital Line Database

7.2 Sampling Technique and Sample Size

In our study total number subsidiaries of Multinational (MNCs') pharmaceutical companies operating in India have been considered as Population Size. After a careful overview of the annual reports of different pharmaceutical companies, we have identified 52 MNC Subsidiaries companies operating in India. Among them 26 companies have been incurring Research & Development (R&D) Expenditure regularly. Thus we consider only 26 companies in our study based on the Stratified Sampling Technique.

The size of the sample used for the study is

furnished below.

Table 2: Sample Size

Company Type	MNC Subsidiaries' (Operating in India)
Total No of Companies (SAMPLE)	26
Total Number of Years (1995-2015)/ Study Period	21
Total Number of Observation	546 (26 x 21)

In the above mentioned table we can find the total number of observation for the study is 546 which is the product of 26 subsidiaries of Multinational (MNC) Pharmaceutical companies and Total Number of Years (1995 – 2015) i.e. 21 years considered for the study.

7.3 Study Period

We have selected the study period from 1995 to 2015 for the following reasons.

- A. To develop a New Molecular Entity (NME) or New Chemical Entity (NCE) as part of R&D Activities, long duration is required. Most of the time it takes approximately 15 to 20 years.
- B. In 2005, India fully implemented the product patent regime in the country and The Patents (Amendment) Act, 2005 is the third of three amendments to the Patents Act of 1970, to bring India's patent regime into compliance with the WTO (World Trade Organization) TRIPS (Trade Related Intellectual Property Rights) Agreement.
- C. To obtain better measure of Research & Development (R&D) activities on Financial Performance during pre patent amendment and post patent amendment as well as to get the combined effect.

8. Variables Specification and Empirical Model

Variable Specification

To establish the relationship between Financial Performance and Research & Development Activities following variable names had been used under the purview of Dependent Variable (Y) and Independent Variable (X).

Nomenclature of the Variables with detailed explanation is furnished with the help of a table in the following.

Table 3: Variable Specification

Sr. No.	Variable Code	Variable Description	Variable Symbol	Variable Type	Measurement	Mathematical Expression
1	Y1	Sales Turnover	ST	Dependent	Total Sales in a particular year.	Sales Turnover (LN will be used)
2	X1	Research & Development Intensity	RDI	Independent	Research & Development Expenditures (RDE) as percentage (%) on Total Sales in the given year.	Research & Development Expenditure / Net Sales
3	X2	Advertising & Marketing Intensity	AMI	Independent	Advertising & Marketing Expenditure as percentage (%) on Total Sales in the given year.	Advertising & Marketing Expenditure / Net Sales
4	X3	Capital Intensity	CI	Control Variable	Fixed Assets as percentage (%) of Total Sales in the given year.	Fixed Assets / Net Sales
5	X4	Leverage Ratio	LR	Control Variable	Debt as a percentage (%) of Equity in the given year.	Debt / Equity
6	X5	Operating Expenditure to Total Assets Ratio	OER	Control Variable	Operating Expenditure as a percentage (%) of Total Assets in the given year.	Operating Expenditure / Total Assets

A brief discussion of all above mentioned variables are discussed here in under.

A. Sales Turnover (ST)

Sales turnover is the total amount of revenue generated by a business during the calculation period. The concept is useful for tracking sales levels on a trend line through multiple measurement periods, in order to spot meaningful changes in activity levels. The calculation period is usually one year.

In this study Logarithm (LN) of Sales Turnover as been used.

B. Research & Development Intensity (RDI)

R&D expenses are a type of operating expense and can be deducted as such on a business tax return. This type of expense is incurred in the process of finding and creating new products or services.

In this study variable Research & Development Intensity (RDI) has been used by applying the following formula.

$$\text{RDI} = \frac{\text{Research \& Development Expenditure}}{\text{Net Sales}}$$

C. Advertising & Marketing Intensity (AMI)

Advertisement Expenses

A prepayment of a future advertisement would be recorded as an asset until the advertisement is run. The reason advertising is recorded as an expense and not an asset is the problem of measuring the future value of an advertisement. As a result, advertising expenditures will be reported as expenses in the accounting period in which the ads are run.

Marketing Expenses

Marketing Expenses are expenses that directly relate to the selling of a product or service. The total cost associated with delivering goods or services to customers. The marketing cost may include expenses associated with transferring title of goods to a customer, storing goods in warehouses pending delivery, promoting the goods or services being sold, or the distribution of the product to points of sale.

In this study variable Advertisement and Marketing Intensity (AMI) has been used by applying the following mathematical expression.

$$\text{AMI} = \frac{(\text{Advertisement Expenses} + \text{Marketing Expenses})}{\text{Net Sales}}$$

D. Capital Intensity (CI)

Capital intensity ratio of a company is a measure of the amount of capital needed per rupee of revenue. It is calculated by dividing total assets of a company by its sales.

The following mathematical expression has been used to measure Capital Intensity in our study.

$$\text{Capital Intensity} = \frac{\text{Fixed Assets}}{\text{Net Sales}}$$

E. Leverage Ratio (LR)

Leverage Ratio or Debt/Equity Ratio is a debt ratio used to measure a company's financial leverage, calculated by dividing a company's total liabilities by its stockholders' equity. The D/E ratio indicates how much debt a company is using to finance its assets relative to the amount of value represented in shareholders' equity.

In our study following mathematical expression has been used to measure the Leverage Ratio (LR).

$$\text{Leverage Ratio} = \frac{\text{Debt}}{\text{Equity}}$$

F. Operating Expenditure to Total Assets Ratio (OER)

An operating expense, operating expenditure, operational expense, operational expenditure or Opex is an ongoing cost for running a product, business, or system.

The following mathematical expression has been used to measure Operating Expenditure to Total Assets in our study.

$$\text{Operating Expenditure to Total Assets Ratio} = \frac{\text{Operating Expenditure}}{\text{Total Assets}}$$

Empirical Model

We are proposing herewith an empirical model by incorporating all Dependent, Independent and Control Variables which have already discussed in the previous section. The empirical

model is furnished in the following.

$$\ln Y (ST) = \alpha + \beta_1 RDI + \beta_2 AMI + \beta_3 CI + \beta_4 LR + \beta_5 OER + \mu_i \text{ ----- (1)}$$

Where,

LnY (ST) = Sales Turnover

RDI = Research & Development Intensity

AMI = Advertisement & Marketing Intensity

CI = Capital Intensity

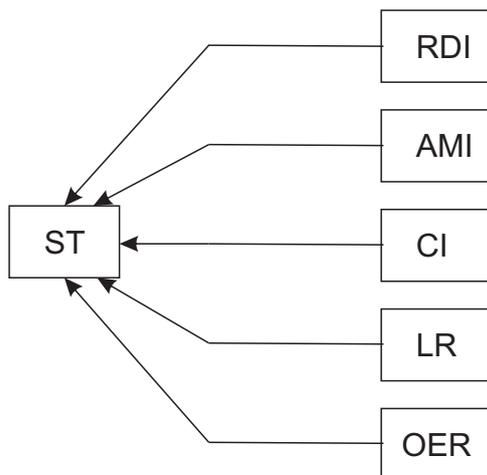
LR = Leverage Ratio

OER = Operating Expenditure to Total Assets Ratio

μ_i = Error Term

The graphical representation of above mentioned proposed empirical model is drawn herein under.

Figure 1: Graphical Representation of Empirical Model



Source: Authors' Own

9. Statistical Tools & Techniques

The study uses following statistical tools & techniques for data analysis and interpretation.

- A. Descriptive Statistics
- B. Correlation Matrix and
- C. Regression Analysis

We have used Application Software STATA for data analysis & interpretation for

accomplishment of the research objective.

To achieve the objectives of this study we have made an analysis on the basis of collected data. The results on the basis of secondary data interpretation and analysis are following as under:

10. Data Analysis & Results

Table 4 : Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
ln_st	546	5.490476	1.313682	1.78	8.16
rdi	546	.0054945	.0222297	0	.24
ami	546	.0241758	.0272561	0	.14
ci	546	.0065201	.0258289	0	.19
lr	546	.8518681	2.562147	0	15.93
oer	546	.0060623	.0162793	0	.11

Source : STATA Output (Authors' Own Calculation)

From the above mentioned Table 4, we can visualize that the total number of observation are 546. The mean values of Ln of Sales Turnover (Ln_ST), Research & Development Intensity (RDI), Advertisement & Marketing Intensity (AMI), Capital Intensity (CI) , Leverage Ratio (LR) and Operating Expenditure To The Toal Assets Ratio (OER) are 5.49, .005, .024, .006, .851 and .006 respectively. The Standard Deviation of Ln of

Sales Turnover (Ln_ST), Research & Development Intensity (RDI), Advertisement & Marketing Intensity (AMI), Capital Intensity (CI), Leverage Ratio (LR) and Operating Expenditure To The Total Assets Ratio (OER) are 1.31, .022, .027, .025, 2.56 and .016 respectively.

The table has been used to describe Dependent (Ln of ST), Independent Variables (RDI, AMI) and Control Variables (CI, LR, OER) for the study purpose.

Table 5 : Correlation Matrix

	Inofst	rdi	ami	ci	lr	oer
Inofst	1.0000					
Rdi	0.1097*	1.000				
Ami	0.0103		1.0000			
Ci	0.3087*	-0.0272		1.0000		
Lr	0.0000	0.5259			1.0000	
Oer	-0.0854	-0.0606	-0.0536			1.0000
	0.0461	0.1571	0.2110			
	-0.0826	0.0692	-0.1675*	0.2925*		
	0.0537	0.1062	0.0001	0.0000		
	0.1666*	-0.0489	0.1288*	0.0879*	-0.8632	
	0.0001	0.2536	0.0026	0.0400	0.1405	

Source : STATA Output (Authors' Own Calculation)

In the above Table-5 correlation matrix shows the pair wise correlation of all the Dependent (Ln of ST-Sales Turnover), Independent Variable (RDI – Research & Development Intensity, AMI – Advertisement & Marketing Intensity) and Control Variable (CI – Capital Intensity, LR – Leverage Ratio and OER – Operating Expenditure to Total Assets Ratio). There is no such spurious correlation found between the variables in this matrix as all the coefficients falls below 0.80. We can find statistically significant positive correlation between Ln of ST and RDI, AMI, and OER. There is negative significant correlation between Ln of ST and CI. There is statistically positive correlation between LR and CI and negative correlation between LR and AMI. OER has statistically positive correlation with AMI and CI.

Table 6: Regression Result under Fixed Effect Model (FEM)

```

. xtset companycode year
      panel variable:  companycode (strongly balanced)
      time variable:  year, 1995 to 2015
      delta: 1 unit

. xtreg lnofst rdi ami ci lr oer,fe

Fixed-effects (within) regression           Number of obs   =       546
Group variable: companycode                Number of groups =       26

R-sq:  within = 0.1986                      Obs per group:  min =       21
        between = 0.0200                      avg             =      21.0
        overall  = 0.0324                      max             =       21

                                F(5,515)         =      25.52
                                Prob > F           =      0.0000

corr(u_i, xb) = -0.1161
    
```

	Inofst	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
rdi		2.280379	1.386842	1.64	0.101	-.4441838 5.004942
ami		3.769377	1.027727	3.67	0.000	1.750324 5.78843
ci		-9.331772	1.426399	-6.54	0.000	-12.13405 -6.529497
lr		-.0763364	.010018	-7.62	0.000	-.0960177 -.0566552
oer		-1.785942	1.155936	-1.55	0.123	-4.056872 .4849883
_cons		5.522595	.0347781	158.80	0.000	5.45427 5.590919
sigma_u		1.2768141				
sigma_e		.35711422				
rho		.92744814	(fraction of variance due to u_i)			

F test that all u_i=0: F(25, 515) = 235.23 Prob > F = 0.0000

In the above Table – 6 shows the regression results under Fixed Effect Model (FEM). In FEM Model we can see that the effect of Control Variables (CV) CI, LR, and OER have negative effect on Dependent Variable (DV) Sales Turnover (Ln_ST). But the effect is significant only for CI and LR at 1% level. On the other hand the effect is positive for RDI and AMI. The effect of RDI is statistically significant at 10% and the effect of AMI is statistically significant at 1% level. The value of F Statistic is 25.52 and it's corresponding p-value is 0.000 i.e. below the significance level of 0.05. It implies that the model is good fit for interpretation. The value of R Square of this model is 0.03.

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Table 7: Regression Result under Random Effect Model (REM)

```
. xtreg lnofst rdi ami ci lr oer, re
```

```

Random-effects GLS regression           Number of obs   =       546
Group variable: companycode           Number of groups =        26

R-sq:  within = 0.1985                 obs per group:  min =        21
      between = 0.0215                 avg =       21.0
      overall  = 0.0340                 max =        21

Random effects u_i ~ Gaussian          wald chi2(5)    =    127.54
corr(u_i, X) = 0 (assumed)            Prob > chi2     =     0.0000
    
```

lnofst	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
rdi	2.362293	1.379463	1.71	0.087	-.3414042	5.06599
ami	3.905046	1.02407	3.81	0.000	1.897905	5.912187
ci	-9.145401	1.414369	-6.47	0.000	-11.91751	-6.373288
lr	-.0754235	.0099887	-7.55	0.000	-.095001	-.055846
oer	-1.714594	1.155587	-1.48	0.138	-3.979504	.5503158
_cons	5.516419	.2486428	22.19	0.000	5.029088	6.00375
sigma_u	1.254598					
sigma_e	.35711422					
rho	.92505021	(fraction of variance due to u_i)				

```
. estimates store random
```

Source: Stata Output (Authors' Own Calculation)

In case of Table – 7 regression result under REM Model, we can see here also the effect of CI, LR and OER is negative on ST. But the effect is statistically significant in case of CI and LR. Like FEM the effect of RDI and AMI is positive and statistically significant at 10% and 1% level of significance respectively. The value of Chi Square is 127.54 and it's corresponding p-value is 0.000. It implies that the model is good fit as the p-value of chi-square falls below 0.05. The value of R Square of this model is 0.03.

Table 8: Result of Hausman Test

. hausman fixed random

	— Coefficients —		(b-B) Difference	sqrt(diag(v_b-v_B)) S. E.
	(b) fixed	(B) random		
rdi	2.280379	2.362293	-.0819139	.1428727
ami	3.769377	3.905046	-.135669	.0866196
ci	-9.331772	-9.145401	-.1863713	.1848592
lr	-.0763364	-.0754235	-.0009129	.0007662
oer	-1.785942	-1.714594	-.0713478	.0283877

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(5) &= (b-B)' [(v_b-v_B)^{-1}] (b-B) \\ &= 13.91 \\ \text{Prob}>\text{chi2} &= 0.0162 \end{aligned}$$

Source: Stata Output (Authors' Own Calculation)

Table 9: Hausman Test Result Comparative analysis between FEM & REM

Variable	Fixed Effect Model(FEM) Coefficient (P Values)	Random Effect Model (REM) Coefficient (P Values)	Hausman Test
Constant	5.52* 0.000	5.51* 0.000	FEM> REM
RDI	2.28** 0.101	2.36** 0.08	
AMI	3.76* 0.000	3.90* 0.000	
CI	-9.33* 0.000	-9.14* 0.000	
LR	-0.07* 0.000	-0.07* 0.000	
OER	-1.78 0.123	-1.71 0.138	
F Statistic / Chi Square	25.52* 0.000	127.54* 0.000	
R Square	0.03	0.03	

* At 5% Level of Significance ** At 10% Level of Significance

Source: Authors' Own

Table 8 explains the result of Hausman Test and the result is 0.01 which is less than 0.05 and Table-9 explains the detailed comparative Regression Analysis between Fixed Effect Model (FEM) and Random Effect Model (REM). After comparative analysis between the FEM & REM Model, the result of hausman test prefers FEM to REM because the result of hausman test (Prob>chi2) is 0.01 which is less than 0.05.

Regression Result under FEM and REM Model, Performance of Hausman Test after Elimination / Reduction of OER Variable

Table 10: Regression Result under FEM (after elimination / reduction of OER)

```

. xtset company year
      panel variable:  company (strongly balanced)
      time variable:  year, 1995 to 2015
      delta: 1 unit

. xtreg st rdi ami ci lr, fe

Fixed-effects (within) regression              Number of obs   =       546
Group variable: company                      Number of groups =        26

R-sq:  within = 0.1911                      Obs per group:  min =        21
      between = 0.0235                      avg   =       21.0
      overall  = 0.0356                      max   =        21

corr(u_i, Xb) = -0.1059                      F(4,516)        =       30.47
                                          Prob > F         =       0.0000
    
```

st	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
rdi	2.817834	1.433157	1.97	0.050	.0022946 5.633374	
ami	3.436443	1.017368	3.38	0.001	1.437749 5.435136	
ci	-9.293257	1.452706	-6.40	0.000	-12.1472 -6.439312	
lr	-.075647	.0100385	-7.54	0.000	-.0953684 -.0559257	
_cons	5.516949	.0345921	159.49	0.000	5.448991 5.584908	
sigma_u	1.2726234					
sigma_e	.3584329					
rho	.92650407	(fraction of variance due to u_i)				

```

F test that all u_i=0:      F(25, 516) =   240.19          Prob > F = 0.0000

. estimates store fixed
Source: STATA (Authors' Own Calculation)
    
```

Table 11: Regression result under REM (after elimination / reduction of OER)

```
. xtreg st rdi ami ci lr, re
Random-effects GLS regression           Number of obs   =       546
Group variable: company                 Number of groups =        26

R-sq:  within = 0.1910                   Obs per group:  min =        21
      between = 0.0249                                     avg =       21.0
      overall  = 0.0370                                     max =        21

Random effects u_i ~ Gaussian           Wald chi2(4)    =     122.36
corr(u_i, X) = 0 (assumed)              Prob > chi2     =     0.0000
```

st	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
rdi	2.884348	1.423312	2.03	0.043	.0947071	5.673988
ami	3.570532	1.012354	3.53	0.000	1.586354	5.554709
ci	-9.111365	1.438352	-6.33	0.000	-11.93048	-6.292247
lr	-.0748293	.0099961	-7.49	0.000	-.0944212	-.0552374
_cons	5.51146	.2560776	21.52	0.000	5.009557	6.013363
sigma_u	1.2950815					
sigma_e	.3584329					
rho	.92885119	(fraction of variance due to u_i)				

```
. estimates store random
```

Source: STATA (Authors' Own Calculation)

Table 12: Result of Hausman Test

```
. hausman fixed random
```

	Coefficients		(b-B)	sqrt(diag(V_b-V_B))
	(b)	(B)	Difference	S.E.
	fixed	random		
rdi	2.817834	2.884348	-.0665135	.1676924
ami	3.436443	3.570532	-.1340888	.1008858
ci	-9.293257	-9.111365	-.1818915	.2037094
lr	-.075647	-.0748293	-.0008178	.000922

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(4) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 2.53 \\ \text{Prob>chi2} &= 0.6386 \end{aligned}$$

Source: STATA (Authors' Own Calculation)

Table 13: Hausman Test Result

Comparative Analysis between FEM & REM
(after elimination / reduction of OER)

Variable	Fixed Effect Model Coefficient (P Values)	Random Effect Model Coefficient (P Values)	Hausman Test
Constant	5.51* 0.000	5.51* 0.000	REM > FEM
RDI	2.81* 0.050	2.88* 0.043	
AMI	3.43* 0.001	3.57* 0.000	
CI	-9.29* 0.000	-9.11* 0.000	
LR	-0.07* 0.000	-0.07* 0.000	
F Statistic / Chi Square	30.47* 0.000	122.36* 0.000	
R Square	0.03	0.03	

Source: Authors' Own

The explanation of above mentioned Table-10, Table – 11, Table – 12 and Table – 13 is furnished here in under. We have already observed both in the FEM and REM Regression Result that variable OER – Operating Expenditure to Total Assets Ratio is unable to create statistical significant impact on the Dependent Variable (DV) Sales Turnover (Ln_ST) since the P-Value of OEM in the FEM Model was 0.12 and REM Model was 0.13. In both these cases P-Values were greater (>) than 0.05 level of significance. In the next stage, to find out better effect we have eliminated variable OER – Operating Expenditure to Total Assets Ratio from both FEM and REM Models because it has no statistical significant effect on ST. After reduction of variable the value of f statistics is

30.47 and its corresponding p-value is 0.000. It means that this model is better fit than the previous model. If we go through the coefficients then we can find that the effect has been increased for RDI hence the p-value has been decreased from the previous model (earlier 0.10, now 0.05). On the other hand the effect of AMI has been decreased hence the p-value has been increased in this FEM Model (earlier 0.000, now 0.001). The effect of CI has been decreased little but its corresponding p value (in both the cases 0.000) remains unchanged. All the effects are statistically significant. The value of R Square of this model also remains unchanged (in both the cases 0.03). In this study we could able to avail a very small sample size i.e. 26 MNC Subsidiary Companies operating in India and have tried to figure out the impact of R&D Expenditure on the Financial Performance. All sorts of Research & Development (R&D) Expenditure viz. High, Moderate and Low have been considered for this study. All the Independent Variable (IV), Control Variable (CV) and Dependent Variable (DV) values of pre patent amendment act period (1995-2005) and post patent amendment act period (2005-2015) have also been considered though in the post patent amendment act era there were adequate values than the pre patent act amendment era to measure the impact as well as to answer the question which was framed and the question was: whether at all there is any presence of relationship between Research & Development (R&D) Expenditure and Financial Performance? During conducting the literature review we have observed that many researchers have stated that there is no relationship at all between R&D Expenditure and Financial Performance, it has also been seen that so many corporate personalities and management consultants are not expressing their positive views for Research &

Development Expenditure and stating that R&D Expenditure is wastage of company's financial resources. Our objective was to see if there was a small, but reliable relationship in the model. In our model with the help of Chi Square Value, respective p values of different Independent Variables (IV) and Control Variables (CV), we have tried to establish the statistically significant impact on the Dependent Variable (DV). With the 0.03 or 3% R Square value we could able to establish a small but meaningful relationship by incorporating the belief of "Small is Beautiful" and have carried forward the study which in turn will be an encouraging note for the pharmaceutical companies taking R&D Expenditure in their business model to bring innovation by coming up with New Chemical Entity (NCE) and New Molecular Entity (NME) through the Research & Development (R&D) activities.

This model is better fit than the previous FEM Model also because of the degrees of freedom has been decreased from previous as the number of independent variables has been decreased.

In case of REM the effect of RDI also increases hence the p-value decreases (earlier 0.08, now 0.04) and the effect of AMI and CI decreases but their corresponding p value remains the same (in both the cases 0.000). The Chi Square is decreased (earlier 127.54, now 122.36) in REM Model from previous but its corresponding p-value remains the same (in both the cases 0.000). Here also all the effects are statically significant.

Interestingly here the hausman test picks REM Model as preferred model. Hence from the results of hausman test and REM Model, we can reject the following null hypothesis -

H_{01} : Research & Development (R&D) activities have no relation with Sales Turnover. and accept the following alternative hypothesis -

H_{11} : Research & Development (R&D) activities have relation with Sales Turnover.

We can also say that RDI and AMI have positive effect on ST. On the other hand CI and LR have negative effect on ST.

11. Conclusion and Implications

After analyzing the data, we may infer that Research & Development Expenses (RDI) has significant impact on Sales Turnover (ST) which means that Research & Development (R&D) activities of different subsidiaries of Multinational (MNC) Pharmaceutical Companies operating in India are having a direct impact on the financial performance and propositions and hence these pharmaceutical companies have to concentrate on both RDI and AMI as they help to increase the sales turnover in the form of financial performance. On the other hand, these pharmaceutical companies have to take a serious call for managing both Capital Intensity (CI) and Leverage Ratio (LR) in an effective and efficient manner in order to gain the positive effect for sustainability and future growth.

12. Scope for Further Research

We have carried out the research by taking MNC Pharmaceutical Companies operating in India for the period of 1995 to 2015 (21 years). Social science researcher fraternities can carry forward further research in any of the following areas.

Impact of R&D can also be measured in the different industries other than Pharmaceutical Industry Type. Some of the non pharmaceutical industry / company types are mentioned in the following.

A. Information & Communication Technology and Wireless Technology

- B. Manufacturing Technologies
- C. Material Energy
- D. Bio Energy
- E. Water Technologies

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Comparative Analysis of Old Initiatives & New Initiatives Offered under Financial Inclusion

* Gayathri N M

Abstract

The present paper provides a platform to understand the different kinds of initiatives available to the people in Financial inclusion and its operation process towards rural people and for those people to whom Financial inclusion is necessary, so in order to collect this information A Researcher has selected 30 members from SHGs and 50 respondents who know about the initiatives in Financial inclusion. It particularly focused on benefits of rural people through financial inclusion about monetary and non-monetary facilities and also collects information about how this particular Financial inclusion contributes towards economic growth and development of standard of living in village areas, Finally the detail information about schemes such as old initiatives and new initiatives offered by the Banks in the name of Financial inclusion towards rural people has explained. Therefore, small attempt have been made to understand the benefits of rural people through financial inclusion and also make a comparative analysis between old initiatives and new initiatives to test the knowledge in the minds of the rural people towards these initiative. SHGs play an important role in economic development today through providing financial inclusion to the rural people. The structured interview conducted to the respondents and SHGs members in Chickmagaluru region and the data collected will be arranged properly for the findings. It concentrates on the new emerging challenges, opportunities and issues in the field of Economics. Finally, it makes an attempt to offer suggestions to analyze the improvement of various schemes offered by the banks.

1.1 Introduction

India has seen historic progress and growth in the past decade. While the growth story has been impressive, there are causes for concern on other dimensions. We have a long way to go in addressing concerns of absolute poverty. "Nearly forty years after nationalization of banks, 60% of the country's population do not have bank accounts and nearly 90% do not get loans," India has been currently the second-highest number of financially excluded

households in the world. While, 40% of India's population have bank accounts, and about 10% have life insurance cover, a meagre 0.6% has non-life insurance cover (RBI report 2013 March). Financial services actively contribute to the humane & economic development of the society. These lead to social safety and protect the people from economic shocks.

Hence, each and every individual should be provided with affordable institutional financial products/services popularly called "Financial

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Inclusion". Low-income Indian households in the informal or subsistence economy often have to borrow from friends, family or money lenders. They have little awareness and practically no access to insurance products that could protect their financial resources in unexpected circumstances such as illness, property damage or death of the primary breadwinners.

Unrestrained access to public goods and services is an essential condition of an open and efficient society. It is argued that as banking services are in the nature of a public good, it is essential that availability of banking services to the entire population without discrimination is the prime objective of public policy. Expectations of poor people from the financial system is security and safety of deposits, low transaction costs, convenient operating time, minimum paper work, frequent deposits and quick and easy access to credit and other products, including remittances suitable to their income and consumption.

It is now well understood that commerce with the poor is more viable and profitable. The provision of uncomplicated, small, affordable products can help bring low-income families in to the formal financial sector. Taking into account their seasonal inflow of income from agricultural operations, migration from one place to another, seasonal and irregular work availability and income, the existing financial system needs to be designed to suit their requirements. Mainstream financial institutions such as banks have an important role to play in this effort, not as a social obligation, but as a pure business proposition.

Access to finance by the poor and vulnerable groups is a prerequisite for poverty reduction and social cohesion. This has to become an integral part of the efforts made by banks to

promote inclusive growth. In fact, providing access to finance is a form of empowerment of the vulnerable groups.

In developed countries, banking system plays prominent role in the formal financial system and serves most of the population but in developing countries, mainly the low-income group, which is a large segment of the society, excludes from banking services, as a result, poor people have to depend either on their own sources or informal sources of finance at high cost. In developing countries, majority of poor public is not a part of formal financial sector and excludes from financial activities like access to credit, savings and insurance, India is not exception of it. India has a various types of people who are financially excluded like women, landless laborers', marginal farmers, slum dwellers, small vendors, migrants etc.

Introduction to Financial Inclusion

Financial Inclusion is a tool for development and part of economic growth process. Development of rural India is a key for economic development. Banking facilities is one of the very important sources of economic development. The timely availability of credit at an affordable cost has a big role to play in contributing to the well being of the weaker sections of the society. Financial Inclusion is the delivery of financial services to all the people in a fair, transparent and equitable manner at affordable cost. Financial services permit individuals and households to manage the risk and uncertainties to save risk free, borrow on better terms, to invest in a business venture or property and to cope with unforeseen expenses.

Financial inclusion may be defined as, "the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and

low income groups at an affordable cost". Financial products & services are identified as basic banking services like deposits accounts, institutional loans, access to payment, remittance facilities & also life & non life insurance services.

The following are the denotation & connotation of financial inclusion in India.

- Affordable credit
- Savings bank account
- Payments and Remittances
- Financial advice
- Credit/debit cards
- Insurance facility
- Empowering SHGs (selfhelp groups)

An inclusive financial system facilitates efficient allocation of productive resources and thus can potentially reduce the cost of capital. An all-inclusive financial system enhances efficiency and welfare by providing avenues for secure and safe saving practices and by facilitating a whole range of efficient financial services like easy day to-day management of finances, safe money transfer etc. The government of India as well as the Banking Industry has recognized this imperative and has undergone fundamental changes over the last two decades.

In fact, in order to address the issues of financial inclusion, the Government of India constituted a "Committee on Financial Inclusion" under the Chairmanship of Dr. C. Rangarajan. Not only in India, but financial inclusion has become an issue of worldwide concern, relevant equally in economies of the underdeveloped, developing and developed nations. Building an inclusive financial sector has gained growing global recognition bringing to the fore the need for development strategies that touch all lives

instead of a select few.

Providing various financial services like, loans, insurance, payments, remittances and financial advisory services to those who have no access to the formal financial structure of the country is the basic objective of Financial Inclusion. Despite the rapid spread of banking over the years, significant segment of the population, predominantly in the rural areas, is excluded from the formal financial system. It is well-known that poor people, potential entrepreneurs, small enterprises, and others are excluded from the financial sector which leads to their marginalization and denial of opportunity for them to grow and prosper.

The essence of financial inclusion is trying to ensure that a range of appropriate financial services is available to every individual and enabling them to understand and access those services. Apart from the regular form of financial intermediation, it may include a basic no-frills banking account for making and receiving payments, a savings product suited to the pattern of cash flows of a poor household, money transfer facilities, small loans and overdrafts for productive, personal and other purposes, insurance (life and non-life)etc., while financial inclusion, in the narrow sense, may be achieved to some extent by offering any one of these services, the objective of comprehensive financial inclusion would be to provide a holistic set of services encompassing all of above.

The Government of India and the Reserve Bank of India have been making concentrated efforts to promote financial inclusion as one of the important national objectives of the country. Some of the major efforts made in the last five decades include - nationalization of banks, building up of robust branch network of scheduled commercial banks, co-operatives and

regional rural banks, introduction of mandated priority sector lending targets, lead bank scheme, formation of self-help groups, permitting BCs/BFs to be appointed by banks to provide door step delivery of banking services, zero balance accounts, etc. The fundamental objective of all these initiatives is to reach the large sections of the hitherto financially excluded Indian population.

With the arrival of banking technology and realization that poor are bankable with good business prospects, financial inclusion initiatives will strengthen financial deepening further and provide resources to the banks to expand credit delivery. The banking technology initiatives meant for financial inclusion should be collaborative and innovative with an objective to reduce the transaction costs.

Thus, financial inclusion along with the Governmental developmental programmes will lead to an overall financial and economic development in our country and as in the case for most developing countries, extending the banking services to everyone in the country will be the key driver towards an inclusive growth.

1.2 Statement of the Problem

The growth of Banks participation in the rural development through increased financial services in the post-independence and post nationalization era was significant. It is the part and parcel of the socio-economic development efforts in rural areas. Nevertheless, with a vast network of nationalized banks, private commercial banks, RRBs, Co-Operative Banks and other financial institutions no significant progress could be achieved on the increased poverty position existing in rural India. More than 3 billion people do not have access to the basic financial services essential for their sustenance. Micro financing programmes through SHGs have the potential to minimize

the problem of inadequate access of banking services to the poor. The Self Help Groups and Bank linkage Programmes in terms of physical targets, apparently seems to have produced desired results. But not many studies are available to assess the pros and cons of SBLP. Hence, the present study is a small attempt bridge the aforesaid gap.

1.3 Objectives of the Study

- To evaluate the progress and current status of Financial Inclusion in Chikmagalure (Rural area).
- To make a detailed note on old initiatives and new initiatives.
- To examine the role of banking system in extending services for Financial Inclusion.
- To study the role of SHGs and Micro Finance in Financial Inclusion.
- To analyze the customers' comparative opinion between Old initiatives and new initiatives.
- To suggest the future prospects of Financial Inclusion.

1.4 Scope of the Study

The main aim of the present study is to know the role of banks in providing financial services to the large section of the vulnerable groups of the society to know the impact on people through Financial inclusion and this study is confined only to Kaveri Grameena Bank, Chikmagalure.

1.5 Sources of Data

The study is done based on the collection of primary and secondary data.

- **Primary Data:** The primary data is collected through personal interaction with the customers who are benefited to financial inclusion

- **Secondary Data:** Secondary Data is collected by referring several articles, books on Micro Finance, Self Help Groups, downloading certain PDFs from the site, by visiting the bank's website, through annual reports, magazines, and journals and by visiting libraries.

1.6 Sample Design

For this study out of many existing banks in the Chikmagalur region, Kaveri Grameena Bank is selected as a unit of study. To study the financial services provided by this bank to the priority sector, a representative sample of 30 members of SHGs (which are linked with Kaveri Grameena bank) is chosen through random sampling technique.

1.6 Tools and Techniques of the Study

For the present study only tables are used for analyzing and interpreting the collected data.

1.7 Period of the Study

For the purpose of this study Researcher has taken 18 months to complete the research paper work.

State of Financial Inclusion in Rural India

Even after 6 decades of independence, banking facilities has not reached to rural and unprivileged sector of the society. This led to financial gap and instability among the rural people. Now- a -days Government and RBI are formulating various policies to build the financial strength in Rural India through Financial Inclusion.

Need For Financial Inclusion Due to absence of proper banking avenues, people in rural India are not able to channelize their savings. Through Financial Inclusion saving habit can be developed by educating people to utilize their funds in various Financial Instruments rather

than investing in building, lands and bullion etc. Secondly, Absence of formal credit channels, farmers and deprived section of society are dependent mainly upon the private money lenders who charge very high interest rates. This type of money lending does not result in increase in GDP in the country. By providing easy finance through formal channels like banks, micro-finance institutions and co-operative credit societies entrepreneurial spirit of the population can be developed that will bring prosperity in the society.

RBI set up Khan Commission in 2004 to expand the reach of financial inclusion. The significant recommendations were implemented through midterm policy in 2005-06 which includes Opening of a basic "No Frill Bank Account". It is a type of bank account, with low or zero balance with minimum formalities and relaxed KYC (Know Your Customer) norms. RBI came up with this concept because poor people cannot open regular bank account having requirement of minimum balance i.e. Rs 1000/- , Rs 5000/- etc. The Account can be opened and maintained with a minimum initial deposit of Rs. 5/- having no penalty charges in case the minimum balance reaches to zero. To avail easy credit, General Credit Cards (GCC) should be issued to the poor section of the society. Commercial banks are advised to make use of intermediaries such as Non Govt. Organizations, Micro Finance Institutions and Self Help Groups to provide financial services to the unprivileged section of the society.

1 Role of Self Help Groups in Financial Inclusion in India

The main development approach for NGOs working with local communities that has emerged over the past 30 years is through self-help groups (SHG). This approach originated in Karnataka in the mid-1970s, has since been

widely adopted by NGOs across the country and is now strongly supported by government through its national five-year plans. The SHG movement distinguishes itself from other models of social organization for development programmes. It is less about the delivery of services and more about the empowerment of group members to be able to make and act on expanded choices, and so advance their interests.

Self Help Group is a small association of poor people, which form voluntary by the people from the same social and economic background. They have a purpose to solve their common problems through mutual help. These groups promote small savings among its members and such savings are deposited in a bank in the name of SHG as collective fund. This collective fund is accumulated by contributing small savings on a regular basis by each member of the group. The group fund is then provided to their members as loan, with a nominal interest. The loan amount is small, frequent and for short period and this interest is very less than normal interest charged by informal source. After period of six months, groups become eligible to avail government schemes if their functioning found smooth and satisfactory.

SHGs have low transaction cost and very low risk cost for banks. In India, SHGs are encouraged towards saving within the group, giving loans to their members, managing their savings with a bank and finally, negotiating with the bank for credit facilities. SHGs have revealed that there is no need of loan at subsidized rate of interest to poor people on liberal terms but they may become efficient managers of finance and credit if the adequate credit is available for their enterprises. Availability of timely and adequate finance is necessary for them rather than subsidies.

In India, the concept of micro finance encourages SHGs as means of savings and loan providers. Micro finance has to act proactively not for financial inclusion but also has to work to reduce dependence of poor borrowers on different informal financial sources. As defined by RBI, microfinance as the “provision of thrift, credit and other financial services and products of very small amounts to the poor enabling them to raise their income levels and improve living standards”.

There are two popular approaches of microfinance sector: SHG-bank linkage (SBL) and microfinance institutions (MFI). In 1992, NABARD launched Self help group Bank linkage programme to fill the gaps between banking sector and excluded poor segment. In terms of outreach, it is a largest micro finance programme in the world and many other countries are keeping replicating this model.

Through this model, the poor borrowers are able to take advantages of formal sources of finance by actively participating in different financial activities, which can work towards effective inclusion of excluded poor people into the formal banking system. SHGs create positive impact on lives of poor households in a significant way. They reduce poverty through increases in income and enable the poor to build their assets. Savings play a critical role in the livelihoods of the poor households.

One of the distinctive features of the SHGs is that it is a savings-led model providing opportunities to the members to pool their small savings within the group. Many studies have shown that creation of a safe opportunity for savings, on which interest is earned, is an attractive feature of SHGs, which had led to significant promotion of savings.

After financial sector reforms in 1991, there are following linkage models used by banks to finance SHGs.

Model I

Banks provide finance to NGOs for lending to SHGs.

Model II

Banks provide finance directly to SHGs for lending to micro entrepreneur.

Model III

Banks provide finance directly to SHGs for lending to micro entrepreneur with the intervention of NGO as facilitators.

Model IV

Bank provides finance directly to individual members of SHGs upon recommendations of the SHGs and NGO.

Indian rural credit delivery structure comprising commercial Banks, Regional Rural Banks and Cooperative Banks with a large network of more than 1,53,000 retail credit outlets. But reaching the excluded poor is still a difficult task. On the other hand informal source of finance (Sahukars) continues to play the important role as main agency. The credit requirements of the rural poor cannot be determined on project lending approach as in formal sector, financial requirement of rural poor is very small, frequent and unpredictable. To meet out the requirement of such rural poor, there is a need of an informal credit supply system, which can be developed through SHGs. The introduction of the “Kishan Credit Cards” scheme is also useful for expanding the scope of lending to agriculture by commercial banks and strengthening of rural credit system as it has its access even in the remotest and backward area.

Analysis and Interpretation Respondents' Comparative Opinion between Old Initiatives and New Initiatives

	Feel not Worthy		Feel Neutral		Feel Worthy		Feel Fairly Worthy	
	No. of Respondents	Percentage (%)						
Priority sector lending	01	03.33	-	-	15	50	14	46.67
Nationalisation of public sector bank	06	20	12	40	10	33.33	02	06.67
Establishment of regional rural bank	04	13.33	08	26.67	14	46.67	04	13.33
Service area approach	02	06.67	09	30	15	50	04	13.33
Establishment of NABARD	02	06.67	05	16.67	13	43.33	10	33.33
Total	10	33.33	08	26.67	07	23.33	05	16.67

Source: Survey Data

From the above table it is clear that out of 30 respondents, 20% and 13.33% of the respondents are feel not worthy about Nationalization of public sector bank and Establishment of regional rural bank respectively. 40% and 30% of the respondents are feeling neutral about Nationalization of public sector bank and Service area approach respectively. 50% and 46.67% of the respondents are feeling worthy about Establishment of regional rural bank and

Service area approach respectively. 46.67% and 33.33% of the respondents are feeling fairly worthy about Priority sector lending and Establishment of NABARD rural bank respectively

It can be interpreted that majority of the respondents are very familiar with the Establishment of regional rural bank and Service area approach respectively which clearly indicates that both of these initiatives are using by most of the people

Percentage of Respondents' Opinion Towards New Initiatives

	Very Interested		Fairly Interested		Not Very Interested		Not at all Interested	
	No. of Respondents	Percentage (%)	No. of Respondents	Percentage (%)	No. of Respondents	Percentage (%)	No. of Respondents	Percentage (%)
Pradhan mantrijanadhanyojana	11	36.67	9	30	10	33.33	-	-
Pradhan mantra jeevanjyothibimayojana	8	26.67	15	50	4	13.33	3	10
Pradhan matrisurakshbimayojana	10	33.33	10	33.33	8	26.67	2	6.67
Atal pension yojana	12	40	14	46.67	7	23.33	1	3.33

Source: Survey Data

From the above table, it can be interpreted that out of 30 respondents Majority of the respondents are interested to know about new initiatives.

Findings

Findings about Old Initiatives

- Out of 30 respondents, 3.33% of respondents are feel not worthy for Priority sector lending, 50% respondents feel worthy and 46.67% of respondents feel fairly worthy.
- Out of 30 respondents, 20% of respondents are feel not worthy for Nationalisation of public sector bank, 40% feel neutral,

33.33% respondents feel worthy and 6.67% of respondents feel fairly worthy.

- Out of 30 respondents, 13.33% of respondents are feeling not worthy for Establishment of regional rural bank, 26.67% feel neutral, 46.67% respondents feel worthy and 13.33% of respondents feel fairly worthy.
- Out of 30 respondents, 6.67% of respondents are feeling not worthy for Service area approach, 30% feel neutral, 50% of respondents feel worthy and 13.33% of respondents feel fairly worthy.
- Out of 30 respondents, 6.67% of respondents

are feeling not worthy for Establishment of NABARD, 16.67% of respondents feel neutral, 43.33% of respondents feel worthy and 33.33% of respondents feel fairly worthy.

Findings about New Initiatives

- Out of 30 respondents, 36.67% of respondents are very interested to know about Pradhan mantrijanadhanyojana, 30% of respondents are fairly interested and only 33.33% of respondents are not very interested.
- Out of 30 respondents 26.67% of respondents are very interested to know about Pradhan mantrijeevanjyothiyojana, 50% of respondents are fairly interested, 13.33% of respondents are not very interested and 10% of respondents are not at all interested.
- Out of 30 respondents 33.33% of respondents are very interested to know about Pradhan mantrisorakshbimayojana, 33.33% of respondents are fairly interested, 26.67% of respondents are not very interested and 6.67% of respondents are not at all interested.
- Out of 30 respondents 40% of respondents are very interested to know about Atal pension yojana, 46.67% of respondents are fairly interested, 23.33% of respondents are not very interested and 3.33% of respondents are not at all interested.

Suggestions

- The Banking services should be taken to the doorstep of the people. For this bank should use common service centres, BC Model and Point of Service (hand held device) option for providing banking services to the remote

areas.

- The RBI and Commercial Banks should plan a Co-ordinated Campaign in partnership with trainers and professionals to educate the customers about the basic financial products and services.
- To deal with Poor villagers, banks need to initiate training programmes to front line staff and managers as well as Business Correspondents on the human side of banking.
- To improve the technological infrastructure of banks, Government should make it compulsory for the banks to invest certain percentage of their profits to advanced technology for making banking services available to the underprivileged people.

Conclusion

Financial inclusion has been able to score over the weakness of formal tending institutions. Since the commercial banks were urban and profit oriented their inclination towards rural people was limited.

Though the performance of microfinance institutions have improved significantly over the past years, sufficient regulatory and governance would help achieve the goal of poverty alleviation and financial inclusion and this could be achieved with the combined cooperation of banks, government and other players in the country. Thus with development of new initiatives for the rural people to achieve financial inclusion and poverty alleviation would be attained.

This study proves that awareness about the old initiatives to contribute positively in the behavior of the respondents in sampling area, especially for the sample under consideration. When I calculate overall impact behavior

towards old initiatives and new initiatives in the minds of the respondents, Majority of the Respondents know very well about the old initiative as well as Most of the Respondents are interested to know about the new initiatives offered by the Government. In fact, these results are not surprising because Respondents should know about the old initiatives as well as new initiatives they are in line with what was expected on the basis of literature survey. So, it will be fallacious to assume, on the basis of this study, that overall Respondents are aware about old initiatives and interested towards new initiatives and obviously new initiatives contributes more towards rural and women development.

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Mutual Funds: New Taste of Indian Investors

Charu Malhotra*

Abstract

In current competitive environment, different kinds of investment options are available to the Indian investors. All investment options have certain advantages & disadvantages. Among various investment modes like real estate, gold, bank deposits, public provident fund etc., mutual fund is the most suitable investment mode for the retail investor, as it offers an opportunity to invest in a diversified and professionally managed portfolio to beat the inflation at a relatively low cost. In this paper, an attempt is made to study the investor's preference towards investment in mutual funds when other investment options are also available in the market. This paper in particular studies the impact of investor awareness programme of Securities & Exchange Board of India, Asset Management Companies on the investing behaviour of retail investor of small cities. This entire pattern is also known as B-15 Boost. This upward trend in the industry also implies that the Indian capital market is having enough domestic funds which make it less vulnerable to the impact of foreign investors. Although the trend is upward in terms of growth of the mutual fund industry but we are far behind the global leaders. Hence it is a very long destination to achieve in comparison to other countries except China. Mainly secondary data is used for the study.

Introduction

A Mutual Fund is a trust that pools the savings of a large number of investors who share a common financial goal. The money collected is invested by the fund manager in different types of securities depending upon the objective of the scheme. These securities could range from shares to debentures to money market instruments. The income earned through these investments and the capital appreciations realized by the scheme are shared by its unit holders on pro-rata basis i.e. in proportion to the number of units owned by them. So we can say that, a Mutual Fund is the suitable investment for

the retail investor as it offers an opportunity to invest in a diversified, professionally managed portfolio at a relatively low cost.

The *Asset under Management (AUM)* of the Indian Mutual Fund MF Industry has grown from ₹ 3.26 trillion as on 31st March 2007 to ₹ 19.26 trillion as on 30th April, 2017, about six-fold increase in a span of 10 years!!

The total number of accounts (or folios as per mutual fund parlance) as on April 30, 2017 stood at 5.61 crore (56.1 million), while the number of folios under Equity, ELSS and Balanced schemes, wherein the maximum investment is from retail segment stood at 4.51 crore (45.1

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million). AUM of the Indian Mutual Fund Industry is growing at the Compounded annual growth rate of 16 % in comparison of 9% of USA and Europe.

Literature Review

A large number of studies on the growth and financial performance of mutual funds as an investment tool have been carried out during the past, in the developed and developing countries.

In India, one of the earliest attempts was made by National Council of Applied Economics Research (NCAER) in 1964 when a survey of households was conducted to understand the attitude and motivation for savings of individuals. SEBI – NCAER Survey (2000) was conducted to estimate the number of households and the population of individual investors, their economic and demographic profile, portfolio size, and investment preference for various savings instruments. Data was collected from 30,00,000 (approximate) geographically dispersed rural and urban households. Some of the relevant findings of the study are : Households preference for instruments match their risk perception; Bank Deposit has an appeal across all income class; 43% of the non-investor households apparently lack awareness about stock markets; and, compared with low income groups, the higher income groups have higher share of investments in mutual funds.

Gupta L C (1992) conducted a household survey of investors with the objective of identifying investors' preferences for mutual funds so as to help policy makers and mutual funds industry to design the products.

Shashikant Uma (1993) critically examined the rationale and relevance of mutual fund

operations in Indian Money Markets. She pointed out that money market mutual funds with low-risk and low return offered conservative investors a reliable investment avenue for short-term investment.

Ansari (1993) stressed the need for mutual funds to bring in innovative schemes suitable to the different needs of the small investors in order to become predominant financial service institution in the country.

Kum Martin (October 2007) in his article, “Basics about Mutual Funds” discussed about different types of mutual funds .He stated that the equity funds involve just common stock investments. They are extremely risky but can end up earning a lot of money. He concluded that the low risk in investment will not earn a lot of returns. Mutual fund managers have to use various investment styles depending upon investor's requirement.

The review of various studies focuses mainly on performance of Mutual Funds and Portfolio of Mutual Fund. The existing study aims to study the contribution of retail investors from the small towns in the robust growth of the industry. This entire phenomena of contribution from the small towns is termed as B-15 BOOST.

B-15 BOOST is described as a major development by experts which has broaden the base of the stock market and provided a counter – balance to foreign portfolio investors whose outflows have led to volatility in the past. In other words, we can say that this development is making our capital market to a large extent immune to the external environment for eg. BREXIT.

Methodology

Mainly secondary data from various newspapers and websites is used to study the changing preference of retail investor in the small cities towards mutual fund as an investment tool is taken into consideration. Data is taken from 2014 onwards to study the impact of change in the preference after the political stability of current government. This study is only an initiative to observe the changing behaviour of the investor towards mutual fund as an investment tool.

B-15 BOOST

T15 refers to the top 15 geographical locations in India and B15 refers to cities beyond them. According to industry sources, the T-15 cities are Ahmedabad, Bangalore, Baroda, Chandigarh, Chennai, Hyderabad, Jaipur, Kanpur, Kolkata, Lucknow, Mumbai (including suburbs), New Delhi (including NCR), Panaji, Pune & Surat.

It was in September 2012 that the Securities Exchange Board of India (SEBI) first initiated measures to boost the B-15 penetration after holding a series of meetings with various stakeholders in the mutual fund industry. SEBI introduced the landmark regulation towards deepening mutual fund penetration all over the country. Steps such as mandating mutual funds to set aside two basis points of their daily net assets for investor education and awareness initiatives and introducing the district adoption programme helped in striving for financial inclusion in the context of mutual funds.

The reach of fund houses has also played a pivot role in promotion of mutual funds as a popular saving tool. Today, each of the top five mutual fund players have more than 100 branches in B15 cities. This increased focus is also a result of

SEBI's decision in 2012 to allow fund houses to charge an additional 30 basis points (bps) in the total expense ratio if new inflows from B15 cities are at least 30 per cent of gross new inflows in the scheme or 15 per cent of the average assets under management, whichever is higher.

“We believe that a major enabler for the strong growth in B15 cities is the upfront commission structure. It is very important to promote a suitable and transparent investment product in B15 cities and the SEBI (Securities and Exchange Board of India) has ensured this focus,” said Nimesh Shah, MD and CEO, ICICI Prudential AMC.

“Along with this, the regulator has made sure that mutual fund remains a highly transparent product with very progressive disclosure norms in place. This has helped improve the trust factor around the product. Also, investor education initiatives run by AMFI, AMCs (asset management companies) in collaboration with distributors have helped improve awareness levels about mutual funds as a financial product,” he said.

In the financial year 2016-17, B-15 cities (all cities below the top 15), such as Patna, Indore and Kozhikode, accounted for 25 per cent of gross sales — around 53 per cent of that was in equity schemes. While gross sales for the year stood at ₹ 2.68 lakh crore for the industry, that from B15 cities stood at ₹ 66,885 crore. According to industry experts, almost 60 per cent of the incremental folios are being contributed from cities outside the top 15, mostly by retail investors out of newly added 1.07 crore new folios over the last three years. The number of folios from T15 cities is around 2.8 crore, that from B15 cities now stands at around 2.7 crore

Sundeep Sikka, CEO, Reliance Mutual Fund, said the retail AUM from B15 cities stood at ₹1.35 lakh crore one year ago but has jumped to over ₹2.1 lakh crore now. “MFs were considered to be an investment avenue for rich urban investors. However, over the last 5-7 years, small retail investors have also been investing in equities and equity mutual funds,” he said.

Role of Systematic Investment Plan (SIP)

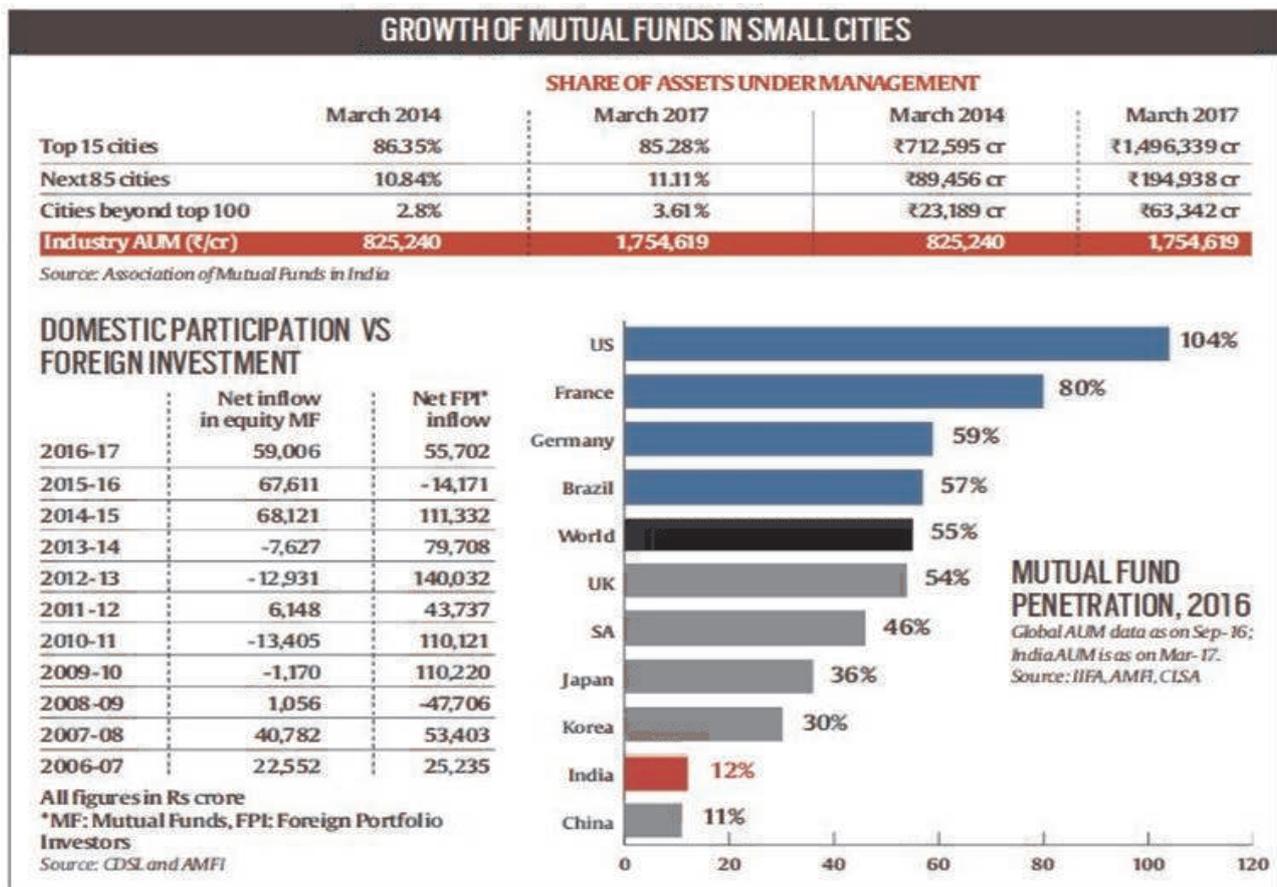
Indian Mutual Funds have currently about 1.35 crore (13.5 million) SIP accounts through which investors regularly invest in Indian Mutual Fund schemes.

Systematic Investment Plan or **SIP** as it is commonly known, is an investment plan (methodology) offered by Mutual Funds wherein one could invest a fixed amount in a mutual fund Scheme periodically at fixed intervals – say once a month instead of making a

lump-sum investment. The SIP instalment amount could be as small as ₹500 per month. SIP is similar to a recurring deposit where you deposit a small /fixed amount every month.

SIP is a very convenient method of investing in mutual funds through standing instructions to debit your bank account every month, without the hassle of having to write out a cheque each time. SIP has been gaining popularity among Indian MF investors, as it helps in Rupee Cost Averaging and also in investing in a disciplined manner without worrying about market volatility and timing the market.

AMFI data shows that the MF industry had added about 6.26 lacs SIP accounts each month on an average during the FY 2016-17, with an average SIP size of about ₹3,200 per SIP account. During FY 16-17, a total amount of Rs. 43,921 crore was collected through SIP.



(table 1)

While net inflows into equity mutual funds over the last three years amounted to a record ₹ 1.95 lakh crore at an average annual inflow of ₹

65,000 crore, city-wise AUM data compiled by the Association of Mutual Funds in India (AMFI) confirms that the share from smaller towns has been on the rise.

**Assets under Management as on March31, 2017
Type and Category-wise (Amount in Crore)**

	Open End	Close	Interval	TOTAL	% to
INCOME	5,90,243	1,4	4,584	7,43,78	42
	4,08,610	1,4	7,827	5,65,45	46
INFRASTRUCTURE	-	1,908	-	1,90	@
	-	1,730	-	1,73	@
EQUITY	4,59,958	22,180	-	4,82,13	27
	3,27,034	17,673	-	3,44,70	28
BALANCED	84,76	-	-	84,76	5
	39,14	-	-	39,14	3
LIQUID/MONEY	3,14,086	-	-	3,14,08	18
	1,99,404	-	-	1,99,40	16
GILT	14,87	-	-	14,87	1
	16,30	-	-	16,30	1
ELSS-EQUITY	57,70	3,699	-	61,40	4
	38,88	2,810	-	41,69	4
GOLD ETF	5,48	-	-	5,48	@
	6,34	-	-	6,34	1
OTHER ETFs	44,43	-	-	44,43	3
	16,06	-	-	16,06	1
FUND OF FUNDS INVESTING OVERSEAS	1,747	-	-	1,747	@
	1,96	-	-	1,96	@
TOTAL	15,73,292	1,76,743	4,584	17,54,619	100
	10,53,762	1,71,235	7,827	12,32,824	100

Notes: 1. @ Less than 1% 2. Figures in **Blue** denote figures for the March 2016.
[Source: Association of Mutual Funds of India (AMFI)] (Table 2)

Data Analysis

T15 (top 15 cities, including the metros) accounted for 86.35 per cent of the industry's AUM of ₹ 8.25 lakh crore in March 2014. Their share came down to 85.28 per cent in March 2017. In the same period, the share of B-15& other cities went up from 13.65 per cent to 14.72 per cent. To be more specific AUM of other cities which are beyond top 100 cities went up from 2.81 per cent in March 2014 to 3.61 in March 2017. In effect, their rise was from ₹ 23,189 crore to ₹ 63,341 crore in the three-year period. In absolute terms AUM from B-15&

other cities rose from ₹ 1,12,645 crore in March 2014 to ₹ 2,58,279 crore.

Data also shows that while the mutual fund industry saw a jump in AUM of 35.2 per cent during 2016-17, B-15 cities saw their assets rise faster, by 41 per cent. It's a similar story when it comes to investment in equity schemes. According to Association of Mutual Funds of India [AMFI] data, 53 per cent of assets of B15 towns went in equity schemes in the year ended March 2017 whereas in case of T15 cities, the equity AUM comprised 29 per cent of their total AUM.

t-Test: Paired Two Sample for Means

Particulars	Variable 1	Variable 2
Mean	412620	
Variance	172110579894.00	
Observations	4	4
Pearson Correlation	0.999942333	
Hypothesized Mean Difference	0	
Df	3	
t Stat	-2.032928044	
P(T<=t) onetail	0.067481298	
t Critical onetail	2.353363435	
P(T<=t) two-tail	0.134962596	
t Critical two-tail	3.182446305	

In table 1 two set of observations are taken for top 15 cities , next 85 cities and beyond 100 cities is taken into consideration in March 2014 & March 2017 and the t-Test : Paired two sample for Means is taken into consideration. Null Hypothesis is taken into consideration that there is no improvement in the investment in mutual funds during the period ranging from 2014 - 2017.

1. Alpha is taken as .05 and p value turns out to be 0.067481298 which means null hypothesis is accepted.
2. t value is -2.032928044 and t Critical two tail value is 3.182446305 , here the null hypothesis is rejected.

But, in order to fully reject the null hypothesis, we have to use both the p and t values in combination. Hence, it is concluded that on the larger scale there is no improvement in investment of mutual funds during the period ranging from 2014-2017 but certainly there is improvement in the micro level, which is shown in the step – 2 analysis.

Better Balance

Two, B-15 assets are equally split between equity and non-equity assets. Exactly 50 per cent of the assets from B-15 locations were in equity schemes at the end of April 2016. The B-15 appetite for equities seems to be higher than that in top 15 cities. In T-15 locations equity oriented schemes accounted for just 28 per cent of assets at April-end this year. This is mainly due to the fact that T-15 locations are the headquarters of large institutions who park a lot of treasury money in debt funds.

Only about 10 per cent of institutional assets come from B-15 locations. Individual investors primarily hold equity-oriented schemes while institutions hold liquid and debt oriented schemes.

Future Prospects

A report by the leading global investment group, CLSA, shows that in September 2016, India's AUM to GDP ratio stood at 12 per cent, much lower than the global average of 55 per cent. To put that in perspective, the numbers were 104 per cent for the US, 80 per cent for France and 59 per cent for Germany. Although mutual funds have penetrated into smaller towns, the industry has a very long way to go which can be achieved by focussing on the following figures:

India is a young nation with 605 million people below the age of 25, International Labour Organization has predicted that by 2020, India will have 116 mn workers in the age group of 20-24.

Increase in the number of HNI and ultra HNI can also be targeted to channelize the resources – A recent study by Kotak Wealth Management has predicted the increase in the number of ultra HNI from current levels of 137,000 to 348,00 in 2020, along with a corresponding rise in networth from ₹ 128 trillion to ₹ 415 trillion.

Use of e-commerce platforms to sell mutual funds can also lead to a fruitful result in the context of 1bn mobile subscribers and 400 mn Internet user.

The opening of 190 million Jan Dhan bank accounts in 15 months through e-KYC and mobilization of ₹ 27,000 crore (about 37% accounts are zero balance accounts) makes it imperative to evaluate the usage of this route to sell mutual fund.

Granting of approval to 11 payment banks that will be allowed to sell third party mutual funds should help increase the market size. Recently permission has been granted to Paytm & Airtel as payment banks.

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A Decade After Corus Acquisition: Tata Steel's Performance

Souvik Banerjee*

Abstract

Tata Steel's acquisition of European steel giant Corus is considered to be a landmark event in the modern corporate history of India. The case study explores the aftermath of the acquisition and performance of the merged entity, a decade after the event. The study assumes more significance on account of the unprecedented financial crisis in the western world.

Introduction

The news of Tata steel's acquisition of Anglo Dutch steel giant Corus came in wee hours of 2nd.April, 2007. The \$ 12.1 billion acquisition was a trophy for the 150 year old Mumbai based Indian conglomerate. The then managing director of Tata Steel Muthuraman said the company had put in place 15-18 synergy teams to smoothen the integration process and the process should complete by the end of May,2007. He was quoted as saying “I sincerely believe that the synergy potential per annum will be more than the earlier indicated figure of \$350 million”.

Tata funded its acquisition of Corus, through \$6.14 billion in long-term debt from a consortium of banks and \$4.10 billion in equity, invested through Tata Steel U.K. An amount of \$2.66 billion was raised in the form of bridge finance.

In a research note circulated, Morgan Stanley said, “We believe the funding plan on an overall basis is neutral to slightly positive in the near

term and looks a step in the right direction from medium to long term perspective.”

Corus Plc Ltd (as of 2007) was Europe's second largest steel producer with annual revenues of Rs.82, 674 Cr (£ 9.7 billion) with a steel production of 18.3 Million Ton(MT) in 2006. Corus was also the ninth largest steel producer of the world at that point of time. The main plant locations of the company were in the UK and Netherlands, with additional facilities in Germany, France, Norway and Belgium.

Table 1: Financial Performance of Corus and Tata Steel before the Acquisition

Particulars	Tata Steel			Corus		
	FY2006	FY2005	FY2004	FY2006	FY2005	FY2004
Debt (in Rs. Cr)	4,590	4,200	3,990	9,810	10,500	9,600
Revenue (in Rs. Cr)	20,240	15,990	11,120	76,050	69,990	59,650
Net Profit (in Rs. Cr)	3,720	3,603	1,780	3,390	3,350	-2,290

Source: Corus and Tata Steel Annual Reports

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Downturn in European Economies

Unfortunately for the Tata group, within months of these acquisitions, the world witnessed the onset of a grave financial crisis that triggered a credit crunch and precipitated a real economic recession. Steel industry was among the worst affected. The series of events started with bankruptcy and subsequent acquisition of Bear Stearns, the storied investment bank of Wall Street, in March, 2008. What followed in the months to come are the bankruptcies of financial behemoths across the western world.

First, sales and revenues of Corus were far short of expectations, making it difficult for Tata Steel to meet commitments on their debt and reduce the degree of leverage. Second, with much of this debt being of a bridge loan kind, loans that mature and cannot be repaid have to be refinanced and rolled over to prevent default. Commenting on the situation Mr.Ratan N. Tata told the shareholders of the company in its financial year (FY) 2009 annual report, "After decades of global growth, the world watched in horror as financial institutions collapsed, first in the United States followed by Western Europe and the United Kingdom. The crisis then spread to nations in Eastern Europe, Asia and other geographies. This global meltdown had a widespread and devastating effect on the world-wide banking system, stock markets, pension funds, individuals' net worth and ownership of assets. It was a financial crisis of proportions approaching that at the time of the Great Depression of 1929."

Table 2: Demand of Steel in Major European Countries in Pre and Post Crisis Years

Country	Demand(in '000 tons)		
	Year		
	2007	2011	2013
Germany	45,992	45,141	41,500
France	19,147	16,304	14,566
UK	14,570	11,048	9,690
Spain	27,500	14,000	11,337
Italy	38,102	28,089	23,044
Poland	14,002	11,659	11,241
Czech Republic	7,599	6,985	6,675

Source: World Steel Association Report, 2014

Table 3: Demand of Steel in Major Economies of the World in Pre and Post Crisis Years

Region	Demand(in'000 tons)		
	Year		
	2007	2011	2013
China	435,860	667,930	771,729
USA	120,381	101,000	106,300
European Union	219,064	170,852	153,286
Japan	85,900	69,600	70,900
CIS	65,264	62,688	67,055
World	1,328,888	1,519,643	1,648,127

Source: World Steel Association Report, 2014

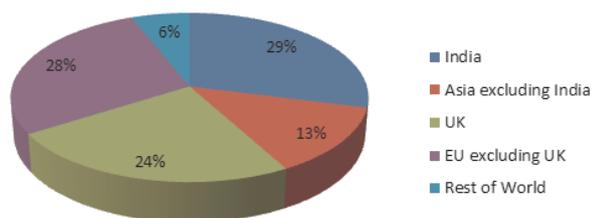
Renewed Focus on Indian Market

India came out relatively unscathed of the financial crisis. Tata steel continued to grow its India operations, in this backdrop, commenting on the future of Tata Steel, Mr.Ratan N.Tata said, "Steel has been and will be, the basic foundation material for national growth and the industry will continue to be an important ingredient in a global economic recovery" in his address to the shareholders of the company in the annual report for the Fy10.

Amid the doldrums in its European operations, the company focused on fast growing Indian market to maintain its growth momentum. While emphasizing the importance of Indian

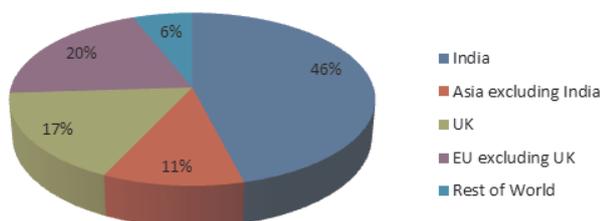
market in the company's future scheme of things, Cyrus P. Mistry the then chairman of the company said in its FY2013 annual report,” The most important growth project for the Tata Steel Group is the 6 MTper annum greenfield steel plant in Odisha, where work is continuing at full speed for the first phase of 3 MT.”

Figure 1: Geographical Distribution of Revenue of Tata Steel (as on 31st.March,



Source: Annual Report of Tata Steel for FY 2013

Figure 2: Distribution of Capital Employed across Various Geographies of Tata Steel (as on 31st.March, 2013)



Source: Annual Report of Tata Steel for FY 2013

Steps Taken by Tata Steel to Salvage the European Steel Business

In a February 4, 2016 news release to disclose results for the quarter ending December 2015, Karl-Ulrich Köhler, MD & CEO of Tata Steel in Europe stated: “Chinese steel shipments into Europe leapt more than 50% last year, while imports from Russia and South Korea jumped 25% and 30% respectively. The European steel association has identified that Chinese steel is being exported at prices below the cost of production

Owing to continuous weakness in demand Tata Steel decided to stop production in three units across Europe in the long products division to cut cost in late 2015. The resultant job losses were pegged at 1200.

Tata Group's dilemma to handle the situation also finds a place in the much publicized episode of the removal of Tata Group chairman Cyrus Mistry. According to media reports the group patriarch Ratan Tata and the final holding entities of the Tata Group, the Tata Trusts were not comfortable with the way Mr.Mistry was trying to find a solution to the imbroglio.

In a renewed push to salvage the European steel assets, Tata steel mooted a joint venture with the German steel giant Thyssenkrupp since 2016. However no conclusive agreement in clinched till date. The negotiations became complicated, following the United Kingdom's decision to leave the European Union. The other bone of contention is the legacy cost of Corus's pension fund, which amounts to close to \$20 billion.

Performance by Tata Steel Group Post Acquisition

Table 4: Turnover of Tata Steel Group and Tata Steel Europe after the Acquisition (in Rs. Crore)

	Tata Steel Group	Tata Steel Europe
FY08	1,31,534	100,218
FY09	1,47,329	109,570
FY10	1,02,393	64,010
FY11	1,18,753	73,844
FY12	1,32,900	82,153
FY13	1,34,712	78,012
FY14	1,46,814	84,666
FY15	1,39,504	79,878
FY16 (up to Dec)	1,05,838	51,147

Source: Annual Reports of Tata Steel

Table 5: Debt of Tata Steel Group Over the Years Post Acquisition

Amount of Debt in Tata Steel Group	
Financial Year	Debt Amount (in Rs. Cr)
FY08	53,625
FY09	59,901
FY10	53,100
FY11	53,045
FY12	49,937
FY13	57,405
FY14	68,393
FY15	69,304
FY16 (up to Dec)	75,118

Source: Annual Reports of Tata Steel

Table 6: Market Capitalization of Tata Steel Group Over the Years Post Acquisition

Market Capitalization of Tata Steel	
Financial Year	Market Capitalization (in Rs. Cr)
FY08	50,640
FY09	15,050
FY10	56,129
FY11	59,519
FY12	45,686
FY13	30,331
FY14	38,251
FY15	30,773
FY16	31,502

Source: Annual Reports of Tata Steel

Table 7: Production of Tata Steel Europe Over the Years Post Acquisition

Steel Production of Tata Steel Europe	
Financial Year	Production (in million ton)
FY08	20.0
FY09	15.8
FY10	14.4
FY11	14.6
FY12	14.3
FY13	13.4
FY14	15.5
FY15	15.2

Source: Annual Reports of Tata Steel

Q. How to save Tata's European Steel Business?

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Hero MotoCorp: “Hum Mein Hai Hero”

R. Venkataraman* & Chetna**

Abstract

The case study “Hero MotoCorp: Hum Mein Hai Hero” is an attempt to throw some light on the demerger of Hero Honda. The two companies worked together for more than 25 years. It was in December 2010, the companies announced their demerger. It was one of the biggest demergers in the Indian business history. The case talks in details about the journey of the Hero Group. Demerger of the group and rebranding of Hero MotoCorp has been discussed in details. The case study is supported by secondary data from valid sources. Towards the end of the case study, the core values, mission and vision of Hero MotoCorp have been highlighted.

Introduction

The world is passing through a global economic turmoil. The socio political and economic volatility are impossible to avoid for any company who is playing in the international markets. The on-going refugee crisis in Europe, Brexit in UK, the elections of USA are all contributing towards the uncertainty of the micro as well as macro environments. Among all these uncertainties India shines as a bright star with stable political and democratic environment and a vibrant middle class which creates greater business opportunities for all. Hero motor bikes are loved by this vibrant class, giving an opportunity to the hero group to explore the unexplored.

The Hero group was established by the four Munjal brothers, namely, Om Prakash Munjal, Late Satyanand Munjal, Late Brijmohan Lall Munjal and Late Dayanand Munjal. They established a business of bicycle spare parts in

the year 1944 in Amritsar.

In the year 1954, Hero Cycles expanded its business. They started manufacturing handlebars, front forks and chains. Previously, they were only the suppliers of the above mentioned items. In 1956, the Punjab Government issued tender notices for twelve new industrial licenses to make bicycles in Ludhiana. Brij Mohan LallMunjal and his brothers participated in the bid and won the contract. Hero Cycles was registered as a large-scale industrial unit. Partial financing of the capital would be done by the Government of Punjab.

In 1961, Rockman Cycles Industries was established to manufacture bicycle chains and hubs. Under the able leadership of Munjal, Hero Cycles was the first company to export bicycles on very a large scale. In 1975, the company had become the largest bicycle manufacturer in India.

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The Journey

- 1944 : The Munjal Family migrated from Kamalia in a part of Punjab that would go to Pakistan after the Indian Independence and Partition of British India in 1947. They established a business of bicycle spare parts in Amritsar.
- 1956 : The Family moved to Ludhiana and they start a bicycle unit called Hero Cycles with a capacity to turn out 25 bicycles per day. At present it makes 18500 cycles per day.
- 1959 : Brij Mohan lall visits Germany. It was his first overseas trip. He purchased a bicycle chain making plant for Rs 3,00,000.
- 1975 : The Hero Cycles becomes the largest manufacturer of bicycles in India.
- 1978 : Hero Cycles started Majestic Auto Ltd. which launched first moped in India - Hero Majestic Mopeds.
- 1981 : Japanese company Honda Motors sends its delegates to India for the market survey in automobile sector and choose a partner for joint venture.
- 1983 : Honda Motors chooses Hero Cycles as its partner and both the companies sign joint venture and shareholder agreements for.
- 1984 : Hero Honda Motors Ltd is incorporated.
- 1985 : Hero Honda Motors launches its first motorcycle CD 100 from its plant in Dharuhera, Haryana
- 1987 : Hero Honda produced 1,00,000th motor cycle.
- 1991 : Hero Honda produced 5,00,000th motorcycle.

- 1994 : Hero Honda launches 100cc Splendour, which went on to become one of the largest selling motor bike. The companies renewed their partnership for another 10 years.
- 1997 : Hero Honda's second manufacturing plant in Gurgaon started manufacturing. Hero tied up with BMW to assemble and sell BMW 3 series in India but the partnership and plan turned out to be non-starters.
- 1999 : Hero Honda launched 150cc CBZ. Honda Motors formed an independent subsidiary Honda Motorcycles and Scooters India, to manufacture scooters.
- 2000 : Hero Honda launched 100cc motorcycle, the Passion.
- 2004 : The two companies Hero and Honda renewed their agreement for another 10 years.
- 2005 : Hero Honda lunches its first scooter, the 100cc Pleasure.
- 2006 : Honda Motors started manufacturing motorcycles in India and launched 125cc Unicorn from its stable.
- 2008 : Hero Honda inaugurated a new plant in Haridwar and achieved the milestone of 25 million motorcycles.
- 2009 : Hero Honda celebrated its silver jubilee.
- 2010 : Hero Honda part ways.

Termination of Hero Honda Joint Venture

The Munjal family and Japan's Honda Motor formally announced the end of their 26-year-old joint venture in December 2010. Honda could now directly access the Indian market. Hero group would be the majority owner of the world's largest two-wheelers manufacturer. The

board of directors of the Hero Honda Group had decided to terminate the joint venture between Hero Group of India and Honda of Japan in a phased manner. The Hero Group would buy out the 26% stake of the Honda in Joint Venture Hero Honda. Under the joint venture Hero Group was not allowed to export to international markets (except Nepal, Bangladesh and Sri Lanka). The termination of the contract would mean that Hero Group could export to the international markets. Hero Group relied on their Japanese partner Honda for the technology in their bikes from the very beginning. There were concerns that the Hero group could not match the standards which were maintained during the joint venture era.

Honda also has a fully owned independent two wheeler subsidiary known as Honda Motorcycle and Scooter India (HMSI). Honda was supposed to exit Hero Honda at a discounted rate. It would get over \$1 billion for its stake. The discount would be between 30% and 50% to the current value of Honda's stake as per the price of the stock after the market closed on December 16, 2010.

The difference between the two companies was rising as the days progressed, and this was a major concern. The differences were over several issues, Honda was not willing to share its technology completely with the Hero Group though they had a contract which was supposed to end on the year 2014. The Hero group had to pay a huge sum as royalty which started hurting them. Hero group owned a Spare parts business as well, Honda wanted to merge this business with their completely owned business venture Honda Motorcycle and Scooter India (HMSI). The Hero group was not willing for it, this emerged as the major reason for the differences among the two companies.

The exit of Honda would be in a phased manner,

over a period to June 2014. The company's name would also change by then. The Hero group had to form an overseas incorporated Special Purpose Vehicle. This was to help them in buying Honda's stake in the joint venture. Hero group would take help of Bridge loans. Eventually the Special Purpose Vehicle would be open for private equity participation. The line-up companies were Warburg Pincus, Kohlberg Kravis Roberts (KKR), TPG, Bain Capital, and Carlyle Group.

Hero Honda joint venture enjoys 60 per cent market share for bikes. It has become a generic reference brand for motorcycles. It is believed that in rural India every second home has a Hero Honda motorcycle. After the split Hero group would be open to the international market, it could explore new opportunities in the global market. There would be huge pressure on the Hero group to develop its own research and development wing and also technology. It will have to maintain its market share as well and develop new products. There will be stiff competition from the players in the two wheeler sector.

Abdul Majeed of Price Waterhouse said, "The competition to capture the market and maintain their share would now intensify, leading to price wars. We would see several more bikes in the Rs 40,000-50,000 bracket loaded with new features, something that has happened with premium features coming in Ford Figo and Volkswagen Polo at compact car prices".

Mr. Toshiaki Nakagawa was the joint managing director and Mr. Sumihisa Fukuda was the director (technical) of the joint venture. They were paid as much as Rs 60 crore, making them among the highest paid expatriates in the country. They were supposed to step down from their respective posts and this would save a handsome amount for the Hero group.

After the split Honda would be able to concentrate completely on its Honda Motorcycles and Scooters India Ltd. This would pose a stiff competition to Hero group. Before the split, the companies used to compete with each other, but now it would mean a stiffer competition. Fumihiko Ike, MD and COO Regional Operations (Asia and Oceania) at Honda Motor, had said, "The main objective of setting up this company 26 years ago was to explore the Indian market which has changed considerably since then."

"The timing of the end of the joint venture is advantageous in terms of the fact that the overall market is expanding and specifically it has ended uncertainty within the two companies. The termination of the joint venture opens up the opportunity for Hero to become a global player which was a constraint during the joint venture." - RakeshBatra, partner and national leader of the automotive practice at Ernst and Young, in 2010.

"On the face of it, one would assume that with this change there would be greater competitive activity both for the export markets where one should expect Hero to be more active and also in the domestic market place one could expect more action from Honda." -Rajiv Bajaj, MD, Bajaj Auto Ltd. in 2010

Honda would continue to provide technology to Hero Honda motorbikes until 2014 for existing as well as future models.

Rebranding of Hero Honda

In the year 2010, the world witnessed the end of one of most successful joint venture – Hero Honda. It would be a new beginning for the Hero group. The joint venture had started in the year 1984; both the companies had similar view point. India has a very large population in the middle class income group, the per capita

income was low, the transportation system was unorganized and the companies believed that this would serve as their target market as they were looking for a cheaper means of personal transport. Hero group had a better understanding of the Indian market and it was a leader in sales and marketing, on the other hand the Honda motors was undisputed leader in two wheeler technology around the globe. The joint venture came to an end after 26 long years. The split has enabled the Hero group to explore the international markets, which was not possible when in joint venture.



In a research note circulated, Morgan Stanley said, "We believe the funding plan on an overall The world's largest manufacturer of two-wheelers by volume sales for nine consecutive years since 2001 and one of The Forbes 200 Most Respected Companies in the world – Hero Honda has come a long way. With a massive 5 million strong consumer base and more than 20 million two-wheelers on Indian roads, Hero Honda truly became Desh Ki Dhadkan with DhakDhak image touching the hearts and strings of everyone across the nation. Rebranding this big a brand would be a mammoth task in order to move out of the mould of Hero Honda and ride into newer and different horizons. The Hero Group roped in London-based Wolff Olins -a global brand and innovation specialist, to work on its new identity including the brand architecture, brand name, brand logo and brand positioning with an underlying theme of Creation, Renewal and Re-energizing the brand. The entire re-branding exercise would involve a gradual shrinkage of

brand Honda and place Brand 'Hero' on all its products by 2014.

The new logo shows the letter 'H' in capital with a clear white background along with 'Hero' written beneath in Red. The black colour in the logo stands for solidity and premium-ness while the Red gives a feeling of energy, passion, and confidence. To represent 'Hero' in 3D, the logo even has a triangle, trapezoid and a parallelogram in the first letter of its name. The sharp edges depict style, engineering and innovation. The new logo is designed to relate to the youth and their 'can do' spirit.

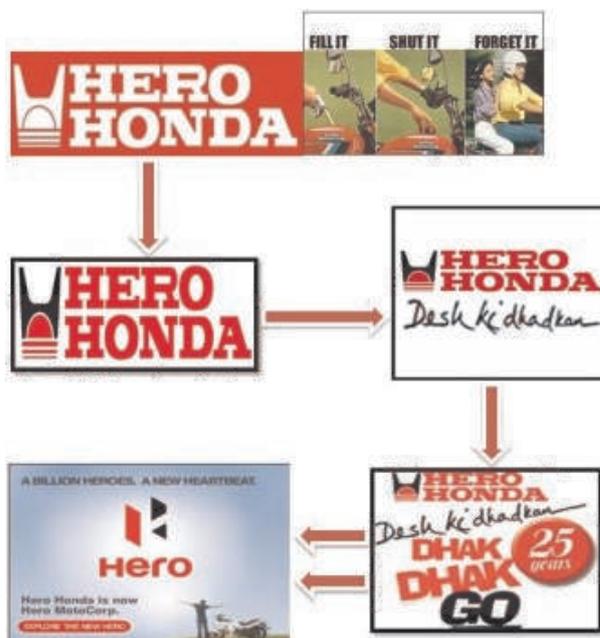


The company has rolled out a new anthem 'Hum Mein Hai HERO' (There's a Winner in All of us), composed by A.R Rahman with the campaign launch on 15th August to capture the maximum eyeballs and was received with a lot of excitement and applause by the masses that could connect the HERO-ism of the brand with their daily challenges and a true winning spirit. Mr. Pawan Munjal, the CEO of Hero MotoCorp, who explains this campaign as a true sense of Indian Catapult which signals that although its roots are very Indian, it is ready for global expansion.

The Hero Group has re-positioned itself for the emerging Brand India. But the real test begins for the Munjals who will now have to look at building very crucial R&D facilities required to operate in a tough market like India. As a consumer, we have always felt that the real Hero in the new-age Hero Honda bikes was the Honda engine viz. CBZ, Hunk and Karizma. HeroMotoCorp needs to make its consumers

aware of the technology advancements and progress they make in their motorcycles to maintain their leadership position in the market. With players like Bajaj, TVS and Honda rolling out exciting models every year, we just need to wait and watch if the new HERO becomes India Ki NayiDhadkan or not.

The Brand Journey of Hero



Hero Moto Corp after the Split

Japanese automobile major Honda has marked its two-wheeler presence in the five years since its split from Indian partner Hero. It has not been able to gain the number one slot though. The company was aspiring to overtake Hero by 2015/2016. Hero's solo journey has been marked by higher profitability but a declining market share, a function of its dependence on motorcycles. The two wheeler automobile industry has grown in single digit in India in last three years (2012-2015), Honda Motorcycles and Scooters India has been able to grow in double digits for three consecutive years.

It was in end-March 2011 that the two partners effectively ended their 26-year partnership. Both the groups had their own unique challenges. Hero had all along depended on the partner for technology and had to focus on developing in-house research and development (R&D) capabilities. For Honda, developing mass products and expanding of network was a key challenge. While having a partnership with Hero, Honda had started selling scooters about 15 years ago independently. In subsequent years, motorcycles were also launched under its own brand. The company name was Honda Motorcycles and scooters India ltd.

Both the companies have moved ahead after the split. Honda has expanded from about 800 sales outlets to a reasonably strong 4,500 touch points. The wider product portfolio, improved network and booming scooter market have helped Honda move up from a share of 15 per cent at the time of split to 26 per cent. Honda has come above the competition ladder and gained the number 2 slot leaving behind Bajaj auto. In the past five years, Bajaj's share in the domestic two-wheeler market has slipped from 20 per cent to 11.5 per cent.

Honda sales is increasing, but the Hero group is way ahead of it in market share. The sales of Hero have dipped to 39% from 44%. There are certain uncertainties in the rural markets due to no monsoon or delayed monsoon, this has impacted hero group a lot. But, the company has made significant progress on the R&D front. It has set-up its first dedicated Rs 850-crore R&D centre last month. The 247-acre facility near Jaipur will have 600 engineers soon. Hero had a tiny three-acre R&D setup before the Jaipur centre came up. The centre will be led by Hero's chief technology officer Markus Braunsperger, who has come from BMW in 2014 after a 25-year-long experience in R&D, production and

strategy roles.

Hero has also taken steps to improve its share in the fast-growing scooter space. In September last year, Hero expanded its scooter offering with the launch of two in-house products - Duet and Maestro Edge. Until then, the country's largest two-wheeler maker had only two scooters to offer: Pleasure and Maestro. Chairman, managing director and chief executive officer Pawan Munjal said in September that the company's aim was to 'gun for leadership in scooters'. "I know it is not going to happen overnight," he added.

The new products helped its scooter segment grow nine per cent last year and take its market share close to 20 per cent in most months after September. Munjal said early this month the five-year solo journey has been satisfying. "The journey from here promises to be even more exciting as we gear up to launch our in-house developed products." Hero has improved profitability as raw materials remained benign and efficiency improvement measures helped.

Honda claims its operations are profitable, too. "We have reinvested the money earned from India operations in expansions," said the company's senior vice-president (sales and marketing), Y S Guleria. Outlining the challenges, Guleria said the company has a long way to go to ensure the last-mile connectivity as nearest competitor (Hero) has around 6,000 sales points. "While we have expanded to 4,500 points. Any new network needs to create its own connect with the local population before it starts performing at an optimum level."

Predictions of an above-normal monsoon this year is expected to drive up motorcycle sales and Hero with its 52 per cent market share could come out as its primary gainer. Honda's motorcycle share is at 14 per cent while it enjoys a 55 per cent share in scooters. "Fortunately, the

scooter segment now happens to be the fastest growing. We are as much serious about the motorcycle business," said Guleria.

For Honda, the focus is not on getting to the No 1 slot but consistently growing the volumes. "Our target is on expanding volumes. As a company, we want to be on top of customers' mind and market share will be a consequence," said Guleria. Munjal, on the other hand, recently said the company aspires to command a 50 per cent share in the domestic two-wheeler market.

Balance Sheet

For the year ended March 31, 2015

Particulars	Note No.	As at 31st March, 2015	As at 31st March, 2014
I Equity and Liabilities			
1 Shareholders' funds			
(a) Share capital	3	39.94	39.94
(b) Reserves and surplus	4	6,501.39	5,559.93
2 Non-current liabilities			
(a) Long term liabilities	5	31.33	24.45
(b) Long-term provisions	7	65.62	49.98
3 Current liabilities			
(a) Trade payables	8	2,841.87	2,290.59
(b) Other current liabilities	9	307.49	588.08
(c) Short-term provisions	10	734.06	1,544.33
TOTAL		10,521.70	10,097.30
II Assets			
1 Non-current assets			
(a) Fixed assets	11		
(i) Tangible assets		2,818.29	1,897.27
(ii) Intangible assets		94.40	345.98
(iii) Capital work-in-progress		712.55	854.11
(b) Non-current investments	12	863.78	812.88
(c) Deferred tax assets (Net)	6	73.54	105.98
(d) Long-term loans and advances	13	616.82	477.39
(e) Other non-current assets	14	60.19	47.81
2 Current assets			
(a) Current investments	12	2,290.33	3,275.89
(b) Inventories	15	815.49	669.55
(c) Trade receivables	16	1,389.59	920.58
(d) Cash and cash equivalents	17	159.25	117.50
(e) Short-term loans and advances	18	567.66	550.31
(f) Other current assets	19	59.81	22.05
TOTAL		10,521.70	10,097.30

Source: © Hero MotoCorp Ltd. 2015, all rights reserved.

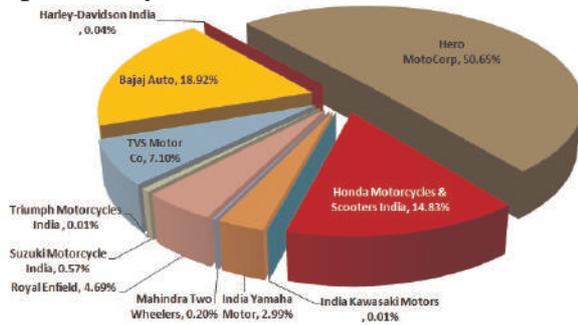
Standalone Profit and Loss Account

	Mar '16 12 mths	Mar '15 12 mths	Mar '14 12 mths	Mar '13 12 mths	Mar '12 12 mths
Income	In Crores				
Sales Turnover	30,857.46	29,302.94	27,155.82	25,659.97	25,235.02
Excise Duty	2,258.16	1,717.64	1,880.35	1,891.80	1,655.96
Net Sales	28,599.30	27,585.30	25,275.47	23,768.17	23,579.06
Other Income	391.12	337.7	446.38	398.38	364.57
Stock Adjustments	6.82	29.97	-8.36	-32.8	83.84
Total Income	28,997.24	27,952.91	25,713.44	24,133.63	24,027.44
Expenditure					
Raw Materials	19,424.80	19,890.84	18,320.46	17,470.73	17,467.66
Power & Fuel Cost	122.13	158.47	137.46	129.18	112.66
Employee Cost	1,319.56	1,172.87	930.04	820.92	735.52
Miscellaneous Expenses	3,292.62	2,850.91	2,339.09	2,030.00	1,728.22
Total Expenses	24,159.11	24,073.08	21,727.05	20,450.83	20,044.06
	Mar '16	Mar '15	Mar '14	Mar '13	Mar '12
	12 mths				
Operating Profit	4,447.01	3,542.16	3,540.06	3,284.48	3,618.76
PBDIT	4,838.13	3,879.86	3,986.44	3,682.86	3,983.36
Interest	2.15	11.09	11.82	11.91	21.3
PBDT	4,835.98	3,868.76	3,974.62	3,670.95	3,962.06
Depreciation	441.4	539.97	1,107.37	1,141.76	1,097.34
Profit Before Tax	4,394.58	3,328.82	2,867.25	2,529.20	2,864.71
PBT (Post Extra-ordinary Items)	4,394.58	3,328.82	2,867.25	2,529.20	2,864.71
Tax	1,262.21	943.16	758.17	411.04	486.58
Reported Net Profit	3,132.37	2,385.64	2,109.08	2,118.16	2,378.13
Total Value Addition	4,734.37	4,182.25	3,406.59	2,980.10	2,576.40
Equity Dividend	1,437.75	1,198.12	1,299.13	1,198.13	898.56
Corporate Dividend	292.66	223.76	220.79	203.62	145.77
Tax					

Per share data (annualised)

Source: <http://www.autocarpro.in/analysis-sales/india-sales-wheelers-2016-20335>

India Motorcycle Market Share Analysis: April - May 2016



About Hero MotoCorp

Hero MotoCorp Ltd. (Formerly Hero Honda Motors Ltd.) is the world's largest manufacturer of two - wheelers, based in India. In 2001, the company achieved the coveted position of being the largest two-wheeler manufacturing company in India and also, the 'World No.1' two-wheeler company in terms of unit volume sales in a calendar year. Hero MotoCorp Ltd. continues to maintain this position till date.

Pawan Munjal is an Indian belonging to the promoter family of Hero group. Pawan is the third child of BrijmohanLallMunjal and Santosh Munjal. He is 61 years old and currently serves as the Chairman, Managing Director & CEO of Hero Moto corp.

Vision

The story of Hero Honda began with a simple vision - the vision of a mobile and an empowered India, powered by its two wheelers. Hero MotoCorp Ltd., company's new identity, reflects its commitment towards providing world class mobility solutions with renewed focus on expanding company's footprint in the global arena.

Mission

Hero MotoCorp's mission is to become a global enterprise fulfilling its customers' needs and

aspirations for mobility, setting benchmarks in technology, styling and quality so that it converts its customers into its brand advocates. The company will provide an engaging environment for its people to perform to their true potential. It will continue its focus on value creation and enduring relationships with its partners.

Core Values

Integrity:

Adherence to ethical and moral principles

Humility:

Absence of arrogance, open mind towards absorbing new ideas, innovations and learning

Excellence through Teamwork:

Persistence and striving towards perfections in all our actions, products and services

Speed:

Responsiveness in all our actions; ability to execute, implement strategies

Respect:

Towards elders, seniors; everything worthy in the material, spiritual and the intellectual world; towards systems, processes and values

Strategy

Hero MotoCorp's key strategies are to build a robust product portfolio across categories, explore growth opportunities globally, continuously improve its operational efficiency, aggressively expand its reach to customers, continue to invest in brand building activities and ensure customer and shareholder delight.

Brand

The new Hero is rising and is poised to shine on

the global arena. Company's new identity "Hero MotoCorp Ltd." is truly reflective of its vision to strengthen focus on mobility and technology and creating global footprint. Building and promoting new brand identity will be central to all its initiatives, utilizing every opportunity and leveraging its strong presence across sports, entertainment and ground-level activation.

Manufacturing

Hero MotoCorp two wheelers are manufactured across 4 globally benchmarked manufacturing facilities. Two of these are based at Gurgaon and Dharuhera which are located in the state of Haryana in northern India. The third manufacturing plant is based at Haridwar, in the hill state of Uttarakhand; the latest addition is the state-of-the-art Hero Garden Factory in Neemrana, Rajasthan.

Distribution

The Company's growth in the two wheeler market in India is the result of an intrinsic ability to increase reach in new geographies and growth markets. Hero MotoCorp's extensive sales and service network now spans over to 6000 customer touch points. These comprise a mix of authorized dealerships, service & spare parts outlets, and dealer-appointed outlets across the country.

CSR - We Care

Chairman Emeritus's Message: Late Dr. Brijmohan Lal Munjal (1st July 1923 to 1st November 2015)

“We must give back to the society from whose resources we generate wealth.”

About We Care

At Hero MotoCorp, the principles of CSR are

integral to the way they conduct the business. They believe in 'Manufacturing Happiness' through their various factories, where man, machine and nature work together in harmony to minimize environmental impact and develop a healthy ecosystem. Their efforts focus on activities that enhance environmental capital, support rural development and education, facilitate healthcare, create sustainable livelihoods and promote sports and road safety awareness. We Care is CSR Umbrella, under which we have four flagship programmes – Happy Earth, Ride Safe India, Hamari Pari and Educate to Empower, that are aimed at fulfilling the CSR vision to have a Greener, Safer and Equitable world.

CSR VISION :

To have a Greener, Safer and Equitable World.

Greener :

Environment Sustainability, Sanitation & Hygiene Programs aimed at creating a Greener and

Safer:

A Road Safety initiative that aims to make Indian Roads safer by spreading awareness about traffic rules and regulations.

Equitable :

Supporting Girl Child and School Student Education programs with high focus on Social and Community Development.

End Notes

1. The hero group – was it really prepared for the split?
2. What shall be the market strategy for the Hero motocorp so that it can grow its market share in double digits?
3. Was the rebranding of the Hero group successful?

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