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Globsyn Management Journal (GMJ)

Patron's Desk

It has been our endeavour to build a Business School based on Technology, Innovation and Research. It is here where the role of GMJ is important. We would like this Journal to represent management educators and innovators to share their research in this Journal. Let this become a true choice for all management students, researchers and educators.

My best wishes to the entire team.

Bikram Dasgupta
Founder & Executive Chairman

Editorial

Knowledge economy is the driving factor in today's India. Hence, quality higher education plays a pivotal role in shaping the future generation. Higher education should be structured to fulfil the aspirations of knowledge seekers as also paving ways of knowledge application. Thus competent resources are required to drive this cognition and build an edifice of knowledge. Management education in its own way has to bridge the gap of mainstream education and the industry needs.

We take immense pleasure in presenting the seventh volume of Globsyn Management Journal, popularly known as GMJ amongst its readers, wherein we critically review and select articles which are relevant in contemporary times. This volume of GMJ has research articles on telemedicine, mergers and acquisition and results from an empirical survey on ATM services. GMJ also presents to its readers, authors' perspectives on the transition of the Indian society in the post-liberalisation era, fairness in performance appraisal process and consumer awareness about Consumer Protection Act and Rights. The Case Study has a very contemporary and relevant topic focused on the tourism sector, its socio-economic developmental perspective. Thus the write-ups are convergent to engage and enlighten the readers to expand their horizon of thoughts and application.

The entire editorial team of GMJ thank you for your whole-hearted support and co-operation in facilitating the Journal to move towards the heights of success.

Ipsita C. Patranabis
Associate Editor

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Research Articles

Gaining Synergy by Spinning Off

Sujit K. Ghosh

Associate Professor, Department of Commerce, Umeschandra College, Kolkata

Abstract

Corporate restructuring, though criticized as merely a rearrangement of deck chairs on the Titanic, is fuelled no doubt by the globally based consultancies to reach a new height with a whole host of strategic options – expansion, contraction, corporate control and changes in ownership structure. One of the modes of contracting size is demerger. By whatever name it is called – split-up, divestment, split-off or spin-off it intends to trim size to sharpen company's core competency for growth and efficiency. Demerger becomes a driving force to increase value in the cutthroat competitive environment, both economic and financial. In this backdrop the present paper is an attempt to evaluate demerger as a strategic event by analyzing and evaluating financial performance of a select Indian company resorting to both traditional and modern tools.

Key words: Demerger; Economic Value Added; Market Value Added; Shareholders Value Added; Kinked Exponential Growth.

Introduction

Since the era of globalization and liberalization demands growth at a neck break speed to achieve the goal known and beyond, corporate restructuring with its fervor and zeal beckons the corporate sector furnishing the dream of getting the real key to creating wealth by averting the cut-throat competition that prevails in the newly emerged economic world. Companies are engaging in various efforts to consolidate themselves in areas of their core competence and divest those businesses where they do not have any competitive advantage (Vedpurishwar, 2001).

Consequently, as an option, corporate restructuring through both mergers &acquisitions and demergers are emerging as the key corporate activities. While merger and acquisition is the only remedy for number of companies to create value and to grow, the others feel separating or segmenting the ownership might become more advantageous (Coyne and Wright, 1986). To them corporate break-ups seem to be more effective and attractive to enjoy improved operating performance and better information flow to the investors because of separating financial disclosure. Investors become more equipped and the companies can raise additional equity funds by boosting their valuations up and unlocking hidden shareholders' value as a sequel of demerger (Miles and Rosenfield, 1983).

Demerger, by whatever name it is called – split-up, divestment, split-off or spin-off, intends to trim size to sharpen company's core competency for growth and efficiency. Demerger is the converse of a merger or acquisition. It is described as cases where part or parts of a parent company become separate legal entity through spin-off or split-off or split-up. After the demerger takes place the parent company and demerged entity are still owned by the same shareholders (Burgelman, 1984). The rationale behind the demerger is to unlock the potential of business organizations to create and preserve shareholder value (Schipper and Smith, 1983). Demerger, as a strategic and practical approach towards attaining world-class stature helps the companies stay decisive, focused

and complement their risk taking culture (Kudla and McInish, 1988). Most of the restructuring activities taken place in India concentrate on merger and acquisitions starting with the attempt of Swaraj Paul's Escort takeover bid during pre-liberalization and they touched the peak after introduction of the new economic policy in 1991 (Vedpurishwar, 2001). But at the foothill of merger and acquisitions another attempt has also been made by different companies to increase shareholders' value and to give a snazzy shape to the firm in the form of demerger. Presently demerger is given a standing ovation by the companies since it comprises a set of reasons stated below that serve as drivers to achieve organizational excellence.

- Improving the overall organizational effectiveness and capabilities;

- Exploring the possible opportunities more efficiently;

- Transforming operational environment by internal restructuring of the organization;

- Increasing operating efficiency resorting to strategic adjustment;

- Strengthening control on the corporate activities; and

- Enhancing value of the organization and in turn of the shareholders.

Demerger on Indian Canvas

The demerger movement gained its strength in India when in paragraph 87 of the Union Budget 1999-2000 the then Finance Minister emphasized on demerger so that the companies can avail tax benefit and enhance shareholder's value. Consequently the dawn of 21st century of this country witnessed a raft of demergers for enhancing corporate values by raising efficiency and performance. In Indian context demerger is mainly driven by two reasons ? splitting up as

family settlement and hiving off for strategic gain (Sisodiya, 2001). As most of the private sector companies in India are family managed, partitions among siblings cause demerger. The prominent of this kind of demerger includes Reliance Communication Ventures Ltd, Reliance Natural Resources Venture Ltd and Reliance Capital Venture Ltd that spun-off from Reliance Industries Ltd. Demerger on the strategic ground can attract the example of Larsen and Toubro where Ultratech, the cement division was demerged to concentrate more on their core business infrastructure and engineering. Barring the two specific reasons mentioned earlier demerger is adopted by the companies with the aim of enhancing the future position and prospects of a parent and the spun-off subsidiary, and hence, focuses on reasons which are considered to be most plausible explanations for the anticipated positive effects on shareholder wealth. Among the recent notable demergers taken place on this line include ITC Ltd, TOMCO, Ahmedabad Advanced Mills, Godrej Soaps, Sterlite Industries, Wokhard, Eveready Industries, etc. Indian two-wheeler giant Bajaj Holdings and Investment Ltd spun its two divisions off into separate companies Bajaj Auto Ltd and Bajaj Finserv Ltd so that it can increase focus on the core business of automobiles. Similarly Apollo Hospitals Enterprise separated Apollo Mumbai Hospitals through demerger.

Literature Review

Literature, reflecting the experiences of past considered a number of interrelated areas ranging from expansion to contraction. Research showed that most of the mergers and acquisitions failed. It is interesting to hypothesize whether the reverse applies in demerger. As the corporate world is experienced with restructuring activities in the domain of merger and takeovers, the demerger is a very recent phenomenon with lower concentration compared to merger activities. But

people are there to think differently and as a result attention is now being focused on the process of demerger.

Desai and Jain (1999) examined whether an increase in focus is an explanation for the stock market gains associated with spin-offs. For a sample of 155 spin-offs between the years 1975 and 1991, the authors found that the announcement period as well the long-run abnormal returns for the focus-increasing spin-offs are significantly larger than the corresponding abnormal returns for the non-focus-increasing spin-offs.

Sisodiya (2001) attempted to analyze the strategies behind three demerger cases and performance of the off-shoots. The author answered the question – does demerger lead to shareholder value creation? The author concluded that in a diversified business, focus from shareholders and capital markets remain on the mainline business and only to a limited extent on the peripheral business, reflecting primarily the relative sizes of two activities, but after demerger the performance of both businesses becomes more visible.

Burch and Nanda (2003) investigated the diversity cost hypothesis of spin-offs by using post spin-off data to – i) reconstruct the diversified firm after the spin-off and assess the aggregate improvement in value; and ii) relate any value improvements to changes in diversity. They wanted to gauge the benefit from the spin-off by examining the change in the combined firms' excess value. They concluded that improvements in aggregate value depend significantly on changes in both a direct measure of diversity and measures based on industry proxies.

Dittmar (2003) examined how firms choose their initial capital structure in a corporate spin-off. The main issue addressed is whether there is an optimal or target capital structure for a firm and

how it chooses its leverage to achieve this target. The author concluded that the predicted leverage ratios are more likely to be close to the firm's optional leverage than the industry because the predicted ratios reflect the lower bankruptcy costs and thus lower cost of debt characteristics of larger firms.

Rose and Kiyohiko (2005) focused on the spin-off process and its performance implications. They compared the performance of 91 parent subsidiary pairs listed on major Japanese Stock exchange. Two performance measures are considered – sales growth and profit growth. They used two-sample sign test for the performance comparisons. The results showed that subsidiaries, on average, grow significantly faster than their parents in the first few years after listing. While the results related to profit growth rates show no significant differences between the performances of parents and subsidiaries.

Mallick and Rakshit (2006) studied and weighed the financial performance of Dabur India Limited before demerger with that of after they split their business into two segments with the help of traditional methods and EVA method of valuation. As Dabur India Limited separated its pharmaceutical business to a new company, Dabur Pharma Limited, the FMCG business has improved showing an improvement in all the profitability ratios compared to the years before demerger with that of the years after separation. Evaluation based on EVA method also shows the similar result.

Areas that Remain Unexplored

Most of the literatures reviewed so far concentrate on mergers and acquisitions analyzing the financial performance from the viewpoint of diversifying business activities, the risk associated and the return earned to defuse risk, and competitive advantage gained. A few studies can be identified with the contracting size of the

companies through demerger and their choice of capital structure during post demerger period, process of spin-off creation, methods of divestiture, increase in focus, and relatedness. A wide area of analysis remained untapped in the field of demerger. The evaluation of the corporate performance after demerger as compared to that of its pre-separation performance, measurement of the impact of separation on the share price movement of the demerged companies and whether the company is able to create value or destroys it after separation remained untouched in the existing literature. Thus, the existing literature leaves a scope to examine demerger as a tool to improve financial performance of the firm or to verify demerger as a value generating strategy.

Objectives, Data base and Methodology

Every effort carries with it some motivational pre-incidents that force academicians to explore the areas which still remain virgin. The present paper is also an outcome of that hidden forces flowing as under current in today's corporate activities. Theoretically claimed reasons in favour of demerger are rarely examined in Indian context as this type of restructuring got daylight only after 1999. Contracting size may be proved an important business-planning tool if financial performance of the companies are evaluated and compared both during pre- and post-demerger period giving a positive result. The movement of share price of demerged companies can provide an avenue to identify this restructuring activity as an important value creation strategy. Thus, a pertinent question needs to be answered, whether Indian corporate sector could combat the challenges maneuvering its activities through demerger, and how much darkness has been dispelled by the light of this type of restructuring activities. The objective of the present study will try to throw light on the aspects specified as –

- Evaluating the performance of the companies under study both during the pre and post demerger period to -
  - ⇨ trace the effectiveness of demerger activities in contrast to failure of merger; and
  - ⇨ weigh the soundness of the strategies adopted to execute demerger.
- Calculating and comparing the shareholders' value creation of post-demerger period with that of pre-demerger period to examine demerger as a striking and effective tool in value generation.
- Studying the movement of share prices both for the pre- and post-demerger period to find the impact of demerger on share price.

Analysis has been done for a total of twenty companies operating under different sectors viz paints, shipping, auto ancillaries, electronics etc. The study will be based on financial data procured from secondary sources. Moreover, the Capitaline Data Base package 2000 has also been consulted to procure data required for the study. We have selected seven years for our study period where three years have been for post-demerger period and three years have been for pre-demerger period. So, convenient sampling method has been applied for collection of sample. In order to select sample companies we identified twenty industries and the best performing company of that industry which had undergone demerger has been selected using convenient sampling method. Since we also wanted to analyze the change in financial performance of the non-demerged companies belonging to the same industries as the sample companies do, we also selected twenty control companies.

Formation of control is a crucial task which has been done by adopting the method of paired sample. Companies under the control sample is

selected by matching certain characteristics like the category of industry, size of the company in terms of turnover, market capitalization, capital employed, nature of the business undertaken by the company etc. The control company sample consists of the companies representing the best performing company of the said industry from which the demerged company has been selected. If the demerged company is the best performing company of that industry we have selected the next best company of that industry as control company. We have taken turnover as a percentage of capital employed to match the control company. To know whether demerged company and the control company belongs to the same class in respect of average turnover as a percentage of capital employed we have first calculated average turnover as a percentage of capital employed of the last 10 years before demerger took place, then we applied Paired t test to know if there is any significant difference between the two sets of companies. We have formulated null hypothesis (H_0) as there is no significant difference between the average turnovers as a percentage of capital employed of two sets of companies. This is tested against the alternative hypothesis (H_a) that there is significant difference between the average turnovers as a percentage of capital employed of two sets of companies. The average turnover as a percentage of capital employed of the companies of the last ten years has been given in Annexure - 1and the results of Paired t test is given in Annexure - 6. We observe that the p-value is 0.206 which is greater than 0.05. Hence the difference is not significant and we accept null hypothesis at 5% levelof significance. So, the alternative hypothesis is rejected. This signifies that there is no difference between the two sets of companies in terms of their average sales expressed as a percentage of capital employed. Following the above mentioned methodology, the demerged companies and their matching control companies

under the control sample are shown in Annexure - 2.

The companies' financial performance has been evaluated both through traditional system and modern system of evaluation. Under traditional system Return on Investment, Earning per Share, Return on Net worth, Payout Ratio and Dividend Per Share have been undertaken. Modern system of evaluation constitutes Economic Value Added, Market Value Added and Shareholders Value Added. Movement of share prices both during pre-and post-demerger period has been studied using kinked exponential model. Assistance of certain statistical tools has also been restored to for analyzing and interpreting the data as per the requirements of the study.

Studying Earning Per Share

In general consideration earning per share (EPS) is argued to be increased when any company's financial performance improves. As the important incidence taken place during the period under consideration is demerger it is expected that earning per share should increase after demerger. This is because demerger sheds those assets off whose earning capacity is poor. In general term we can go in favour of demerger if earning per share increases during post-demerger period, otherwise we will place an adverse opinion if earning per share decreases during the same period. We have studied EPS of the demerged companies and also of the resulting company. Moreover, we will study the average of the two to see the combined effect as the two companies were single company in pre-demerger period. Instead of studying the absolute value of EPS we have calculated relative value, i.e. earning per rupee value of shares (EPRVS) where the EPS has been divided by the face value of the share because this will put all the companies on same footing which will enable us smooth comparison. This is so because the face values of shares of different

companies are not same. Our analysis will remain incomplete if we do not consider the data of the control companies taken into consideration for study. So, same analysis has been performed on the control companies halving the period as pre-demerger and post-demerger. We have presented in Annexure - 5 the summary results of the demerged companies along with their spun-off companies and also of their control companies. We find that 90 per cent of the demerged and spun-off companies could raise their average EPRVS in period II whereas only 35 per cent of the control companies, i.e. the companies which did not undergo demerger drive, could raise their average EPRVS. Only 10 per cent of the demerged and spun-off companies failed to raise average EPRVS. This percentage is 65 in case of their corresponding control companies. Hence most of the demerged and spun-off companies could raise their average EPRVS after they had taken the strategic decision of demerger which the control company could not.

The above view cannot be supported unless it is statistically tested and verified. Average of the combined EPRVS of the demerged companies and spun-off companies and the average of control companies are presented in Annexure 3 and 4 respectively. Here we have applied Paired t test to find whether the apparent increase of EPRVS for most of the demerged companies and spun-off companies is statistically significant. The same test is also applied for the corresponding control companies. The null hypothesis is tested using Paired t test where the null hypothesis (H_0) is formulated as there is no significant difference between the average EPRVS of period I and the average EPRVS of period II. Obviously the alternative hypothesis (H_1) is that there is significant improvement in the average EPRVS of period II over the average EPRVS of period I. The test result is given in Annexure - 6. It is found that the p-value is 0.043 which is less than 0.05. It

indicates that the difference is significant. So we can say that the EPRVS has improved during period II. In case of control companies we also tested the same hypotheses using Paired t test. We observe that the p-value is 0.686 (Annexure – 6) which is greater than 0.05. This indicates that there is no significant difference between the means of EPRVS of period II and period I. Hence we can say that the EPRVS did not improve during period II. So, during the same period demerged companies and spun-off companies improved their EPRVS but the control companies could not. As the major event during this period is demerger we can attribute the improvement to demerger only.

Studying Dividend Per Share and Pay Out Ratio

In this section we have resorted to two traditional tools – dividend per share and payout ratio. It is expected that dividend per share of a company will increase if the financial performance of the company improves. Along with dividend per share payout ratio is also considered. If the company wants to maintain a stable dividend policy then payout ratio will fluctuate if the earning per share varies in different years. Moreover, higher payout ratio indicates lower retention ratio which is a barrier to growth. Hence high amount of dividend per share with lower payout ratio is expected for a better performing company. One thing should be noted here that the face values of shares of different companies are not same so it does not put the companies on same footing. Hence, we have calculated dividend per rupee value of shares (DPRVS). It is observed that 85 per cent of the demerged companies and spun-off companies could improve their average DPRVS in period II but only 50 per cent of the non-demerged companies could raise their average DPRVS Annexure – 5). Only 15 per cent of the demerged companies and spun-off companies deteriorated their DPRVS in period II and for control companies this percentage is 50.

Thus we find that almost all the companies which had undergone demerger could increase their average DPRVS after their decision to demerge, but the non-demerged companies failed to do so.

But this conclusion may not be concrete unless the results are statistically tested and verified. Average DPRVS of the demerged companies and spun-off companies and control companies have been presented in Annexure – 3 and 4 respectively. Now we have applied Paired t test to find whether the apparent increase of DPRVS for most of the demerged and spun-off companies are statistically significant. The null hypothesis is tested using Paired t test. We formulated the null hypothesis (H_0) as there is no significant improvement in the average DPRVS of period II over the average DPRVS of period I. The alternative hypothesis (H_1) is that there is significant improvement in the average DPRVS of period II over the average DPRVS of period I. The test result is given in Annexure - 6. It is clear that the p-value is 0.048 (Annexure – 6) which is less than 0.05. This means that the difference is significant. This means that the DPRVS has improved during period II over the DPRVS of period I. For control companies we have also tested same hypotheses using Paired t test. It is found that the p-value is 0.961 (Annexure - 6) which is greater than 0.05. This signifies that there is no improvement in the DPRVS in period II over period I. But in the same period the demerged companies and spun-off companies improved their DPRVS. Since the major event during this period is demerger we can say that the improvement is due to hiving off.

Summary result of Payout ratio of demerged companies, spun-off companies and control companies is presented in Annexure -3 and 4respectively. We find that only 40 per cent of the demerged and spun-off companies raised their payout ratio in period II whereas 60 per cent of the demerged companies and spun-off companies reduced their payout ratio indicating more

retention. Among the control companies only 20 per cent has raised their payout ratio and 80 per cent has reduced it. Hence, it is a good indication for the demerged and spun-off companies as we have seen that 85 per cent of them have raised DPRVS but only 40 percent has increased payout ratio. This means that the companies were able to pay more dividends as well as retain a large portion of profit for future growth. In case of control companies the result is 50:50 but the increase in payout ratio is only 20 per cent. But we have seen that most of the control companies could not improve DPRVS, so the reduced percentage of payout ratio does not give any good indication.

But this view cannot be supported unless it is statistically tested and verified. Average payout ratios of the demerged and spun-off companies and control companies are presented in Annexure – 3 and 4 respectively. The null hypothesis is tested using Paired t test where we have formulated null hypothesis (H_0) as there is no significant difference between the average payout ratio of period I and the average payout ratio of period II. The alternative hypothesis (H_1) is that there is significant improvement in the average payout ratio of period II over the average payout ratio of period I. We observe that the p-value is 0.111 (Annexure – 6) which is greater than 0.05. This implies that the difference is not significant at 5% level. In simple words we can say that the average payout ratio did not increase during period II over the average payout ratio of period I. Hence, we find that the companies were able to increase their dividend payment capacity without increasing their payout ratio. Here also for control companies we have applied Paired t test. We find that the p-value is 0.206 (Annexure – 6) i.e. greater than 0.05. This means that there is no difference between the means of payout ratio of period I and means of payout ratio of period II. So the demerged and spun-off companies and the control companies did not increase their payout ratio during period II.

But the DPRVS has improved for demerged and spun-off companies while it remains same for control companies. This means that keeping the payout ratio unaltered or by decreasing the payout ratio demerged and spun-off companies could improve their dividend paying capacity. Since during this period demerger is the only major event we can attribute this significant improvement to the shedding off.

Studying Return on Investment

One of the most important traditional tools to evaluate financial performance of a company is return on investment (ROI). It is expected that after demerger ROI is likely to increase since capital employed reduces after demerger. Here also we will compare ROI of the companies in post-demerger period with that of pre-demerger period. We will also compare the ROI position of the combined result of demerged companies and spun-off companies with that of control companies. The summary results have been presented in Annexure - 5 where we have included both the combined result of demerged companies and spun-off companies, and the control companies. It is observed that 75 per cent of the demerged and spun-off companies could raise their average ROI in period II whereas only 30 per cent of the non-demerged companies could raise their average ROI. Only 25 per cent of the demerged and spun-off companies failed to raise their average ROI as their average ROI has decreased during period II. This percentage is 70 in case of their corresponding control companies. Hence the table depicts the fact that most of the demerged and spun-off companies could increase their average ROI after they had undergone demerger, while the control companies could not.

We have performed a statistical test to justify our conclusion. Hence we present the average ROI of the demerged companies and control companies in Annexure – 3 and 4 respectively to apply Paired t test. By applying this test we can find whether

the apparent increase of ROI for most of the demerged and spun-off companies is statistically significant. The null hypothesis is tested using Paired t test where the null hypothesis (H_0) is formulated as there is no significant difference between the average ROI of period I and the average ROI of period II. Obviously the alternative hypothesis (H_1) is that there is significant improvement in the average ROI of period II over the average ROI of period I. The test result is given in Annexure – 6. It is observed that the p-value is 0.049 which is less than 0.05. It indicates that the difference is significant. In case of the control companies we also tested the same hypotheses using Paired t test. We find that the p-value is 0.748 (Annexure – 6) which is greater than 0.05. This signifies that there is no difference between the means of ROI of period II and the means of period I. As during the same period demerged and spun-off companies improved their ROI but control companies could not we can say that demerger brought some positive impact on the financial performance of the demerged and spun-off companies.

Studying Return on Net Worth

Return on net worth or shareholders' equity is calculated to see the profitability of the owners' investment. This traditional tool indicates how well the firm has used the resources of the owners. So, the study of RONW of the demerged companies and spun-off companies in pre- and post-demerger periods as well as of control companies is expected to help realize the impact of demerger on the profitability of the owners' investment. We have also compared the RONW of the combined result of demerged and spun-off companies with that of control companies. We have presented in Annexure5 the summary results of the demerged companies, spun-off companies and their control companies. We find that 65 per cent of the demerged and spun-off companies raised their RONW in period II

whereas 35 per cent of them failed to increase their RONW. Among the control companies only 30 per cent has raised their RONW and 70 per cent failed to raise it. Hence the table depicts the fact that most of the demerged and spun off companies could raise their average RONW after they had taken the strategic decision of demerger which the control company could not.

But this view cannot be supported unless it is statistically tested and verified. Average RONW of the demerged and spun-off companies and control companies has been presented in Annexure – 3 and 4 respectively. Here we have applied Paired t test to know whether the apparent increase of RONW for most of the demerged and spun-off companies is statistically significant. The null hypothesis is tested using Paired t test. We formulated the null hypothesis (H_0) as there is no significant improvement in the average RONW of period II over the average RONW of period I. Obviously the alternative hypothesis (H_1) is that there is significant improvement in the RONW of period II over the RONW of period I. We find that the p-value is 0.018 (Annexure – 6) which is less than 0.05. This means that the difference is significant. This means that the RONW has increased during period II over the RONW of period I. For corresponding control companies we have also applied Paired t test using same hypotheses. We find that the p-value is 0.495 (Annexure – 6) which is greater than 0.05. This signifies that there is no significant difference between the means of RONW of period

II and period I. During the same period demerged companies improved their RONW while control companies could not. As the major event during this period is demerger we can attribute this improvement to demerger only.

Studying Economic Value Added

Presently the most popular method for measuring financial health of a company is economic value

added. It is considered to be an effective as well as an efficient mechanism in measuring value generation ability of a business entity. By definition, EVA measures the economic profit earned over and above the cost of capital and is considered to be a technique which measures the true economic profit of a business firm. Hence, if demerger can bring some positive impact on the demerged companies the economic value added will increase in period II. Since EVA is an absolute value we have calculated EVA as a percentage of capital employed (EVACE) so that we can put all the companies on an equal footing. We have measured EVACE for each individual year during both period I and period II of the demerged companies and spun-off companies, as well as of control companies. Afterwards we have measured the average of both the periods to get them compared. Moreover, we have calculated combined average of demerged and spun-off companies. We have presented the summary results of the demerged companies along with their spun-off companies and control companies in Annexure – 5. We find that 95 per cent of the demerged companies along with spun-off companies could improve their average EVACE in period II but for the control companies it is 40 per cent. Only 5 per cent of the demerged and spun-off companies deteriorated their EVACE in period II and for control companies this percentage is 60. Hence from the table it is apparently seen that the percentage of demerged companies along with spun-off companies is more than the percentage of control companies which improved during period II.

But this conclusion may be erroneous unless the results are statistically tested and verified. Average EVACE of the demerged companies along with spun-off companies and control companies for both period I and period II has been presented in Annexure – 3 and 4 respectively. Now we have applied Paired t test to find whether the apparent

increase of EVACE for most of the demerged and spun-off companies are statistically significant. The null hypothesis is tested using Paired t test. We formulated the null hypothesis (H_0) as there is no significant improvement in the average EVACE of period II over the average EVACE of period I. The alternative hypothesis (H_1) is that there is significant improvement in the average EVACE of period II over the average EVACE of period I. The test result is given in Annexure - 6. It is observed that the p-value is 0.001 which is less than 0.05. This means that the difference is significant. In other words the null hypothesis is rejected at 5% level of significance and the alternative hypothesis is accepted. This means that EVACE has improved during period II over the EVACE of period I. For the control companies we have also tested the same hypotheses using Paired t test. It is clear that the p-value is 0.499 (Annexure

– 6) which is greater than 0.05. This signifies that there is no improvement in the average EVACE in period II over period I. But in the same period the demerged companies along with spun-off companies improved their average EVACE. Since, the major event during this period is demerger we can say that the improvement is due to separation.

Studying Market Value Added

One of the modern tools in evaluating financial performance is to evaluate Market Value Added (MVA). Here we calculate the spread between the market capitalization of a company and its book value of capital. This facilitates ascertainment of market value addition of a business entity. The higher the value of MVA the greater is the market value addition of a company. Since unlocking the hidden value of shares of companies is an important motive behind demerger, the market value of shares is likely to increase after demerger. Since MVA is an absolute value we convert them into relative figure so that all the companies may be put on a common footing. We calculated

market value added as a percentage of net worth (MVANW). In this section we have calculated MVANW of each individual year of the demerged companies, spun-off companies and also of control companies. Hence, we have calculated and compared average MVANW of period I and II of both demerged along with spun-off companies and control companies. If there is any positive impact of demerger the average MVANW of demerged companies along with their spun-off companies should increase in period II over period I and it should also increase over the average MVANW of control companies. The summary results have been presented in Annexure - 5 where we have included both the demerged, spun-off and control companies. It is observed that 65 per cent of the demerged companies along with their spun-off companies could raise their average MVANW in period II whereas only 25 per cent of the non-demerged companies could raise their average MVANW. Only 35 per cent of the demerged companies failed to raise their average MVANW in period II. The percentage is 75 in case of their control companies. Hence, we observe that most of the demerged companies along with their spun-off companies could increase their average MVANW after they had undergone demerger, while the control companies could not.

We have resorted to a statistical test to justify our conclusion. We present the average MVANW of the demerged and spun-off companies and control companies in Annexure – 3 and 4 respectively to apply Paired t test. By applying this test we can find whether the apparent increase of MVANW for most of the demerged and spun-off companies is statistically significant. The null hypothesis is tested using Paired t test where the null hypothesis (H_0) is formulated as there is no significant difference between the average MVANW of period I and the average MVANW of period II. Obviously the alternative hypothesis (H_1) is that there is significant improvement in the average

MVANW of period II over the average MVANW of period I. The test result is given in Annexure - 6. It is observed that the p-value is 0.007 which is less than 0.05. It indicates that the difference is significant. Hence we can say that the average MVANW has improved during period II. In case of control companies we also tested same hypotheses using Paired t test. We observe that the p-value is 0.807 (Annexure – 6) which is greater than 0.05. This signifies that there is no difference between the average MVANW in period II and average MVANW of period I. Hence we can say that the MVANW did not improve during period II. As during the same period the demerged companies along with spun-off companies improved their average MVANW but the control companies could not we may say that demerger brought some positive change in the financial health of the demerged companies.

Studying Shareholders Value Added

In addition to EVA and MVA shareholders value added (SVA) is considered to be another modern tool to evaluate financial performance of the company. SVA measures the value addition of the shareholders of a company. It considers both realized and unrealized gain. Since we have adopted market value approach in measuring SVA, it is the sum of MVA and other realized gain like dividend received, benefit from right issue, bonus issue etc. Since demerger unlocks the hidden value of the organization it is expected that after demerger the SVA will increase. Since SVA is an absolute value we have calculated SVA as a percentage of net worth (SVANW) to put all the companies on a uniform scale. In this section we have calculated SVANW of each individual years for both period I and II of the demerged companies along with their spun-off companies as well as of control companies. Then we have compared the average SVANW of period II with the average SVANW of period I. We have also compared individual year wise SVANW of the demerged and spun-off companies with that of

control companies along with their average in two different periods. If there is any positive impact of demerger the average SVANW of demerged companies along with their spun-off companies in period II will increase over period I and will also increase over the average SVANW of control companies. The summary results have been presented in Annexure – 5 where we have included the demerged companies along with their spun-off companies and control companies. It is observed that 65 per cent of the demerged companies along with their spun off companies could raise their average SVANW in period II whereas only 20 per cent of non-demerged companies could raise their average SVANW. Only 35 per cent of the demerged and spun-off companies failed to raise their average SVANW as it has decreased during period II. This percentage is 80 in case of their control companies. Hence, we find that most of the demerged and spun-off companies could increase their average SVANW after they had undergone demerger, while the control companies could not.

We have performed a statistical test to justify our conclusion. Hence we present the average SVANW of the demerged and spun-off companies and control companies in Annexure – 3 and 4 respectively to apply Paired t test. By applying this test we can find whether the apparent increase of SVANW for most of the demerged and spun-off companies are statistically significant. The null hypothesis is tested using Paired t test where the null hypothesis (H_0) is formulated as there is no significant difference between the average SVANW of period I and the average SVANW of period II. Obviously the alternative hypothesis (H_1) is that there is significant improvement in the average SVANW of period II over the average SVANW of period I. The test result is given in Annexure – 6. It is clear that the p-value is 0.024 which is less than 0.05. It indicates that the difference is significant. Hence, we can say that the average SVANW has improved during period

II. In case of control companies we also tested same hypotheses using Paired t test. We find that the p-value is 0.376 (Annexure – 6) which is greater than 0.05. This indicates that there is no significant difference. Hence we may say that the average SVANW did not improve during period II. As during the same period the demerged and spun-off companies improved their average SVANW but the control companies could not we may say that demerger brought some significant changes in the financial health of the demerged and spun-off companies.

Studying Share Price Growth

Theoretically it is believed that demerger unlocks the hidden values of a company. So, it is expected that the share price of a company will increase after demerger takes place. Although there are various factors which influence the share price of a company. So, it will be unwise to consider demerger as the only factor for increase in share price. But if we consider a very short period then it will be easier to conclude that the change in share price is due to demerger. So, we have considered only 15 trading days during pre-demerger period and 15 trading days during post-demerger period. This will help us trace the change, if any, in the post-demerger period. Moreover we want to compare growth rate between two periods and also with the growth rate of control companies and market index. Comparison of growth rates of the three will help us reach conclusion that demerger has any positive impact or not. We have adopted an econometric model known as Kinked Exponential Model where the sub-period growth rates of share prices of the demerged companies, control companies and market index Nifty have been estimated. This is done to have an idea regarding the rate of change in share prices in pre-demerger period and post-demerger period. The increase or decrease in growth rate (Annexure – 7) has been calculated using the coefficient of the periods such as t_1d_1 and $t_1 d_2$ This is done using the following formula –

Percentage change in growth rate

$$= \frac{t_1d_2 - t_1d_1}{t_1d_1} \times 100$$

Moreover, their statistical significance is tested using t statistic. We have also measured Adjusted R_2 and F-Statistic to know whether the model is a good fit for the study. In addition we have calculated Durbin-Watson Statistic to know whether the study suffers from any auto-correlation problem.

The result (Annexure – 5) suggests that growth rate of eighteen out of twenty demerged companies increased in post-demerger period. Only in case of two companies the growth rate has decreased in post-demerger period. If we express this in terms of percentage we will see that in case of ninety per cent of the companies the growth rate has increased and only in case of ten per cent of the companies the growth rate has decreased. Moreover, in case of nine companies there was negative growth rate in pre-demerger period but in post-demerger period only one company shows a negative growth rate. Hence, a promising result is observed in the growth rate of share prices of demerged companies. If we look at the non-demerged companies we will see that growth rate of only six companies has increased in post-demerger period and for fourteen companies the growth rate has decreased in post-demerger period. Hence, only in thirty per cent cases there was an increase in growth rate and in seventy percent cases the growth rate decreased. Moreover, for six companies there was a negative growth rate in pre-demerger period but in post-demerger period it has increased to eight companies. Compared to the demerged companies this result is very poor. For market index the situation is even poorer. Only growth rate in three industries has increased during post-

demerger period and for seventeen industries the growth rate has decreased in the same period. Thus, only in fifteen per cent cases the growth rate has increased but in eighty five per cent cases it has decreased. Moreover, the negative growth rate in pre-demerger period was in three cases but in post-demerger period the negative growth rate is observed in five cases. If we compare the results of demerged companies, non-demerged companies and market index we will see that most of the demerged companies are in a favourable position in terms of increase in share price growth during post-demerger period but the non-demerged companies and market index are in a poor condition. So, it may be concluded that demerger has a positive impact on the share price growth of the companies.

Conclusion

The study has yielded a number of valuable findings, which are far-reaching consequences for policy formulation and decision making by the demerged and spun-off companies. In essence, this comprehensive research effort is expected to be useful and would attract due interest of corporate managers, stock market players and intermediaries, investors, corporate practitioners, policy makers, academicians and of course, of future researchers. This study is undertaken to know how far corporate restructuring through demerger improves financial performance and share price of the companies. So, the outcomes of the study will also have significant impact on the companies contemplating demerger in near future.

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Annexure – 1: Average Turnover as a percentage of Capital Employed

Demerged Companies		Control Companies	
Name of the Companies	Average	Name of the Companies	Average
Akzo Nobel	89.58	Asian Paints	112.42
Bajaj Holdings	126.28	Reliance Capital Ltd	169.43
EIH	103.52	Hotel Leela Venture	79.58
Eveready Industries	171.28	Nippo	131.62
Excel Industries Ltd	147.36	Bharat Rasayan Ltd	113.62
GE Shipping	201.56	Shipping Corporation of India	182.46
JK Tyres and Industries	163.73	MRF	195.81
LG Balakrishnan	70.68	Amtek India	64.34
MVL Industries	112.59	Bharat Electronics Ltd	171.23
Nahar Polyfilms Ltd	142.26	VardhmanTextiles Ltd	110.64
NIIT	178.74	Aptech	78.36
P&G Hygiene	215.36	Hindustan Unilever Ltd	248.78
Parrys Sugar	64.27	Triveni Engineering	52.16
Pidilite Industries	126.82	Aarti Industries	73.17
Rallis India	92.47	United Phosphorous	110.49
REI Agro	73.54	KRBL	68.26
Rane Brake Lining	121.45	Sundaram Brake Lining	112.38
RSWM	68.17	Sangam (India)	52.47
S Kumars Nationwide	124.34	Alok Industries	75.47
Sun Pharma Industries	158.68	Ranbaxy Laboratories	178.36

Source: Self-Generated Data

Annexure – 2: List of Demerged and Control Companies

Demerged Companies	Date of Demerger	Year of Demerger	Method of Demerger	Spun-off/Split-off companies	Control Companies	Industry
Akzo Nobel	29.06.06	7-Jun	Spin-off	Akzo Nobel Chemicals	Asian Paints	Paints
Bajaj Holdings	18.12.07	8-Jul	Split-off	Bajaj Auto Ltd	Reliance Capital Ltd	Financial Services
EIH	24.01.06	6-May	Spin-off	EIH Associated Hotels Ltd	Hotel Leela Venture	Large Hotels
Eveready Industries	25.02.05	5-Apr	Spin-off	McLeod Russel India Ltd	Nippo	Dry Cells
Excel Industries	23.12.05	6-May	Spin-off	Excel Crop Care	Bharat Rasayan Ltd	Agro Chemicals
GE Shipping	15.09.05	6-May	Spin-off	Great Offshore Ltd	SCI	Large Shipping
JK Tyres	11.08.06	7-Jun	Spin-off	NetflierFinco	MRF	Large Tyres
LG Balakrishnan	31.12.07	8-Jul	Spin-off	LGB Auto Products Ltd	Amtek India	Auto Ancilliaries
MVL Industries	04.12.06	7-Jun	Spin-off	Media Video	Bharat Electronics	Electronics
NaharPolyfilms	31.03.06	6-May	Spin-off	Nahar Spinning Mills	Vardhman Textiles	Hosiery/Knitwear
NIIT	13.08.04	5-Apr	Spin-off	NIIT Technologies	Aptech	Education
Parrys Sugar	14.08.06	7-Jun	Spin-off	GMR Industries	Triveni Engineering	Integrated
Pidilite Industries	21.03.07	7-Jun	Spin-off	Vinyl Chemicals	Aarti Industries	Large Organic
P& G Hygiene	12.07.05	6-May	Spin-off	P& G Home Products Ltd	Hindustan Unilever Ltd	Multinational Health Care
RSWM	28.11.07	8-Jul	Spin-off	Bhilwara Spinners	Sangam (India)	Synthetic/Blended
Rallis India	16.05.05	6-May	Spin-off	Sterling Biotech	United Phosphorous	Pesticides
Rane Brake Lining Ltd	19.02.08	8-Jul	Spin-off	Rane Engine Valves Ltd	Sundaram Brake Lining Ltd	Automotive
REI Agro	29.08.07	8-Jul	Spin-off	Harrington Commercials	KRBL	Rice
S Kumars	26.02.08	8-Jul	Spin-off	Brand House Retails Ltd	Alok Industries	Weaving
Sun Pharma Industries	10.02.06	6-May	Spin-off	SPARC Ltd	Ranbaxy Laboratories	Bulk Drugs and Formalin Large

Source: Official Websites of the Respective Companies

Annexure – 3: Average Results of Demerged Companies

Name of the Companies	EPRVS		DPRVS		Pay-out		ROI		RO NW		EVACE		MVANW		SVANW	
	P-I	P-II	P-I	P-II	P-I	P-II	P-I	P-II	P-I	P-II	P-I	P-II	P-I	P-II	P-I	P-II
Akzo Nobel and Akzo Nobel Chemicals	1.82	3.25	0.8	1.75	51.17	42.33	13.98	18.78	10.24	13.39	1.5	25.33	69.97	80.16	76.15	86.52
Bajaj Holdings and Investment and Bajaj Auto	3.94	10.42	0.59	1.66	15.34	13.87	16.36	19.07	18.26	23.18	8.43	15.3	10.75	225.36	13.09	68.29
EIH and EIH Associated Hotels	0.15	0.24	0.33	0.8	66.48	50.58	6.38	25.21	3.29	18.5	**-2.55**	8.56	1.09	11.12	2.89	16.77
Eveready Industries and McLeod Russel	0.13	1.51	0.43	0.89	62.19	45.23	6.98	9.14	2.16	5.58	**-4.96**	5.13	0.23	1.03	2.73	7.47
Excel Industries and Excel Crop Care	2.15	0.45	0.9	0.27	28.08	19.55	28.41	13.66	16.68	11.06	3.61	**-1.34**	154.79	**-62.87**	161.13	-72.33
GE Shipping and Great Off Shore	25.05	67.69	96.67	80.35	29.41	17.88	17.94	16.97	30.17	23.91	7.24	12.64	465.72	496.24	1588.5	1021.92
JK Tyres and Industries and Netflier Finco	0.41	1.67	0.22	0.29	54.24	26.97	7.1	13.58	2.71	14.52	**-12.07**	5.42	9.85	30.3	10.9	25.74
LG Balakrishnan and LGB Auto Products	0.21	1.53	0.53	0.69	26.27	38.2	18.23	20.72	18.96	18.19	3.79	11.91	29.98	53.97	24.32	61.94
MVL Industries and Media Video	0.31	0.74	0.4	0.68	34.27	53.36	14.71	16.19	12.75	11.99	**-4.01**	5.11	50.49	39.21	65.43	52.34
Nahar Polyfilms Ltd and Nahar Spinning Mills	1.6	0.84	0.27	0.29	19.28	22.07	9.88	3.56	10.73	4.76	2.93	3.07	41.02	**-66.33**	43.56	-42.26
NIIT and NIIT Technologies	0.3	0.76	0.32	0.6	46.98	57.87	4.18	12.99	4.01	10.65	2.54	6.66	**-7.45**	16	-5.34	21.99
Parrys Sugar and GMR Industries	0.58	1.23	0.2	0.39	35.42	35.47	12.14	14.23	16.82	20.26	4.51	5.32	114.66	121.85	129.68	201.03
Pidilite Industries and Vinyl Chemicals	21.37	28.57	9.72	13.34	36.06	34.82	28.92	26.57	22.01	28.12	7.61	13.61	88.2	139.61	156.44	205.04
Procter and Gamble Hygiene and P&G Home Products	2.91	3.73	2.08	2.21	70.06	52.76	56.37	58.84	40.43	44.49	23.18	31.48	155.67	170	189.81	184.94
RSWM and Bhilwara Spinners	1.26	2.67	0.29	0.66	23.32	22.71	8.3	9.41	11.79	26.59	1.19	3.65	24.51	60.99	27.19	67.31
Rallis India and Sterling Biotech	1.39	5.9	0.03	1.1	1.62	21.27	10.71	28.09	27.32	25.28	**-0.07**	19.56	2.79	2.7	3.07	7.42
Rane brake Lining Ltd and Rane Engine Valves	1.03	5.07	0.4	1.33	27.17	36.51	28.39	30.76	15.78	29.98	4.27	11.33	30.58	21.24	34.84	41.12
REI Agro and Harrington Commercials	15.65	24.86	1.67	2.5	12.32	9.98	15.03	16.77	22.49	22.27	3.8	4.72	51.32	150.28	73.94	155.99
S Kumars Nationwide and Brandhouse Retail	0.44	0.55	0.2	0.28	14.3	29.78	6.61	12.86	15.19	16.13	4.41	6.67	236.15	69.3	148.78	89.64
Sun Pharma Industries and SPARC	4.34	6.92	1.02	1.87	23.4	23.11	29.67	26.92	33.6	34.55	14.52	15.77	44.38	37.25	51.04	37.69

Annexure – 4: Average Results of Control Companies

Name of the Companies	EPRVS		DPRVS		Pay-out		ROI		RONW		EVACE		MVANW		S VANW	
	P-I	P-II	P-I	P-II	P-I	P-II	P-I	P-II	P-I	P-II	P-I	P-II	P-I	P-II	P-I	P-II
Asian Paints	1.63	4.24	1.02	2.05	62.17	44.21	44.93	64.2	31.85	46.37	16.17	32	227.14	293.2	290.98	67.85
Reliance Capital Ltd	5.75	4.74	2.15	1.07	37.16	24.55	24.58	15.15	19.03	14.68	9.91	7.69	30.09	10.32	39.79	-6.98
Hotel Leela Venture	0.16	0.18	0.1	0.22	15.4	15.13	6.71	10.2	6.51	18.75	**-0.18**	3.94	4.58	**-5.1**	4.58	-2.44
Nippo	4.64	2.59	1.8	1.75	38.68	74.09	28.91	14.19	19.25	9.42	9.07	3.33	30.87	9.16	37.67	14.85
Bharat Rasayan Ltd	4.17	1.04	3.75	0.13	30.49	18.85	38.47	5.06	25.79	1.21	13.26	10.94	63.94	**-88.87**	85.35	-88.42
Shipping Corporation of India	20.29	39.94	90	78.33	43.29	28.76	17.26	16.1	26.53	17.5	11.34	9.42	190.21	6.98	1819.88	453.61
MRF	11.44	58.55	2	3.17	21.02	5.4	7.31	19.34	5.53	19.1	**-0.64**	6.72	42.34	73.64	43.45	27.84
Amtek India	7.89	3.15	0.4	0.16	7.64	5.48	13.77	7.57	26.97	5.06	6.02	**-0.49**	38.31	0.31	39.99	0.56
Ltd	5.44	9.22	1.19	1.95	22.47	21.2	47.73	32.56	31.41	22.42	18.39	11.19	181.17	32.05	187.09	36.24
Vardhman Textiles Ltd	2.82	2.46	0.44	0.33	20.23	13.84	13.64	8.34	13.69	11.46	4.83	2.28	21.37	**-33.47**	23.44	-49.36
Aptech	0.02	0.02	0.06	0.02	32.5	25.69	7.5	3.61	9.96	4.71	**-6.55**	**-2.93**	1.13	8.43	1.55	8.63
Triveni Engineering	12.38	4.68	6	7.83	11.05	17.29	21.19	13.99	39.51	14.14	13.62	3.65	239.64	79.44	267.59	101.84
Aarti Industries	3.11	1.64	0.72	0.47	28.41	29.08	18.5	19.95	22.67	19.88	6.26	2.89	87.38	17.92	97.08	22.94
Hindustan Unilever Ltd	5.6	8.24	5.17	7.67	82.41	77.25	52.73	109.96	60.67	97.2	41.36	98.96	**-320.92**	**-246.35**	-41.97	122.73
Sangam (India)	0.63	0.62	0.12	0.11	19.15	16.92	10.72	8.59	19.12	9.02	2.94	1.08	69.01	7.77	72.04	9.65
United Phosphorous	5.8	2.08	0.23	0.78	13.61	40.67	14.23	8.22	11.46	6.71	3.79	0.92	79.99	22.3	81.3	25.04
Sundaram Brake Lining Ltd	10.85	2.96	5.67	14	53.26	48.77	19.68	17.15	13.55	25.47	2.78	8.06	39.89	27.05	106.02	127.53
KRBL	1.48	0.92	0.02	0.03	17.8	7.98	12.39	15.86	14.74	18.93	3.16	4.25	3.82	4.76	4.02	2.25
Alok Industries	0.71	0.59	0.13	0.04	18.33	6.98	10.66	9.49	16.6	12.26	1.7	2.8	22.39	3.33	24.68	33.62
Ranbaxy Laboratories	5.46	1.23	1.7	1.7	94.58	58.75	25.64	14.18	22.28	16.86	12.33	0.43	117.26	1.06	130.44	8.83

Annexure – 5: Summary Results

EPRVS				
Change	**Demerged and Spun-off**		**Control Companies**	
	Number	Percentage	Number	Percentage
Increase in EPRVS	18	90	7	35
Decrease in EPRVS	2	10	13	65
Total	20	100	20	100
DPRVS				
Increase in DPRVS	17	85	10	50
Decrease in DPRVS	3	15	10	50
Total	20	100	20	100
Pay-out Ratio				
Increase in Pay-out Ratio	8	40	4	20
Decrease in Pay-out Ratio	12	60	16	80
Total	20	100	20	100
ROI				
Increase in ROI	15	75	6	30
Decrease in ROI	5	25	14	70
Total	20	100	20	100
RONW				
Increase in RONW	13	65	6	30
Decrease in RONW	7	35	14	70
Total	20	100	20	100
EVACE				
Increase in EVACE	19	95	8	40
Decrease in EVACE	1	5	12	60
Total	20	100	20	100
MVANW				
Increase in MVANW	13	65	5	25
Decrease in MVANW	7	35	15	75
Total	20	100	20	100
SVANW				
Increase in SVANW	13	65	4	20
Decrease in SVANW	7	35	16	80
Total	20	100	20	100

Share Price Growth						
	Demerged Companies		**Control Companies**		**NIFTY**	
	Number	Percentage	Number	Percentage	Number	Percentage
Increase in Growth Rate	18	90	6	30	3	15
Decrease in Growth Rate	2	10	14	70	17	85
Total	20	100	20	100	20	100

Annexure – 6: Paired Samples Test

	Paired Differences					t	df	Sig
				95% Confidence interval of the Difference				(2 tailed)
Average Turnover as a % of Capital	**Mean**	**Std. Deviation**	**Std. Error Mean**	**Lower**	**Upper**			
Employed	12.127	41.41499	9.26067	-7.25581	31.50981	1.31	19	0.206
EPVRS of Demerged Companies	-4.90671	11.58082	2.58955	-10.3267	0.51328	-2.102	19	0.043
EPVRS of Control Companies	-1.0406	11.31719	2.5306	-6.33721	4.25601	-0.411	19	0.686
DPVRS of Demerged Companies	-0.8958	1.89219	0.42311	-1.78137	-0.01023	-2.117	19	0.048
DPVRS of Control Companies	0.03847	3.50093	0.78283	-1.60001	1.67696	0.049	19	0.961
Pay-out Ratio of Demerged Companies	5.566	14.89734	3.33115	-1.40617	12.53817	1.671	19	0.111
Pay-out Ratio of Control Companies	4.438	15.14511	3.38655	-2.65013	11.52613	1.31	19	0.206
ROI of Demerged Companies	-2.3235	7.1591	1.60082	-5.67406	1.02706	-2.093	19	0.049
ROI of Control Companies	1.29	17.70739	3.95949	-6.99731	9.57731	0.326	19	0.748
RONW of Demerged Companies	-6.05	10.4925	2.34619	-10.96064	-1.13936	-2.579	19	0.018
RONW of Control Companies	2.2985	14.7828	3.30553	-4.62006	9.21706	0.695	19	0.495
EVACE of Demerged Companies	-6.7505	7.00419	1.56618	-10.02856	-3.47244	-4.31	19	0.001
EVACE of Control Companies	-2.1395	13.88572	3.10494	-8.63822	4.35922	-0.689	19	0.499
MVANW of Demerged Companies	47.859	71.06407	15.89041	14.59999	81.11801	3.012	19	0.007
MVANW of Control Companies	3.229	58.21216	13.01664	-24.01513	30.47313	0.248	19	0.807
SVANW of Demerged Companies	92.6115	169.4072	37.88059	13.32651	171.89649	2.445	19	0.024
SVANW of Control Companies	23.7945	117.3812	26.24724	-31.14161	78.73061	0.907	19	0.376

Annexure – 7: Results of Kinked Exponential Growth Model

Variable	Coefficient	t-Statistic	p-Value	Coefficient	t-Statistic	p-Value	Coefficient	t-Statistic	p-Value
	Akzo Nobel			**Asian Paints**			**Nifty**		
t_1d_1	0.0038	2.1082	0.0497	-0.0031	-4.7216	0.00006	0.0039	1.6231	0.0725
t_1d_2	0.0057	3.2361	0.0032	-0.0044	-0.7199	0.47776	0.0034	4.0375	0.0004
% change	500.00 % increase			41.93 % increase			12.82 % decrease		
	Bajaj Holdings			**Reliance Capital**			**Nifty**		
t_1d_1	0.0011	0.3871	0.70173	0.0029	1.46	0.15582	0.0039	3.3735	0.00226
t_1d_2	0.0032	2.2253	0.04652	0.0015	0.8115	0.42416	0.0006	0.6042	0.55073
% change	190.90 % increase			48.27 % decrease			84.61 % decrease		
	EIH			**Hotel Leela Venture**			**Nifty**		
t_1d_1	0.0105	2.6004	0.01492	0.0073	2.2893	0.03011	0.0013	11006	0.2808
t_1d_2	0.0317	2.8316	0.01249	0.0087	1.0215	0.31609	0.0031	2.8368	0.0085
% change	201.90 % increase			19.17 % increase			138.46 % increase		
	Eveready Industries			**Nippo**			**Nifty**		
t_1d_1	-0.0014	-0.5096	0.61448	0.0046	4.3979	0.00015	0.0013	0.3937	0.6969
t_1d_2	0.0149	5.9391	<0.00001	0.0003	0.2907	0.7735	-0.0047	-1.4775	0.1511
% change	1164.23 % increase			93.47 % decrease			461.53 % decrease		
	Excel Industries			**Bharat Rasayan**			**Nifty**		
t_1d_1	-0.0143	-1.8025	0.08264	-0.0078	-2.1363	0.04337	-0.0006	-0.2013	0.84197
t_1d_2	-0.0206	-2.7801	0.000978	-0.0589	-1.5326	0.137	-0.0044	-1.6026	0.12066
% change	44.05 % decrease			655.12 % decrease			633.33 % decrease		
	G E Shipping			**Shipping Corporation of India**			**Nifty**		
t_1d_1	-0.0031	-0.9148	0.36838	-0.0042	-2.1399	0.04155	0.0009	0.5161	0.6099
t_1d_2	0.016	4.4298	0.00014	0.0006	0.3159	0.7545	0.0003	0.1997	0.8432
% change	616.12 % increase			114.28 % increase			66.67 % decrease		
	JK Tyres			**MRF**			**Nifty**		
t_1d_1	0.0048	1.6172	0.11746	0.0055	1.0928	0.28414	0.0069	7.7841	<0.00001
t_1d_2	0.0282	8.8713	<0.00001	0.0023	0.5491	0.58747	0.0034	4.1737	0.00028
% change	487.5 % increase			58.18 % decrease			50.72 % decrease		
	LG Balakrishnan			**Amtek India**			**Nifty**		
t_1d_1	0.2301	8.1382	<0.00001	0.0029	1.1686	0.25278	0.0043	8.7417	<0.00001
t_1d_2	0.2888	11.0388	<0.00001	0.004	1.7293	0.0952	0.0041	3.3713	0.00046
% change	25.51 % increase			37.93 % increase			4.65 % decrease		
	MVL Industries			**Bharat Electronics Ltd**			**Nifty**		
t_1d_1	0.0131	1.2372	0.22667	0.0188	6.5987	<0.00001	0.0018	1.1594	0.25646
t_1d_2	0.0102	0.8998	0.3762	-0.0078	-2.9638	0.00628	-0.0016	-1.1165	0.27405
% change	22.13 % decrease			141.48 % decrease			188.89 % decrease		
	Nahar Polyflims Ltd			**Vardhman Textiles**			**Nifty**		
t_1d_1	0.0048	2.4948	0.0465	-0.0021	-0.3142	0.7557	0.0057	4.879	0.00004
t_1d_2	0.0116	3.3612	0.00233	-0.0104	-1.4582	0.1563	0.0029	2.6503	0.01328
% change	141.67 % increase			395.23 % decrease			49.12 % decrease		

Annexure – 7: Results of Kinked Exponential Growth Model

Variable	Coefficient	t-Statistic	p-Value	Coefficient	t-Statistic	p-Value	Coefficient	t-Statistic	p-Value
	NIIT			**Aptech**			**Nifty**		
t_1d_1	-0.0027	-0.5326	0.59864	0.0033	2.5551	0.01657	0.0049	8.9421	<0.00001
t_1d_2	0.0059	2.1026	0.04799	-0.0074	-5.3129	0.00001	0.0034	6.6998	<0.00001
% change	318.51 % increase			324.24 % decrease			30.61 % decrease		
	Parrys Sugar			**Triveni Engineering**			**Nifty**		
t_1d_1	-0.0019	-0.5021	0.61968	-0.0053	-3.3668	0.0023	0.006	8.8468	<0.00001
t_1d_2	0.0043	2.4217	0.02501	-0.0109	-6.4771	<0.00001	0.0034	5.3861	0.00001
% change	326.31 % increase			105.66 % decrease			30.61 % decrease		
	Pidilite			**Aarti Industries**			**Nifty**		
t_1d_1	-0.002	-1.4383	0.16183	0.0121	7.9753	<0.00001	0.0071	0.4668	0.64439
t_1d_2	0.0038	2.8793	0.00771	-0.0085	-5.1728	0.00002	0.0054	3.8844	0.0006
% change	290.00 % increase			170.24 % decrease			23.94 % decrease		
	P&G			**Hindustan Unilever Ltd**			**Nifty**		
t_1d_1	0.0398	1.3015	0.20407	0.0024	0.009	0.99291	0.0043	8.4612	<0.00001
t_1d_2	0.7099	2.4812	0.01962	0.0037	2.2287	0.03435	0.0004	0.6879	0.49739
% change	1683.66 % increase			54.16% increase			90.69 % decrease		
	RSWM			**Sangam (India)**			**Nifty**		
t_1d_1	0.0273	4.1029	0.00034	0.0173	3.6864	0.00101	0.0021	0.0505	0.96009
t_1d_2	0.0313	5.0372	0.00003	0.0047	0.9344	0.3584	0.0013	0.5491	0.58742
% change	14.65 % increase			72.83 % decrease			38.09 % decrease		
	Rallis India			**United Phosphorous**			**Nifty**		
t_1d_1	0.0022	0.9425	0.3543	0.0092	0.0326	0.9742	0.0013	1.3499	0.18827
t_1d_2	0.0083	3.9316	0.00053	0.0066	5.3185	0.00001	0.0039	4.3402	0.00018
% change	277.27 % increase			28.26 % decrease			200.00 % increase		
	Rane Brake Lining			**Sundaram Brake Lining**			**Nifty**		
t_1d_1	-0.0018	-1.2566	0.21968	0.0072	4.8482	0.00005	0.0034	4.0375	0.0004
t_1d_2	0.005	3.6372	0.00115	0.0024	1.7572	0.09022	-0.0004	-0.4347	0.66727
% change	377.77 % increase			66.67 % decrease			111.76 % decrease		
	REI Agro			**KRBL**			**Nifty**		
t_1d_1	0.023	8.1382	<0.00001	0.0023	0.5444	0.5906	-0.001	-0.4528	0.65432
t_1d_2	0.0289	11.0388	<0.00001	0.0038	0.9559	0.34762	0.0062	2.8949	0.00742
% change	25.65 % increase			65.21 % increase			520.00 % increase		
	S Kumars Nationwide			**Alok Industries**			**Nifty**		
t_1d_1	-0.0166	-2.5218	0.01788	-0.0057	-2.1079	0.03921	-0.0052	-0.2271	0.82207
t_1d_2	0.0061	2.8715	0.00021	-0.0058	-1.0178	0.3178	-0.0087	-4.0728	0.00036
% change	136.74 % increase			1.75 % decrease			67.30 % decrease		
	Sun Pharma			**Ranbaxy Laboratories**			**Nifty**		
t_1d_1	-0.0049	-0.2504	0.80421	0.0079	3.1944	0.00355	0.0038	4.2867	0.00021
t_1d_2	0.0126	6.0833	<0.00001	0.0039	1.6975	0.1011	0.0023	2.8542	0.00819
% change	357.14 % increase			50.63 % decrease			39.47 % decrease		

Market Efficiency in Emerging Economics:

An Empirical Analysis

Dr Pradipta Kumar Sanyal,

Dr(Prof) Padma Gahan, Mr.Smarajit Sen Gupta

Abstract

The objective of this paper is to test the Stock Market Efficiency in Emerging Economics. With the Markets integration, fast transmission of information, technological developments across globe and also structural developments of stock markets particularly in emerging economics lead us to believe that stock markets in emerging countries turned efficient. However, research outcomes of existing literatures suggest mixed results. This draws to revisit the topic on market efficiency or random walk behaviour considering the emerging market for the study. In this paper an attempt is being made to test the random walk behavior of stock markets of 10 emerging economics and hence concentrate on India, China, Indonesia, Sri Lanka, Pakistan, Russia, Brazil, Turkey, Mexico, and Hong Kong. Reviews of literatures on market efficiency have been done for both developed and emerging economies. Findings of the study mostly suggest absence of random walk behaviour in the emerging markets and also reconcile previous results. The findings of this study could help investors in forming their investment decisions.

Key words: Stock Market Efficiency, Martingale Hypothesis, Random Walk, Variance Ratio Test

JEL Classification: - G1, G14

Introduction

Efficient market hypotheses (EMH), hypothesized price behavior are random in nature or price follows a random behavior. This suggests that prices in stock market cannot be predicted or prices are not predictable. The efficient market hypotheses also popularly known as random walk theory, suggests that current stock prices fully reflect all available information about the value of the firm and so there is no scope of earning excess profit in the stock market. However on the contrary if the markets are not efficient, then prices are predictable and arbitrage opportunity cannot be ignored. The concept of "efficient market" was first investigated in 1965 in a paper by E.F Fama, who said that in an efficient market, on average, completion will cause the full effects of new information on intrinsic values to be reflected "instantaneously" in actual prices (Fama E.F 1991).Market Efficiency can be tested

Weak form: Weak form of efficient market hypothesis claims that prices fully reflect the information implicit in the sequence of past prices, Semi strong form: Semi strong form efficient market hypothesis which asserts that prices reflect

1. **Dr Pradipta Kumar Sanyal**, *Assistant Professor, Finance, Birla Institute of Management Technology (BIMTECH), Bhubaneswar, India. E Mail: sanyalpradipta@yahoo.co.in, 09007197929,07077938428*

2. **Dr(Prof) Padma Gahan**, *Professor of Finance, Post Graduate Department of Business Administration, Sambalpur University, Sambalpur -768004,Orissa,India. E Mail: pgahan7@gmail.com, 09437348150*

3. **Mr.Smarajit Sen Gupta**, *Assistant Professor, Department of Finance and Accounting, Eastern Institute for Integrated Learning in Management, Kolkata, Affiliated to Vidyasagar University, Midnapore, West Bengal. India. E Mail: smarajit_sengupta@rediffmail.com, 09163393620*

not only past prices but all relevant public information. i.e. announcements of dividends, earnings, accounting practices, mergers and etc. and in Strong form: Strong form market efficiency suggests prices also reflect both public and private information. Through this we mainly focus on the emerging markets to test the efficient market hypotheses and applied various tests to test the market efficiency.

RMH and collected data for the period 1993 to 2003. They did not find the empirical evidence of Random walk in MENA stock markets during the period of study.

Mollah Sabar A (2007) conducted study on Botswana stock exchange to test the presence of Random Walk Hypothesis with the application of both Non-parametric and parametric test for the period of study includes 1989 to 2005 and

Emerging Stock Market at Glance

Country	Name of The Exchange	Index	Year of Establishment	Market Capitalization	Index Calculation Methodology	No of Companies Lists
India	Bombay Stock Exchange	Sensex	1875	USD 1.32 Trillion as of January 2013	Free-Float Market Capitalization	5000+
China	Shanghai Stock Exchange	SSE Composite	1990	US$2.3 trillion (2011)	Free-Float Market Capitalization	998+
Brazil	IBOVESPA	IBOVESPA	1890	US $1.22 Trillion (2012)	NA	365
Pakistan	Karachi Stock Exchange	KSE 100	1947	USD 53.3 billion May 2013	NA	652
Srilanka	Colombo Stock Exchange	ASPI	1985	LKR 2.3 Trillion	Weighted Market Capitalization	289
Mexico	Mexican Stock Exchange	IPC	1933	USD 460.4 billion	Weighted Market Capitalization	466
Russia	Moscow Exchange	RTS	2011	NA	NA	1845
Turkey	Borsa Istanbul	BIST	1985	411.651 billion (2012	Weighted free float market Capitalization	371
Indonesia	Jakarta Stock Exchange	JSKE	1912	USD 426.78 billion	Modified Weighted	462
HongKong	HongKong Stock Exchange	HSI	1891	HK$16.985 trillion (Nov 2011	Free Float Capitalization	1421

Source- en.wikipedia.org

Literature Review

Osamah M AC Khazali, Dang David K and Pyun Chong Soo (2007) studied the empirical validity of Random Walk Hypotheses in eight emerging markets in the Middle East and North Africa (MENA).The study employed variance ratio test and run test for study the empirical evidence of

Finding of the study suggests absence of random walk in Botswana Exchange.

Worthington Andrew C and Higgs Helen (2009) examined the weak form market efficiency of Australian Stock Market by employing serial dependence test and unit root test to test the market efficiency and the period of study includes

12520 observations from 1958 to 2006 and found no evidence of random walk behaviour in the market.

Borges Maria Rosa (2011) studies the weak form market efficiency applied to the PSI-20 index prices of the Lisbon stock market and Augmented Dickey Fuller test, serial correlation, run test and variance ratio test were employed to test the random walk for a period which includes data from January 1993 to December 2006. The daily data exhibit serial correlation at a significance level of 1%, so it was observed that PSI -20 does not follow random walk during the period of study.

Hirenth Gourishankar and Kamaiah B (2012) examined the behavior of stock returns in the Indian equity market and the study used daily stock returns of six indices from BSE and Eight indices from NSE with the period starting from June 1997 to March 2009. They employed Variance ratio test was employed to test the random walk hypothesis. The findings of the study suggest (a) Rejection of random walk was relatively stronger for smaller and medium indices because the medium and small sized indices had lower market capitalization and were less liquid

(b) Non-random walk behavior of stock returns and vulnerability of the stock market to the shock indicated that the Indian equity market is still in developing market. Camelia Oprean (2012) tested weak from market efficiency of eight emerging

market: four from UAE and four BRIC markets. Total 10 years data used for this study comprising the period from 2002 to 2012 and employed unit root, variance ratio and unit root test to test the weak form of efficiency of the markets and come out that Emerging markets are typically characterized by a non-linear information behavior in stock prices.

David Sam Jayakumar GS and Sulthan A (2013) examined the random walk hypotheses and to determine the validity of weak form of market efficiency of NSE. The period of study employed Unit root test and ACF to determine the market efficiency and the period of study taken from the study was in between 2007 to 2011. Their test suggests that the Indian stock market don't shows the characteristics of random walk and such are not efficient in the weak form implying that stock prices remain predictable and there are systematic ways to exploit trading opportunities and earn excess profit.

Methodology and Research design

Close level data for this study are collected for ten emerging economies including India. However South Africa is not included for the lack of availability of data. All the main indices are included for all the ten countries and the data collected from yahoo finance website i.e. in.finance.yahoo.com. The details regarding the data are incorporated in the following table.

Table 1: **Data and Sample**

Country	Name of Stock Exchange	Name of the Index	Period Of Study	No of Observation	Data Type
India	Bombay Stock Exchange	BSE Sensex	01.07.1997-07.01.2014	4087	Closing Level Data
China	Shanghai Stock Exchange	SSEC- Shanghai Composite	19.12.1990-07.01.2014	5908	Closing Level Data
Indonesia	Indonesia Stock Exchange (Bursa Efek Indonesia)	JKSE- Jakarta Composite	01.07.1997-07.01.2014	4013	Closing Level Data
Sri Lanka	Colombo Stock Exchange	All share price index (ASPI)	02.01.1985-30.09.2013	6868	Closing Level Data

Country	Name of Stock Exchange	Name of the Index	Period Of Study	No of Observation	Data Type
Pakistan	Karachi Stock Exchange	KSE 100	02.07.1997-07.01.2014	4029	Closing Level Data
Russia	Moscow Exchange	RTS Index	01.09.1995-07.01.2014	4666	Closing Level Data
Brazil	Brazil Stock Exchange (IBOVESPA)	IBOVESPA	27.04.1993-07.01.2014	5122	Closing Level Data
Turkey	BORSA Instanbul	BIST 30	04.01.1988-07.01.2014	8470	Closing Level Data
Mexico	Mexican Stock Exchange (Bolsa Mexicana de Valores)	IPC	08.11.1991-07.01.2014	5542	Closing Level Data
Hong Kong	Hong Kong Stock Exchange	HSI - Hang Seng Index	31.12.1986-07.01.2014	6721	Closing Level Data

Random walk behaviour under this study is tested through the following equations:-

$$r_t = \delta + r_{t-1} + \varepsilon_t \qquad \varepsilon_t (0, \sigma^2) \qquad (1)$$

$$r_t = \ln(P_t / P_{t-1}) \qquad (2)$$

r_t = logarithmic index return;

r_{t-1} = previous day logarithmic return;

d = drift parameter;

Pt = current closing price Pt-

1= previous closing price

In the above equation (1) the white noise term, e_t is independent and identically distributed with zero mean and constant variance. Thus the value of r_t at time t is equal to its value t-1 plus a random shock. The independence of increments { e_t } implies that the process is strictly white noise process. However this practical definition is less useful as its rejection doesn't tell anything about predictability of returns.

Hence, a martingale difference sequence is sufficient to say markets are efficient and r_t is martingale if

$$E(r_{t+1} + | r_t, r_{t-1} \ldots .,) = r_t \qquad (3)$$

Or equivalent

$$E(r_{t+1} - r_t | r_t, r_{t-1} \ldots ..) = 0 \qquad (4)$$

Thus, return follow a martingale difference sequence if drift is zero and error term uncorrelated.

The objective of our study is to check whether the stock prices of the included indices follow a random pattern or investors can rely on technical analysis to beat the market efficiency and achieve abnormal returns, to satisfy the objective of the study the following null and alternate hypothesis are formulated depending on the test being employed.

Ho: return series follows random walk, hence markets are efficient.

H1: return series do not follow random walk hence markets are inefficient.

This study uses Descriptive statistics and test of normality to test the normality of the return series across exchanges consider for the study and Run test, Unit root Test, Auto Correlation and Variance ratio tests are being employed to test the market efficiency.

$$JB = n \left[\frac{S^2}{6} + \frac{(K-3)^2}{24} \right] \quad \chi^2 (2) \qquad (5)$$

$$S = \frac{E(X-\mu)^3}{\sigma^3 cubeofSD} = \underline{thirdmomen\ taboutmean}$$

$$K = \frac{E(X-\mu)^4}{E[(X-\mu)^2]^2} = \frac{fourthmome\ ntaboutmea\ n}{squareofSe\ condmoveme\ nt}$$

n = sample size, S= skewness and K= kurtosis coefficient and for normally distributed variable, S=0 and K=3. Therefore, the JB test of normality is tested of the joint hypothesis that S and K are 0 and 3, respectively. If K<3= platykurtic (fat or short tailed) K> 3 = leptokurtic (slim or long tailed) K=3 (mesokurtic- normally distributed)Under the null hypothesis that the residuals are normally distributed, Jarque-Bera showed that asymptotically (i.e. in large samples) JB statistic follows the chi-square distribution with 2 df. If the computed p value of the JB statistics is sufficiently low the null hypothesis that the residuals are normally distributed can be rejected.

Random Walk Hypothesis

Random Walk Hypothesis can be expressed with the following equation

$$Y_{t+1} = \mu + Y_t + \varepsilon_{t+1} \quad (6)$$

$$r_{t+1} = Y_{t+1} - Y_t = \Delta Y_{t+1} = \mu + \varepsilon_{t+1} \quad (7)$$

Or

Y_{t+1}/P_{t+1} = close price at t+1

Y_t/P_t= close price at t

μ= drift parameter

ε_t= random disturbance

Where E (ε_{t+1}) = 0, σ^2_ε= is constant and E

(ε_{t+1}- ε_{t-g}) =0, g≠0 for all t

The analytical framework of examining the stock price behavior will not only focus on the movements of stock price but also on the weak form efficiency of the market. When the successive price changes are independent and identically distributed (i.e., it shows no uniform pattern) means the price changes follow random walk. Random walk model (RWM) implies that price changes are serially independent and thereby produces error term which is a white-noise

process. RWM does not assume that the mean of the distribution is independent but says that the entire distribution is independent condition at the information available.

If one-period returns are independent, identically distributed, prices will not follow a random walk since the distribution of price changes will depend on the price level. So, the RWM states that the sequence (the order) of the past returns is of no consequence in assessing distributions of future returns. The random walk is the extension of fair game model. While the fair game model states the condition of market equilibrium can be stated in terms of expected returns but the random walk model states detail about the stochastic process of generating returns. Under the random walk model, the behavior of prices under the EMH will wander randomly with or without drift (around an increasing trend). A random walk model with drift implies that the expected price changes can be non-zero. A stochastic variable is said to follow random walk with drift parameter μ. However, the sub martingale model held that the expected value of next period's price projected on the basis of information is equal to or greater than current prices. A sub martingale assumption hold implies trading rules based only on information sequence cannot have greater profits than a policy of always buying and holding the security during the future period in question.

When the expected return and price changes are zero means that the price sequences follow a martingale. As for example, if we have a stochastic variable Xt, which has the property:

$$Xt+1/I_t = Xt. \quad (8)$$

Then Xt is said to be a martingale where the best forecast of all future values of $Xt+i$ (*i e''* 1) is the current value of Xt. When the agent knows Xt, no other information in It helps to improve the forecast. Clearly, $Xt+1$ is a martingale and change in $Xt+1 = Xt+1''Xt$ is a fair game (for $\mu = 0$). In the efficient market literature, when it is said that stock

price follows martingale include dividend because the dividend price ratio is non-zero and are not constant, so the (log of the) price level cannot be martingale. In fact, any increase in the expected capital gain must be exactly offset by a lower expected dividend yield.

Moreover, the random walk is more restrictive than a martingale since a martingale does not restrict the higher conditional moments to be statistically independent. For example, if the prices of stock (including any dividend payments) are a martingale then successive price changes are unpredictable but it allows the conditional variance of the price changes to be predictable from past variances. But time varying conditional variances is not available if prices follow a random walk. Thus, returns follow a martingale difference sequence (*mds*) if drift is zero and error term uncorrelated. Based on the history of returns, tomorrow's returns cannot be predictable because they are expected to be equal to the today's return. In short, it is not possible to "beat the market'."

Random Walk-1

Random walk model comprises three successive, more restrictive hypotheses with sequentially stronger tests for random walks (Fama, 1970, 1991; Campbell et al., 1997). The more restrictive of these is that in a market that complies with a random walk it is not possible to use information on past prices to predict future prices (hereafter RW1). That is, returns in a market conforming to RW1 are serially uncorrelated, corresponding to a random walk hypothesis with dependent but uncorrelated increments. Parametric serial correlation tests of independence and nonparametric runs tests can be used to test for serial dependence.

Random Walk-2

It may still be possible for information on the variance of past prices to predict the future volatility of the market. A market that conforms

to these conditions implies that returns are serially uncorrelated, corresponding with a random walk hypothesis with increments that are independent but not identically distributed (hereafter RW2).

Unit root tests can be used to determine if the series is difference or trend nonstationary as a necessary condition for a random walk.

Random Walk-3

Finally, if it is not possible to predict either future price movements or volatility on the basis of information from past prices, then such a market complies with the least restrictive notion of a random walk (hereafter RW3). In such a market, returns are serially uncorrelated and conform to a random walk hypothesis with independent and identically distributed increments. Multiple variance ratio (MVR) tests can focus attention on the uncorrelated residuals in the series, under assumptions of both homoscedastic and heteroscedastic random walks. In Serial dependence tests two approaches are employed to test for serial dependence in the returns.

   a. First, the serial correlation coefficient test is a widely employed procedure that tests the relationship between returns in the current period and those in the previous period. If no significant autocorrelations are found, then the series are assumed to follow a random walk.

Autocorrelation Function (ACF) Test

If there is significant linear dependence between r_t and r_{t-i} is of interest, the concept of correlation is generalized to autocorrelation (AC). The correlation between r_t and r_{t-k} is called the lag-k autocorrelation of r_t and is commonly denoted by ρ_k, The AC at lag k, denoted by ρ_k is formulated as:

$$\rho_k = \frac{Cov(r_t, r_{t-k})}{\sqrt{var(r_t)}, \sqrt{var(r_{t-k})}} = \frac{Cov(r_t, r_{t-k})}{var(r_t)} = \frac{\gamma_k}{\gamma_0} \quad (9)$$

Where the property Var(r_t) = Var(r_{t-k}) for a weakly stationary series is used and from the definition, $\rho_0 = 1$, $\rho_k = \rho_{-k}$, and $-1 \leq \rho_k \leq 1$.

Partial Autocorrelation Function (PACF) Test

Partial Autocorrelation Function denoted by $ñ_{kk}$, measures the correlation between an observation k periods ago and the current observations at immediate lags (i.e. all lags < k)- i.e. the correlation between y_t and y_{t-k}, after removing the effects of $r_{t-k+1}, r_{t-k+2},….r_{t-k}$. For example, the pacf for lag 3 would measure the correlation between r_t and r_{t-3} after controlling for the effects of r_{t-1} and r_{t-2}.. At lag 1, the autocorrelation and partial autocorrelation coefficients are equal, since there are no intermediate lag effects to eliminate.

In AR (1) process r_t and r_{t-2} are correlated even though r_{t-2} does not directly appear in the model. The correlation between y_t and y_{t-2} denoted by ρ_2 is equal to the correlation between r_t and r_{t-1} (ρ_1) multiplied by the correlation between r_{t-1} and r_{t-2} (ρ_2) so that $\rho_2 = (\rho_1)^2$. In AR process all such indirect correlations are present in the ACF, whereas the partial autocorrelation controls the effects of such indirect correlations.

Mathematically,

Partial autocorrelation at lag 1 = Autocorrelation at lag 1 ($\rho_{11} = \rho_1$)

PAC at lag 2 (ρ_{22}) = ($\rho_2 - \rho_1^2$)/ (1- ρ_1^2)

Run Test

b. Second, the runs test determines whether successive price changes are independent and unlike the serial correlation test of independence, is nonparametric and does not require returns to be normally distributed. Observing the number of 'runs' – or the sequence of successive price changes with the same sign – in a sequence of price changes tests the null hypothesis of randomness. To perform this test, A is assigned to each return that equals or exceeds the mean value and B for the

items that are below the mean. Let n_A and n_B be the sample sizes of items A and B, respectively. The test statistic is U, the total number of runs. For a large sample, i.e. where both n_A and n_B are greater than 20, the test statistic is approximately normally distributed:

$$Z = \frac{U - \mu_U}{\sigma_U} \tag{10}$$

$$U = \frac{2n_A \, n_B}{n} + 1$$

$$\sigma_U = \sqrt{\frac{2n_A n_B (2n_A \, n_B - n)}{n^2 (n-1)}}$$

$$n = n_A + n_B$$

Q-Statistics

Q-statistics developed by Ljung-Box (LB) (1978) is used in the present to study to test the no autocorrelation in log transformed series. If computed Ljung-Box Q-statistics exceeds the Q value from the chi-square distribution at the chosen level of significance, one can reject the null hypothesis, of no autocorrelation or accept the alternate hypothesis of autocorrelation at different lags.

Ljung-Box (LB) Q Statistics

$$Q(m) = T \, (T+2) \sum_{k=1}^{m} (\frac{\rho_k^2}{k - 1}) \sim \chi^2 m \tag{11}$$

Where, Q_m = Ljung-Box Q statistics, T = no of observation, m = maximum lag length,

k=no of lags= 0, 1, 2…m ρ_k^2 = autocorrelation coefficient of lag k $\div^2 m$ = chi-square distribution with m degree of freedom.

Values of probability given in the correlogram of log transformed series are also considered for accepting or rejecting the null hypothesis of 'no autocorrelation' at a chosen level of significance.

C.Unit Root Test

The test of stationarity is conducted through the application of Augmented Dickey Fuller (ADF):-

Augmented Dickey Fuller

$$r = y = \beta_1 + \beta_2 t + \delta y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta y_{t-i} + u_t$$

Where, y_t = closing level index data   (12)

r_t = y_t = first difference of y_t = $y_t - y_{t-1}$

δ = coefficient of y_{t-1}

β_1 = Drift parameter

t = time or the trend variable

β_2 = coefficient of the regressor 't'

u_t = white noise error term

In the above model under ADF, the null and the alternative to null hypothesis are taken as:

H_0: $\delta = 0$ (i.e. return series is non-stationary)

H_1: $\delta \neq 0$ (i..e. return series is stationary)

For the acceptance/ rejection of the null hypothesis i.e., $\delta = 0$, tau (τ) statistic is used. As the t-value of the estimated coefficient of y_{t-1} does not follow the t-distribution even in large sample, so Dickey-Fuller computed the critical values of the tau (τ) statistics on the basis of Monte Carlo simulations (D.A. Dickey and W.A Fuller, 1979).

If the computed absolute value of tau statistics exceeds the DF tau statistics critical value null hypothesis of δ being 0 will be rejected. If the computed absolute value of tau (τ) does not exceed the critical value, null hypothesis that δ = 0 will be accepted.

Computed value of tau (τ) = $\dfrac{\delta}{\sqrt{\dfrac{1}{n}}}$ (13)

Where, δ = coefficient of y_{t-1}

n= no. of observations which is asymptotic in nature. (Large sample size)

1/n = variance

$\sqrt{\dfrac{1}{n}}$ = standard error of the estimate

Variance Ratio Test

The VR methodology consists of testing the RWH against stationary alternatives, by exploiting the fact that the variance of random walk increments is linear in all sampling intervals, i.e. the sample variance of the *k*-period return (or *k*-period differences), *yt - yt-k* , of the time series *yt*, is *k* times the sample variance of the one-period return (or the first difference), *yt - yt-1*. The VR at lag *k* is then defined as the ratio between $1/k$ of the *k*-period return (or the *k*th difference) to the variance of the one-period return (or the first difference). Hence, for a random walk process, the variance computed at each individual lag interval *k* (*k* = 2, 3, . . .) should be equal to unity.

Even though the individual Lo–MacKinlay and multiple VR tests are quite powerful testing for homoscedastic or heteroscedastic nulls, it is critical to note that these tests are asymptotic tests in that their sampling distributions are approximated by their limiting distributions. Indeed, the sampling distribution of the VR statistic can be far from normal in a finite sample, showing severe bias and right skewness.

These finite sample deficiencies may give rise to serious size distortions or low power, which can lead to misleading inferences. This is especially true when the sample size is not large enough to justify asymptotic approximations (Cecchetti and Lam, 1994). To circumvent this problem, some alternatives4 have been proposed, such as Chen and Deo (2006) with a powertransformed VR statistic, Wright (2000) with exact VR tests based on rank and sign.

Individual Variance Ratio Tests

The VR test is often used (see Cochrane, 1988; Lo and MacKinlay, 1988; Poterba and Summers, 1988; among others) to test the hypothesis that a given time series or its first difference (or return), $r_t = y_t - y_{t''1}$, is a collection of i.i.d. observations or

that it follows a martingale difference sequence. Define the VR of the *k*-period return as

$$V(k) = \frac{\mathrm{var}(x_t + x_{t-1} + \cdots + x_{t-k+1})/k}{\mathrm{var}(x_t)} = \frac{\mathrm{var}(y_t - y_{t-k})/k}{\mathrm{var}(y_t - y_{t-1})}$$

$$= 1 + 2\sum_{i=1}^{k-1}\frac{(k-i)}{k}\rho_i \qquad (14)$$

Where, ρ_i is the *i*th lag autocorrelation coefficient of $\{r_t\}$. $V(k)$ is a particular linear combination of the first $k'' 1$ autocorrelation coefficients, with linearly declining weights. The central idea of the VR test is based on the observation that when returns are uncorrelated over time, we should have $\mathrm{var}(r_t + \cdots + r t'' k+1) = k\, \mathrm{var}(r_t)$, i.e. $V(k) = 1$. One can therefore think of the VR test as a specification test of H0: $\rho_1 = \cdots = \rho_k = 0$, i.e. returns are serially uncorrelated. A test can be constructed by considering the statistic based on an estimator of $V(k)$

$$(15)$$

$$\sigma^2(k) = \frac{1}{m}\sum_{t=k}^{T}(r_t + r_{t-1} + \ldots\ldots + r_{t-k+1} - k\hat{\mu})^2 \quad (16)$$

where $m = k(T - k + 1)(1 - kT^{-1})$. The value of *m* is chosen such that $\sigma^2(k)$ is an unbiased estimator of the *k*-period return variance when $\sigma^2(k)$ is constant over time and

$$\hat{\mu} = \frac{1}{T}\sum_{t=1}^{T} r_t \quad \text{is the estimated mean} \quad (17)$$

$$\sigma^2(1) = \frac{1}{T-1}\sum_{t=1}^{T}(y_t - y_{t-1} - \hat{\mu})^2$$

Lo and MacKinlay (1988) Tests

Lo and MacKinlay (1988) proposed the asymptotic distribution of $VR(r; k)$ by assuming that *k* is fixed when $T \to \infty$. They showed that if r_t is i.i.d., i.e. under the assumption of homoscedasticity, then under the null hypothesis that $V(k) = 1$

Lo and MacKinlay (1988) generate the asymptotic distribution of the estimated variance ratios and propose two test statistics, Z(k) and Z*(k), under the null hypothesis of homoskedastic increments random walk and heteroskedastic increments random walk, respectively. If the null hypothesis is true, the associated test statistic has an asymptotic standard normal distribution. Assuming homoskedastic increments

$$Z(k) = \frac{VR(r;k) - 1}{\phi(k)^{1/2}} \qquad (19)$$

which follows the standard normal distribution asymptotically. The asymptotic variance, $\ddot{o}(k)$, is given by

$$\phi(k) = \frac{2(2k-1)(k-1)}{3kT} \qquad (20)$$

To accommodate r_ts exhibiting conditional heteroscedasticity, Lo and MacKinlay (1988) proposed the heteroscedasticity robust test statistic Z*(k)

$$Z_*(k) = \frac{VR(r;k) - 1}{} \qquad (21)$$

Which follows the standard normal distribution asymptotically under the null hypothesis that $V(k) = 1$, where

$$\phi^*(k) = \sum_{j=1}^{k-1}\left[\frac{2(k-j)}{k}\right]^2 \delta(j) \qquad (22)$$

$$\delta(j) = \left\{\sum_{t=j+1}^{T}(r_t - \mu)^2(r_{t-j} - \hat{\mu})^2\right\} \div \left\{\left[\sum_{t=1}^{T}(r_t - \hat{\mu})^2\right]^2\right\}$$

The Z*(k) test is applicable to r_ts generated from a martingale difference time series

Thus, according to variance ratio test, the returns process is a random walk when variance ratio at a holding period k is expected to be unity. If it is less than unity, it implies negative autocorrelation and if it is great than one, indicates positive autocorrelation

Parametric Vs Non-Parametric Test of Random Walk

In the study of the RWH in emerging markets, VR tests have been by far the most widely used econometric tools since the pioneering work of Lo and MacKinlay (1988) A potential limitation of the Lo–MacKinlay-type (1988) VR tests is that they are asymptotic tests, so their sampling distributions in finite samples are approximated by their limiting distributions. An assumption underlying the VR tests is that stock returns are at least identically, if not normally, distributed and that the variance of the random walk increments in a finite sample is linear in the sampling interval. Even though the VR test is quite powerful against

homoskedastic or heteroskedastic *i.i.d.* nulls (Smith and Ryoo, 2003), the sampling distribution of the VR statistic can be far from normal in finite samples, showing severe bias and right skewness. Therefore, Lo–MacKinlay-type (1988) VR tests can suffer from serious test-size distortions or low power, especially in relatively small samples. To overcome these problems, Wright (2000) introduces nonparametric VR tests that do not rely on approximate sampling distributions. The nonparametric tests are more powerful than the conventional VR tests when return data are highly non normal and non-stationary (Wright, 2000). However, for this study we considered only run test as the non-parametric test

Results and Empirical Analysis

Table 2 : Descriptive Statistics

Index	Mean	Standard Deviation	Skewness	Kurtosis	Minimum	Maximum	Jarque Bera
BSE Sensex	0.00017	0.0071	-0.091	8.56	-0.05	0.07	5275.91 (p=0.00)
SSEC	0.00022	0.01	5.6	158.91	-0.077	0.31	6014354 (p=0.00)
JKSE	0.00019	0.0076	-0.18	9.84	-0.05	0.06	7855.809 (p=0.00)
ASPI	0.00026	0.0048	0.85	33.19	-0.06	0.08	261771.6 (p=0.00)
KSE100	0.0003	0.007	-0.39	8.79	-0.05	0.06	5732.34 (p=0.00)
RTS Index	0.00024	0.011	-0.37	10.69	-0.09	0.09	11614.89 (p=0.00)
IBOVESPA	0.00065	0.01	0.49	12.85	-0.07	0.12	20934.14 (p=0.00)
BIST 30	0.00023	0.0079	-0.26	8.38	-0.055	0.045	10323.97 (p=0.00)
IPC	0.00026	0.0068	0.022	8.74	-0.0062	0.052	7626.79 (p=0.00)
HSI-Hang Seng Index	0.00014	0.0075	-2.38	59.92	-0.17	0.08	913719.4 (p=0.00)

Analysis of Table-2

The log returns of the indices are not normally distributed as the skewness is not equal to zero and kurtosis is more than 3. If the kurtosis is greater than 3, it suggests leptokurtic pattern (slim or long tailed) of the indices. As the skewness in most of the indices are less than zero or negative, it suggest the indices are skewed towards the left. The Jarque Bera Test statistics follows Chi Square distribution, with two degrees of freedom, and the null hypotheses that the log returns of the indices are normally distributed can be rejected, as the p values are also significant.

Analysis of table-3

In this study we have considered the mean as the cutoff point and the values above mean are considered positive runs (n_A) and the values below the mean are considered negative runs(n_B).

If the computed z value falls within the acceptance zone, i.e. ± 1.96, at 5% level of significance then null hypotheses will be accepted. In that case capital markets will satisfy weak form of market hypotheses and random walk.

Except for RTS Index, IBOVESA and HSI-Hang Seng, all other indices do not follow random walk, as the computed z values do not fall within the acceptance region at 5% level of significance. For RTS, IBOVESA and HSI- Hang Seng the calculated z values are within the acceptance region, at 5% level of significance. So the empirical analysis of the run test under this sample period suggests that most of the markets under the study are not weak from efficient and so they do not follow random walk. However RTS, IBOVESA and HSI-Hang Seng under the study follow the random walk behavior and said to be efficient.

Table 3 : Run Tests

Indices					
	BSE Sensex	SSEC	JKSE	ASPI	KSE 100
n_A Positive Runs, Returns > Mean	2112	2831	2086	3209	2095
n_B Negative Runs Returns<Mean	1974	3076	1926	3658	1933
No. of Observations	4086	5907	4012	6867	4028
Total number of runs (R)	1894	2732	1877	2465	1849
z	-4.626	-5.668	-4.001	-23.145	-5.137
z=0.05	±1.96	±1.96	±1.96	±1.96	±1.96
Hypotheses	H_1	H_1	H_1	H_1	H_1

Indices					
	RTS Index	IBOVESPA	BIST 30	IPC	HSI-Hang Seng Index
n_A Positive Runs Returns > Mean	2928	2252	4264	2793	3407
n_B Negative Runs Returns<Mean	1652	2569	4204	2748	3313
No. of Observations	4580	5121	8468	5541	6720
Total number of runs (R)	2150	2507	3195	2524	3328
z	1.178	-1.523	-6.951	-6.646	-0.789
z=0.05	±1.96	±1.96	±1.96	±1.96	±1.96
Hypotheses	H_0	H_0	H_1	H_1	H_0

Table 3 : Run Tests

	Correlogram of SENSEX					Correlogram of SSEC- Shanghai Composite			
Lag	*AC*	PAC	Q-Stat	P-Values	Lag	*AC*	PAC	Q-Stat	P-Values
1	0.071	0.071	20.434	0	1	0.04	0.04	9.4822	0.002
2	-0.036	-0.041	25.742	0	2	0.038	0.036	17.857	0
3	-0.003	0.003	25.779	0	3	0.047	0.044	30.898	0
4	0.015	0.013	26.678	0	4	0.038	0.034	39.51	0
5	-0.027	-0.029	29.555	0	5	0.023	0.018	42.77	0
6	-0.047	-0.042	38.641	0	6	-0.022	-0.028	45.647	0
7	0.017	0.022	39.884	0	7	0.001	-0.002	45.649	0
8	0.044	0.037	47.649	0	8	-0.018	-0.019	47.484	0
9	0.042	0.039	54.865	0	9	0.024	0.026	50.824	0
10	0.014	0.012	55.678	0	10	-0.008	-0.007	51.191	0
11	-0.025	-0.027	58.244	0	11	-0.033	-0.032	57.658	0
12	-0.001	0.001	58.251	0	12	0.034	0.036	64.544	0
	Correlogram of JKSE- Jakarta Composite					Correlogram of KSE 100(Karachi)			
Lag	*AC*	PAC	Q-Stat	P-Values	Lag	*AC*	PAC	Q-Stat	P-Values
1	0.142	0.142	80.445	0	1	0.095	0.095	36.115	0
2	0.024	0.004	82.787	0	2	0.054	0.045	47.826	0
3	-0.025	-0.029	85.247	0	3	0.045	0.037	56.106	0
4	-0.024	-0.017	87.51	0	4	0.016	0.006	57.159	0
5	-0.03	-0.024	91.194	0	5	0.025	0.019	59.661	0
6	-0.03	-0.023	94.881	0	6	0.01	0.003	60.055	0
7	-0.014	-0.007	95.712	0	7	0.034	0.031	64.852	0
8	-0.005	-0.003	95.81	0	8	0.021	0.013	66.579	0
9	0.002	0.001	95.828	0	9	0.048	0.042	75.825	0
10	0.027	0.025	98.689	0	10	0.014	0.002	76.627	0
11	0.049	0.041	108.4	0	11	0.008	0.001	76.916	0
12	0.043	0.029	115.87	0	12	0.026	0.02	79.665	0
	Correlogram IPC (Mexico)					Correlogram of IBOVESPA Brazil			
Lag	*AC*	PAC	Q-Stat	P-Values	Lag	*AC*	PAC	Q-Stat	P-Values
1	0.107	0.107	62.968	0	1	0.059	0.059	17.754	0
2	-0.031	-0.043	68.297	0	2	-0.007	-0.01	17.998	0
3	-0.02	-0.012	70.549	0	3	-0.012	-0.011	18.759	0
4	0.011	0.013	71.17	0	4	-0.012	-0.011	19.487	0.001
5	-0.013	-0.017	72.044	0	5	-0.008	-0.007	19.841	0.001
6	0.001	0.005	72.056	0	6	-0.018	-0.017	21.429	0.002
7	-0.027	-0.029	76.211	0	7	0.027	0.028	25.065	0.001
8	-0.008	-0.002	76.563	0	8	0.072	0.069	51.677	0
9	0	0	76.563	0	9	0.076	0.068	80.935	0
10	0.018	0.017	78.423	0	10	0.065	0.059	102.32	0
11	0.005	0.002	78.551	0	11	-0.002	-0.006	102.35	0
12	0.035	0.035	85.213	0	12	0.044	0.049	112.11	0

Correlogram HangSeng (Singapore)				Correlogram of ASPI (Colombo)			
Lag	*AC*	PAC	Q-Stat	P-Values	Lag	*AC*	PAC	Q-Stat	P-Values
1	0.019	0.019	2.4046	0.121	1	0.306	0.306	644.64	0
2	-0.02	-0.021	5.187	0.075	2	0.076	-0.02	684.3	0
3	0.053	0.053	23.751	0	3	0.054	0.04	704.21	0
4	-0.022	-0.024	26.969	0	4	0.076	0.055	744.07	0
5	-0.028	-0.025	32.37	0	5	0.041	0	755.53	0
6	-0.002	-0.005	32.408	0	6	0.002	-0.016	755.55	0
7	0.023	0.025	36.069	0	7	0.019	0.021	758	0
8	0.03	0.031	42.094	0	8	0.026	0.011	762.65	0
9	-0.016	-0.017	43.796	0	9	0.024	0.011	766.54	0
10	-0.006	-0.008	44.06	0	10	0.021	0.012	769.71	0
11	0.024	0.022	48.077	0	11	0.042	0.032	781.65	0
12	0.006	0.009	48.327	0	12	0.031	0.006	788.31	0
Correlogram of BIST 30 (Turkey)				Correlogram of RTS Index			
Lag	*AC*	PAC	Q-Stat	P-Values	Lag	*AC*	PAC	Q-Stat	P-Values
1	0.091	0.091	70.741	0	1	0.139	0.139	89.715	0
2	0.001	-0.008	70.747	0	2	0.015	-0.004	90.815	0
3	-0.012	-0.012	72..068	0	3	-0.014	-0.016	91.717	0
4	0.024	0.026	76.992	0	4	0.023	0.028	94.284	0
5	-0.021	-0.026	80.586	0	5	-0.006	-0.014	94.473	0
6	-0.011	-0.007	81.649	0	6	0.017	0.019	95.793	0
7	0.011	0.013	82.626	0	7	0.021	0.018	97.892	0
8	0.024	0.021	87.628	0	8	-0.035	-0.043	103.78	0
9	-0.007	-0.011	88.085	0	9	0.024	0.036	106.44	0
10	-0.019	-0.017	90.997	0	10	0.036	0.028	112.4	0
11	-0.044	-0.041	107.15	0	11	0.036	0.025	118.48	0
12	-0.022	-0.015	111.18	0	12	0.019	0.014	120.24	0

Analysis of Table-4

Table-4 represents the correlogram of log returns series of all the indices under consideration. The correlogram of log return series of all the indices suggests absence of random walk except for HSI-Hang Seng Singapore. Correlogram of log return series indicate a serial correlations as the calculated values of Q-Stat are greater than the table values for all the lags for the indices under consideration, however for HangSeng the calculated value of Q-stat are relatively very low. The probability vales (p-values) are statistically significant for all the indices except Hang Seng at 5% level of significance and statistically significant p values reject the null hypothesis of no serial correlation for the defined lags at 5% level of significance. So all the indices under consideration suggest that there exist serial correlations for the lags and hence the prices are predictable in the market. These markets data do not show any kind of market efficiency under the period of study. HangSeng market index shows no serial correlation as the p values for the first two lags and hence market efficiency can be seen.

Table -5 Unit Root Test

	BSE Sensex	SSEC	JKSE	ASPI	KSE100
Unit Root Test(ADFTest)	-59.52808	-40.9581	-54.9166	-34.7639	-57.7074
1	-3.959402	-3.95959	-3.96033	-3.95937	-3.96032
5%	-3.410473	-3.41057	-3.41093	-3.41046	-3.41092
10%	-3.127001	-3.12706	-3.12727	-3.12699	-3.12727
Critical Value					
Probability Values	0	0	0	0	0

	RTS Index	IBOVESPA	BIST 30	IPC	HSI-Hang Seng Index
Unit Root Test (ADF Test)	-59.38531	-67.81506	-83.9809	-51.911	-45.17603
1%	-3.960006	-3.95983	-3.95912	-3.95969	-3.959402
5%	-3.410768	-3.410682	-3.41033	-3.41062	-3.410473
10%	-3.127176	-3.127125	-3.12692	-3.12709	-3.127001
Critical values					
Probability Values	0	0	0	0	0

Analysis of Table-5

The null hypothesis of unit root is rejected as the calculated values of ADF test statistics for all the indices under the consideration are more than the table value at 1%, 5% and 10% level of significance. The probability values are also statistically significant further confirming the rejection of null hypothesis. Rejection of null hypothesis of unit root suggests that log return data series are stationary and hence suggest that the prices of the indices of the respective Stock markets are predictable. Predictable stock prices further suggest that markets are inefficient.

Variance Ratio Test -BSE					
Period	Var. Ratio	z-Statistic	Probability	z-Statistic	Probability
2	1.071432	4.566084	0	2.929977	0.0034
4	1.070794	2.418878	0.0156	1.57965	0.1142
8	1.04705	1.016732	0.3093	0.675146	0.4996
16	1.106669	1.549061	0.1214	1.056374	0.2908
Variance Ratio Test -Brazil					
Period	Var. Ratio	z-Statistic	Probability	z-Statistic	Probability
2	1.06267	4.484756	0	2.396966	0.0165
4	1.08709	3.331271	0.0009	1.755043	0.0793
8	1.08519	2.060916	0.0393	1.116024	0.2644
16	1.337741	5.490856	0	3.114236	0.0018
Variance Ratio Test -china					
Period	Var. Ratio	z-Statistic	Probability	z-Statistic	Probability
2	1.040343	3.100648	0.0019	1.455505	0.1455
4	1.120804	4.96285	0	2.10873	0.035
8	1.226245	5.878379	0	2.428726	0.0152
16	1.280414	4.896239	0	2.176607	0.0295

Variance Ratio Test -colombo					
Period	Var. Ratio	z-Statistic	Probability	z-Statistic	Probability
2	1.308528	25.56694	0	10.17031	0
4	1.570126	25.25342	0	10.20166	0
8	1.849355	23.79406	0	10.37356	0
16	2.167534	21.98022	0	10.65283	0
Variance Ratio Test -Hengseng					
Period	Var. Ratio	z-Statistic	Probability	z-Statistic	Probability
2	1.019376	1.588382	0.1122	0.530038	0.5961
4	1.035677	1.563294	0.118	0.587789	0.5567
8	1.033053	0.915994	0.3597	0.391103	0.6957
16	1.075588	1.407722	0.1592	0.674943	0.4997
Variance Ratio Test -Indonesia					
Period	Var. Ratio	z-Statistic	Probability	z-Statistic	Probability
2	1.14236	9.017121	0	5.661875	0
4	1.226417	7.665756	0	4.802117	0
8	1.193954	4.153132	0	2.643626	0.0082
16	1.250899	3.610423	0.0003	2.376517	0.0175

Variance Ratio Test -Karachi					
Period	Var. Ratio	z-Statistic	Probability	z-Statistic	Probability
2	1.096385	6.117247	0	3.774679	0.0002
4	1.222844	7.559819	0	4.492014	0
8	1.359852	7.72084	0	4.682612	0
16	1.55904	8.06059	0	5.146127	0
Variance Ratio Test -Mexico					
Period	Var. Ratio	z-Statistic	Probability	z-Statistic	Probability
2	1.108112	8.047639	0	8.047639	0
4	1.123548	4.915834	0	4.915834	0
8	1.121206	3.050101	0.0023	3.050101	0.0023
16	1.149891	2.534831	0.0113	2.534831	0.0113
Variance Ratio Test -Turkey					
Period	Var. Ratio	z-Statistic	Probability	z-Statistic	Probability
2	1.092207	8.485068	0	5.33821	0
4	1.134127	6.597412	0	4.063428	0
8	1.156324	4.863084	0	3.025686	0.0025
16	1.136625	2.856274	0.0043	1.841625	0.0655
Variance Ratio Test -Russia					
Period	Var. Ratio	z-Statistic	Probability	z-Statistic	Probability
2	1.139261	9.511634	0	4.983114	0
4	1.218289	7.969351	0	4.344454	0
8	1.28544	6.590778	0	3.755028	0.0002
16	1.422488	6.555697	0	3.875448	0.0001

Z – test statistic for null hypothesis of homoscedastic increments random walk,

Z*_– test statistic for null hypothesis of heteroscedastic increments random walk; the critical value for Z and Z* at the 5%

Analysis of Table- 6

The results computed through table-6 indicates that except for Hangseng all other indices indicate absence of random walk as the null hypothesis of VR (k)= 1 is rejected at 5% level of significance. The computed z values are more than the critical values both for homoscedastic and heteroscedatic increments, except for Hangseng and also the probability values are statistically significant at the chosen level of significance, hence the null hypothesis cannot be accepted. However, for Hangseng calculated z values are less than the critical values and also the probability values are not statistically significant hence the presence of random walk can't be rejected atleast for the Hangseng market.

<u>**Conclusion**</u>

The indices under consideration do not show market efficiency under the parametric and non-parametric tests. The non-parametric run tests except for RTS, IBOVESA and HSI- Hang Seng suggest that non presence of Random Walk or no market efficient. The parametric Autocorrelation tests also suggest no market efficiency for all the indices under consideration except for HIS-Hang Seng. On comparing both parametric and non-parametric tests suggest that HIS-HangSeng show market efficiency for the period under the consideration. Hence HSI is said to be efficient under our study and all the other emerging markets do not satisfy the tests of random walk. In an inefficient market the opportunity to forecast prices could be possible.

From this study it can also be concluded that emerging markets are found to be inefficient may be because of transmission of market information and also emerging markets widely dependant on the developed economics, especially United States of America (USA). Another reason could be the lag in the trading time between US market and other emerging markets including India.

Inefficient markets also bring arbitrage opportunities in the market and the technical analysts are in a better position to predict the prices through technical analysis tools. The findings of the study may be used by traders and investors for strategizing their investments in the emerging markets.

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An Analytical Study on Investment and Financing Scenario of Tourism Industry of West Bengal

Dr. J. K. Das

Professor, Department of Commerce, University of Calcutta, Kolkata

Sudipta Ghosh

Assistant Professor, Department of Commerce, Maharani Kasiswari College, Kolkata

Abstract

Tourism is one of the important and viable avenues for economic development of many countries. To develop tourism, proper financing is necessary as tourism needs financing like other industries and tourism projects demand high initial investment. The state West Bengal in India is very rich in tourism resources and this sector is highly promising. During the 12th Plan four potential tourism circuits across the State have been identified and proposed for development with the help of Central Financial Assistance, State Government and private sector. This paper made an analytical study on investment and financing scenario of tourism industry of West Bengal and found various possibilities and opportunities in West Bengal tourism. This paper also discussed on possible mechanism of tourism financing in West Bengal and found Public Private Partnership

(PPP) as a probable mechanism of financing for proposed tourism projects. Again an in-depth analysis of amount sanctioned in 10th, 11th and 12th five-year plan in West Bengal tourism has been made to understand the trend of tourism project development and found that majority amount was sanctioned for development of product infrastructure for destination and circuits during those plan periods. At the end, this paper concluded that West Bengal is a highly promising tourism destination and it has good opportunities in tourism investment and tourism financing.

Key Words: Tourism investment, Tourism financing, West Bengal tourism.

1. Introduction

Tourism is an important and fast growing industry in the world. It is considered as one of the world's biggest industries and is an important source of employment, revenue generation, economic growth, empowerment of local people and overall development of the country. Nations like Dubai, Singapore, Malaysia, Indonesia, and Hong Kong are based on tourism. The tourism-led economic growth hypothesis (TLGH) explains that tourism expansion leads to economic growth. It is based on the concept of the export-led growth hypothesis (ELGH) which states that the economic growth of countries can be generated not only by increasing the amount of labour and capital within the economy, but also expanding exports (Brida, Risso and Bonapace, 2009).

India has a rich heritage in tourism. Tourism earns one third of the foreign exchange of India. It also employs the highest number of employee. According to the World Tourism Organization, by the year 2020, it is expected that India will become the leader in the tourism industry in South Asia (Reference: Statistical Year Book India, 2013).

Tourism has important role to play in West Bengal also. West Bengal, a State of India, is very rich in resources and it has immense tourism potential to become a top destination of India. It has the highest tourism 'band-with' in the country. The Himalayan Mountains, the sea beaches, the Sundarbans, the lush green forests and the wild life sanctuaries attract tourists from all over the world. West Bengal is the only State in India which

has the natural beauty and diversity ranging from snow covered mountains at Darjeeling to sea beaches of Digha and from mangrove forests in Sundarbans to forests of North Bengal. West Bengal has a very unique geographical location and diversity which is very crucial factor for developing the tourism market. In spite of quality tourism resources (i.e. the State has mountains, forests and wildlife, sea and sea beaches, Sunderban delta) West Bengal tourism was not developed due to lack of proper planning and its correct implementation. In Tourism Policy, 2008, Department of Tourism, Govt. of West Bengal expressed their views on future development of tourism. It was decided to develop necessary tourism infrastructure and promote tourism in an integrated manner and to become a preferred tourism and tourism-related investment destination. According to the Draft 12th Five Year Plan (2012-2017), Govt. of West Bengal, Tourism Department listed some initiatives for the development and promotion of tourism in this State. The State Government has considered tourism as a top most priority for employment generation. A model framework of PPP (Public Private Partnership) is under preparation for developing accommodation, tourism parks, amusement parks, adventure sports, helicopter and marine vessel services.

In this background this paper made a modest attempt to analyse the investment and financing scenario of tourism industry of West Bengal. The present study is analytical in nature and based on secondary data. A detailed contextual analysis has been made to identify the investment and financing opportunities and understand investment and financing scenario of West Bengal tourism. Various graphs, tables and simple mathematical tools were used for data analysis purpose. The study is divided in six chapters. First chapter is all about the introduction and background of the study. Chapter 2 discussed

general framework of tourism financing with special reference to West Bengal tourism. Next chapter i.e. Chapter 3 made an analytical study of investment and financing scenario of West Bengal tourism industry by exploring its possibilities and opportunities through analyzing the total indicative estimated cost for each project in various circuits, mode of funding and share of public funding and private investment in various projects. Chapter 4 considered Public Private Partnership (PPP) and tourism financing in West Bengal. Chapter 5 made an analysis of amount sanctioned in 10th, 11th and 12th Five-Year plan in West Bengal tourism. The last chapter i.e. Chapter 6 concluded the study.

2. General Framework of Tourism Financing with Special Reference to West Bengal Tourism

Tourism industry needs finance like any other industry. Financing is required to start, sustain and improve the business. There are various alternatives for tourism financing like Govt. assistance, private sector participation, institutional finance, private source of finance, foreign investment, financing by Inter-Governmental organization (e.g. World Bank) etc. This chapter first discussed a general framework of financing tourism related projects and then institutional framework of financing projects in West Bengal with special reference to tourism industry of the State. The next table provides an outline of various options for financing tourism projects:

Institutional framework of financing projects in West Bengal with special reference to tourism industry

West Bengal has a good institutional framework of financing projects. This part reviewed the present institutional framework of financing projects in West Bengal with special reference to tourism.

Table -1: Various options for financing tourism projects

Financing options	Types of assistance	Forms of assistance	Means of financing
State Assistance	Financial Assistance		Long-term low rate interest loan, Special guarantees to foreign investors, Participation in capital stock
	Fiscal Assistance		Relief from specific indirect taxes, Tax Holidays
Institutions and private source of finance	Public Institutions	Development Banks	Loans with low interest, mortgage loans
	Commercial domestic undertakings	Commercial Banks	Issuing loans, lease-back agreement.
	MNCs	MNCs concerned with tourism	Acquiring majority interest
	Foreign sources	Public or semi-public institutions entrusted by the Govt. of the relatively financially rich country	Granting credits, loans at favourable interest.
International Organizations	United Nations Organisations and specific agencies	UNESCO, WTO	
	International Financial Institutions	IMF	Provide financial supports to projects relating to tourism,
	The World Bank Group	IFC, MIGA	Catalyst to further investment.
Regional Financial Institutions/ Organizations	Regional financing institutions, UN Agencies, Inter-Governmental and Non-Governmental Organisations	APEC	Provide financial supports to projects relating to tourism, eco-tourism projects.
		ADB	
		ESCAP	
Other Organizations	Financial Institutions, Non-Governmental Organisations, Grant making foundations	DFID, USAID, AusAID, CIDA, JICA	Provide financial supports to projects relating to tourism
Private Sector Participation	PPP Model	BOOT, BOT, BOO	Investment in tourism projects particularly in tourism infrastructure development

(Source: http://ncrpb.nic.in/pdf_files/FinancingofTourismProjects_delhi.pdf)

Principal financing institutions in West Bengal

The institutional framework of financing projects in West Bengal can be broadly divided in three categories: 1. Commercial banks, 2. Term lending institutions and 3. Other financial institutions. The following table shows present institutional framework of financing projects in West Bengal:

Table 2: Principal financing institutions in West Bengal

Principal Financing Institutions	Examples
Commercial banks	Allahabad Bank, SBI, UBI, IDBI, Bank of India, ICICI, HSBC, ABN AMRO Bank.
Term lending institutions	Industrial Finance Corporation of India (IFCI), West Bengal Financial Corporation (WBFC).
Other financial institutions	Tourism Finance Corporation of India Ltd. (TFCI), West Bengal Industrial Development Corporation Ltd. (WBIDC), India Infrastructure Finance Company (IIFC), Infrastructure Leasing and Financial Services Ltd. (IL&FS)

(Source: West Bengal Industrial Development Corporation)

Principal tourism financing institutions in West Bengal

The above mentioned network of financing institutions helps in financing projects in various sectors. Now after making an in depth analysis about the functions of all those institutions, we got following institutions particularly related to tourism projects financing:

1. Commercial banks: They help tourism sector by providing term loan, working capital finance, lease finance, project finance and personal loan.

2. Infrastructure Development and Finance Company Ltd. (IDFC): It provides specialised finance for projects in infrastructure sector including tourism.

3. Tourism Finance Corporation of India Ltd. (TFCI) (sponsored. by IFCI to finance tourism projects): It provides rupee loan, subscription to shares and debentures, equipment finance, equipment leasing, merchant banking and advisory services.

4. India Infrastructure Finance Company (IIFC): It is a wholly owned Govt. subsidiary formed to accelerate and increase PPPs in infrastructure sector including tourism.

3. Identification of Different Circuits for Tourism Development in West Bengal: Future Possibility of Tourism Investment and Financing

To develop tourism industry in India, Ministry of Tourism, Govt. of India has made an attempt to identify tourism circuits across all the States and UTs. These circuits are proposed to be developed during the 12th Plan, in an integrated manner with Central Financial Assistance and appropriate involvement of State Governments and private sector. IL&FS Infrastructure Development Corporation Ltd (IL&FS IDC) was appointed as the national level consultant by Ministry of Tourism, Govt. of India in this respect. It published two reports (phase I and phase II) on West Bengal tourism (these reports are available at official website of Ministry of Tourism, Govt. of India). We made a detailed contextual analysis of these two reports to analyse and understand the investment and financing possibilities in West Bengal tourism.

For West Bengal four circuits have been identified for integrated development:

1. Circuit 1- Beach Tourism Circuit in Purba Medinipur: Digha – Shankarpur – Tajpur – Junput – Mandarmani.

2. Circuit 2- Pilgrim Tourism Circuit: Ganga Sagar – Birbhum (Tarapeeth – Bakreshwar – Nalhati – Fullura – Saithia – Kankalitala), Tarakeswar, Furfura Sharif.

3. Circuit 3- Nature Tourism Circuit: Dooars and Darjeeling Circuit.

4. Circuit 4: Sunderban Circuit: Gadkhali, Jharkhali, Koikhali, Frazer Island, Diamond Harbour.

Analysis of circuits on the basis of proposed projects, indicative cost and mode of funding:

Table 3: Projects identified with estimated cost and funding mode: Circuit 1

Circuit 1- Beach Tourism Circuit in Purba Medinipur: Digha – Shankarpur – Tajpur – Junput – Mandarmani.

Circuit 1 is all about *Beach Tourism* in Purba Medenipur on the shores of Bay of Bengal. Digha is a very popular sea beach and tourist spot of West Bengal located south west of Kolkata. It is 183 km from the Howrah Bridge. Shankarpur is a fishing harbour situated 14 km east of Digha. Junput is 40 km away from Digha with beautiful sea- view and lines of casuarinas trees. Tajpur and Mandarmoni are relatively new beaches. Mandarmoni offers a 13 km long motor able beach.

Following are the projects identified in the Circuit 1 with the respective indicative cost estimates and source of funding:

Point of Investment/Destination/ Location	No. of Projects Identified (proposed)	Mode of Funding/Financing (w.r.t. NO. of project funding)		Indicative Cost (Rs. in Cr.)	Mode of Funding/Financing (w.r.t. estimated	
		Public	**PPP**		**Public**	**PPP**
Digha	26	19	7	145.85	31.85	114
Shankarpur	16	14	2	53.3	41.8	11.5
Tajpur	17	13	4	55.4	17.9	37.5
Junput	12	10	2	27.9	21.4	6.5
Mandarmoni	11	9	2	15.3	10.8	4.5

(Source: IL&FS Report and own calculation)

(w.r.t. =with respect to)

Analysis of proposed projects of Circuit 1:

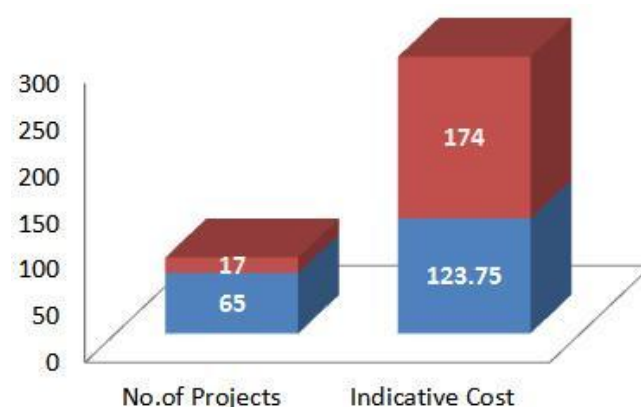*Table 4: Project proposal in Circuit 1: Public and PPP mode*

	Public	PPP	Total
No. of Projects Identified (proposed)	65 (79%)	17 (21%)	82 (100%)
Indicative Cost (Rs. in Cr.)	123.75 (41.56%)	174.00 (58.44%)	297.75 (100%)

(Source: Own calculation)

Graph 1: Number and Cost of proposed projects funding through Public and PPP mode: Circuit 1

So from the above tables and graph we can say that PPP has the majority share in respect to funding projects so far as the cost is concerned. But if we consider the number of identified projects, then public mode of funding acquires majority share. So we can easily understand the importance of PPP in tourism financing of West Bengal as more financing to be made through PPP mode as per the proposal.

Analysis of PPP Funding of Circuit 1:

It is important to analyse the share of public funds and private investment in PPP funding to understand the relative importance of each mode. Following table shows it:

Table 5: Bifurcation of proposed PPP funding: Circuit 1

Total Indicative Cost in PPP (Rs. in Cr.)	Public Funds (Rs. in Cr.)	Private Investment (Rs. in Cr.)
174.00 (100%)	43.5 (25%)	130.5 (75%)

(Source: IL&FS Report and own calculation)

The above table indicates the importance of private investment in West Bengal Tourism. It is three times of public funds.

Circuit 2- Pilgrim Tourism Circuit: Ganga Sagar – Birbhum (Tarapeeth – Bakreshwar – Nalhati – Fullura – Saithia – Kankalitala), Tarakeswar, Furfura Sharif.

Circuit 2 is identified as Pilgrim Tourism. Gangasagar is located at South 24 Pgs and famous for Gangasagar Mela (it is the largest fair in West Bengal). Birbhum has several pilgrim spots. Tarakeswar is 58 km away from Kolkata and one of the most religious destinations in the district of Hooghly. Furfura Sharif is one of the most holy sites for Muslims in West Bengal.

Following are the projects identified in the Circuit 2 with the respective indicative cost estimates and source of funding:

Table 6: Projects identified with estimated cost and funding mode: Circuit 2

| Point of Investment/Desti nation/Location	No. of Projects Identified (proposed)	Mode of Funding/Financing (w.r.t NO. of project funding)		Indicative Cost (Rs. in Cr.)	Mode of Funding/Financing (w.r.t estimated AMOUNT of funding)	
		Public	PPP		Public	PPP
Gangasagar	32	25	7	32.29	14.78	17.51
Birbhum	50	37	13	31.91	6	25.91
Tarakeswar	21	14	7	12.31	4.1	8.21
Furfura Sharif	13	9	4	9.64	2.6	7.04

(Source: IL&FS Report and own calculation)

Analysis of proposed projects of Circuit 2:

Table 7: Project proposal in Circuit 2: Public and PPP mode

	Public	PPP	Total
No. of Projects Identified (proposed)	85 (73%)	31 (27%)	116 (100%)
Indicative Cost (Rs. in Cr.)	27.48 (31.90%)	58.67 (68.10%)	86.15 (100%)

(Source: Own calculation)
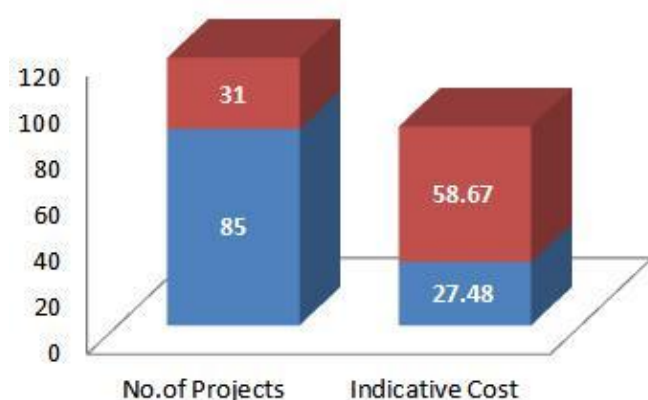
**Graph 2: No. and Cost of proposed projects
funding through Public and PPP mode: Circuit
2**

From the above graph we can understand the
importance of PPP funding in West Bengal
tourism.

Analysis of PPP Funding of Circuit 2:

**Table 8: Bifurcation of proposed PPP funding:
Circuit 2**

Total Indicative Cost in PPP	Public Funds	Private Investment
(Rs. in Cr.)	(Rs. in Cr.)	(Rs. in Cr.)
58.67 (100%)	14.67 (25%)	44.00 (75%)

(Source: IL&FS Report and own calculation)

Here also private investment has 75% share in
total PPP funding. It actually reveals the
possibility and opportunity of private investment
in West Bengal tourism.

**Circuit 3- Nature Tourism Circuit: Dooars and
Darjeeling Circuit.**

Darjeeling and Dooars of North Bengal are very
famous for their scenic beauty. With snow
covered slopes as a backdrop, Darjeeling is a
postcard-perfect town. Darjeeling Himalayan
Railway (DHR) is a UNESCO World Heritage
Site. On the other hand Dooars is famous for its
lush green beauty, rich biodiversity and forests.
Shiliguri/ New Jalpaiguri is the gateway of
Darjeeling and Dooars. This circuit has a huge
possibility in tourism investment and financing.

Following are the projects identified in the Circuit
3 with the respective indicative cost estimates
and source of funding:

Table 9: Projects identified with estimated cost and funding mode: Circuit 3

Point of Investment/Destination/Location	No. of Projects Identified (proposed)	Mode of Funding/Financing (w.r.t NO. of project		Indicative Cost (Rs. in Cr.)	Mode of Funding/Financing (w.r.t estimated AMOUNT of	
		Public	PPP		Public	PPP
Dooars	174	76	98	241.54	34.65	206.89
Darjeeling	92	64	28	68.611	45.375	23.236

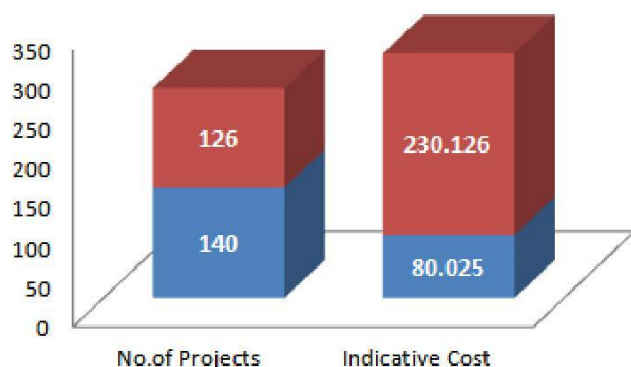*(Source: IL&FS Report and own calculation)*

Analysis of PPP Funding of Circuit 2:

Table 10: Project proposal in Circuit 3: Public and PPP mode

	Public	PPP	Total
No. of Projects Identified (proposed)	140 (53%)	126 (47%)	266 (100%)
Indicative Cost (Rs. in Cr.)	80.025 (25.80%)	230.126 (74.20%)	310.151 (100%)

(Source: Own calculation)

Graph 3: No. and Cost of proposed projects funding through Public and PPP mode: Circuit 3

Like the previous circuits, here also PPP has the dominant position in respect to project cost.

Analysis of PPP Funding of Circuit 3:

Table 11: Bifurcation of proposed PPP funding: Circuit 3

Total Indicative Cost in PPP (Rs. in Cr.)	Public Funds (Rs. in Cr.)	Private Investment (Rs. in Cr.)
230.126 (100%)	57.63 (25%)	172.49 (75%)

(Source: IL&FS Report and own calculation)

Here also we found the share of private investment in total PPP funding is 75%.

Circuit 4: Sunderban Circuit: Gad Khali, Jharkhali, Kohikhali, Frazer Island, Diamond Harbour

Sundarban is the largest single tract of tidal mangrove forest in the world. It is famous for its biodiversity and obviously for The Royal Bengal Tiger. Jharkhali is the last village in Sundarban at South 24 Pgs District and 101 km away from Kolkata. Koikhali and Gadkhali both are in Sundarban at South 24 Pgs District and they have good tourism opportunity. Bakkhali and Frazer Island are two beaches located at South 24 Pgs District. Bakkhali is 130 km away from Kolkata. Frazer Island is well-known for the migratory birds. Diamond Harbour (48 km from Kolkata) is famous for weekend picnic spot.

Following are the projects identified in the Circuit 4 with the respective indicative cost estimates and source of funding:

Table 12: Projects identified with estimated cost and funding mode: Circuit 4

| Point of Investment/ Destination/Location	No. of Projects Identified (proposed)	Mode of Funding/Financing (w.r.t NO. of project funding)		Indicative Cost (Rs. in Cr.)	Mode of Funding/Financing (w.r.t estimated AMOUNT of funding)	
		Public	PPP		Public	PPP
Jharkhali	14	12	2	21.83	5.57	16.26
Kaikhali	6	3	3	18.82	1.81	17.01
Frazer Island, Bakkhali and Henry Island	14	8	6	35.24	12.73	22.51
Diamond Harbour	7	4	3	7.05	4.1	2.95
Misc.	4	2	2	40.43	5.6	34.83

(Source: IL&FS Report and own calculation)

Analysis of proposed projects of Circuit 4:

Table 13: Project proposal in Circuit 4: Public and PPP mode

	Public	PPP	Total
No. of Projects Identified (proposed)	29 (64%)	16 (36%)	45 (100%)
Indicative Cost (Rs. in Cr.)	29.81 (24.16%)	93.56 (75.84%)	123.37 (100%)

(Source: Own calculation)
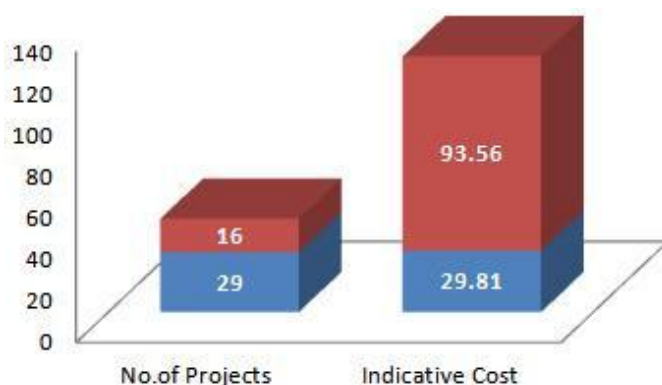
Graph 4: No. and Cost of proposed projects funding through Public and PPP mode: Circuit 4

As usual, this circuit also has majority funding through PPP in respect to indicative cost. So PPP has a very important and dominant role in investment and financing of West Bengal Tourism.

Analysis of PPP Funding of Circuit 4:

Table 14: Bifurcation of proposed PPP funding: Circuit 4

Total Indicative Cost in PPP (Rs. in Cr.)	Public Funds (Rs. in Cr.)	Private Investment (Rs. in Cr.)
93.56 (100%)	23.39 (25%)	70.17 (75%)

(Source: IL&FS Report and own calculation)

This table also shows that private investment is 75% of total PPP funding.

So from the analysis we found huge opportunity for tourism investment and financing in West Bengal.

4. Public Private Partnership (PPP) & Tourism Financing in West Bengal

Public Private Partnership (PPP) is an important avenue for project financing. For tourism financing also PPP is an important and acceptable mode. It often uses private-sector investments to finance a public project when sufficient public funding is not available. To develop tourism infrastructure, the Govt. of West Bengal wants to apply PPP

model of operation (Source: Compendium of Important Government Orders of The Finance Department, Govt. of West Bengal, page no 92).

PPP represents an arrangement between a Government/Statutory body on one side and a private sector entity on the other side, for providing public services through new investments or management of the existing services or both. As per the Department of Economic Affairs, Ministry of Finance, Government of India, Public Private Partnership is "A partnership between a public sector entity (sponsoring authority) and a private sector entity (a legal entity in which 51% or more of equity is with the private partner/s) for the creation and/ or management of infrastructure for public purpose for a specified period of time (concession period) on commercial terms and in which the private partner has been procured through a transparent and open procurement system". The State Govt. has introduced a State Policy on PPP. The objective of this policy is to enhance the quality of life of the people of the State by providing better and efficient public services through participation of the private sector. The State Govt. also wants to create a dedicated PPP Cell in the Finance Department for providing necessary direction and support to the Department for planning and implementation of PPP Projects.

Model adoption

There are different models through which PPP can be operated. Model selection is very vital while considering PPP Projects. The appropriate model should be adopted on a case to case basis. Examples of some PPP models are: 1. Buy-Build-Operate (BBO), 2. Build-Own-Operate (BOO), 3. Build-Own-Operate-Transfer (BOOT), 4. Build-Operate-Transfer (BOT), 5. Build-Lease-Operate-Transfer (BLOT), 6. Design-Build-Finance-Operate (DBFO), 7. Finance Only, 8. Operation & Maintenance Contract (O & M), 9. Design-Build (DB), 10. Operation License. (Source:

Compendium of Important Government Orders of The Finance Department, Govt. of West Bengal, page no 94 & 95)

Proposed application of PPP in West Bengal tourism

In Chapter 3, we found that PPP has an important role in tourism financing. In each circuit, PPP mode of funding is more than public funding in

8 PPP projects on offer in tourism infrastructure

Table 15: Project proposal of the State Govt. in tourism under PPP

respect of indicative cost. For tourism infrastructure creation, the State is implementing perhaps the nation's largest Public Private Partnership (PPP) model in the area of tourism. Total estimated project cost under PPP is Rs.3,280 Crores for 8 projects in phase-I.

So from the above analysis we concluded that Public Private Partnership (PPP) is a viable and important mechanism of financing for proposed tourism projects in West Bengal.

Sl. No.	Project	Description	Estimated Project Cost
1	Gajoldoba Tourism Hub – Phase I	Surrounded by forest, Teesta river and foothills; Star Hotels, Budget Hotels, Aurvedic Spa Village, Hospitality Training Institute, Cultural Zone– Amphitheatre/Craft Village, Herbarium Park, Water	Rs. 1,500 Crores.
2	Kolkata Giant Wheel	On the bank of River Hooghly/Ganges like London Eye	Rs.350 Crores
3	Sylee Tea Tourism & Eco-Tourism Park	Rivers, Hills and Lush Green Tea Plantation	Rs.350 Crores
4	Kunjanagar in the forest	Access to wild life sanctuaries at Jaldapara and Gorumara	Rs.300 Crores
5	Jharkhali Eco-Tourism Park, Sundarbans	Next to Royal Bengal Tiger Sanctuary	Rs.300 Crores
6	Large Tourist Resort-cum-Hotel Project	At Darjeeling, Dakshin Dinajpur, Kolkata, Jalpaiguri, Digha of Purba Medinipur	Rs.200 Crores
7	4 Heritage Tourist Resort Project	At Jhargram, Mahishadal, Panchakot of Purulia, Wasif Manzil of Murshidabad	Rs.200 Crores
8	10 Hotel Management & Catering Training Institutes	At Jalpaiguri, Bankura, Darjeeling, South 24-Parganas, Purba Medinipur, Howrah, Kolkata and Hooghly	Rs.80 Crores

*(Source: Annual Plan 2013-14, Government of West Bengal,
http://planningcommission.nic.in)*

5. Analysis of Amount Sanctioned in 10TH, 11TH AND 12TH Five-Year Plan in West Bengal Tourism

To develop infrastructure and promote tourism, Govt. of India sanctioned money in different five-year plan periods. Now it is necessary to analyse the amount sanctioned in various plan periods in West Bengal tourism to understand the trend of financing tourism projects development. Here we

considered three plan period viz. 10th, 11th and 12th (2012-13) five-year plan.

Following tables show the amount sanctioned (in lakhs) in various schemes of West Bengal tourism in 10th, 11th and 12th (2012-13) Five-Year Plan periods:

Amount sanctioned in 10th Five Year Plan

Table 16: Amount sanctioned in different schemes of West Bengal Tourism: 10th Plan

Schemes	2003-04	2004-05	2005-06	2006-07
Product Infrastructure Development for Destination & Circuits	535.38	221.54	975	2048.58
UNDP-Capacity Building for Service Providers	Nil	40	Nil	Nil
Total	**535.38**	**261.54**	**975**	**2048.58**

(Source: Ministry of Tourism, Govt. of India)

Amount sanctioned in 11th Five Year Plan:

Table 17: Amount sanctioned in different schemes of West Bengal Tourism: 11th Plan

Schemes	2007-08	2008-09	2009-10	2010-11	2011-12
Product Infrastructure Development for Destination & Circuits	3163.17	3238.27	2822.26	2109.68	2814.21
Capacity Building for Service Providers	18.3	19	Nil	Nil	20.001
Central Financial Assistance for IT	50	37.06	Nil	50	Nil
Domestic Promotion & Publicity including Hospitality (Fair & Festivals)	10	25	15	42.48	50
Total	**3241.47**	**3319.33**	**2837.26**	**2202.16**	**2884.211**

(Source: Ministry of Tourism, Govt. of India)

Amount sanctioned in 12th Five Year Plan:

Table 18: Amount sanctioned in different schemes of West Bengal Tourism: 12th Plan

Schemes	2012-13
Development of Dooars as a mega circuit	4668.46
Domestic Promotion & Publicity including Hospitality (Fair & Festivals)	26
Total	**4694.46**

(Source: Ministry of Tourism, Govt. of India)

Above tables show that majority amount was sanctioned for development of product infrastructure for destination and circuits during those plan periods. Following table makes it clear:

Development of product infrastructure for destination and circuits in West Bengal tourism

Table 19: Proportion (%) of amount sanctioned for development of product infrastructure in West Bengal tourism during the 10th, 11th and 12th Plan

	Amount (in lakhs) sanctioned for development of product infrastructure for destination and circuits	Total amount (in lakhs) sanctioned in the particular financial year
2003-04	535.38 (100%)	535.38 (100%)
2004-05	221.54 (84.71%)	261.54 (100%)
2005-06	975.00 (100%)	975.00 (100%)
2006-07	2048.58 (100%)	2048.58 (100%)
2007-08	3163.17 (97.58%)	3241.47 (100%)
2008-09	3238.27 (97.56%)	3319.33 (100%)
2009-10	2822.26 (99.47%)	2837.26 (100%)
2010-11	2109.68 (95.80%)	2202.16 (100%)
2011-12	2814.21 (97.57%)	2884.211 (100%)
2012-13	4668.46 (99.45%)	4694.46 (100%)

(Source: Own calculation)

We found that on an average 97% of the total amount sanctioned in each financial year was for development of product infrastructure for destination and circuits. It is a good sign for West Bengal tourism.

Trend Analysis of the amount sanctioned for development of product infrastructure for destination and circuits in West Bengal tourism

Tourism development is possible with proper investment and financing. Here development means the development of tourism infrastructure. To understand the trend of the amount sanctioned for development of tourism infrastructure for destination and circuits in West Bengal, following tables and graphs are required:

Graph 5: Amount sanctioned for development of product infrastructure in West Bengal tourism during the 10th, 11th and 12th Plan

Table 20: Trend Analysis of amount sanctioned for development of product infrastructure in West Bengal tourism during the 10th, 11th and 12th Plan

| Year	Amount (in lakhs) sanctioned	Trend Value
2003-04	535.38	100
2004-05	221.54	41.38
2005-06	975	182.11
2006-07	2048.58	382.64
2007-08	3163.17	590.83
2008-09	3238.27	604.85
2009-10	2822.26	527.15
2010-11	2109.68	394.05
2011-12	2814.21	525.65
2012-13	4668.46	871.99

(Source: Own calculation)
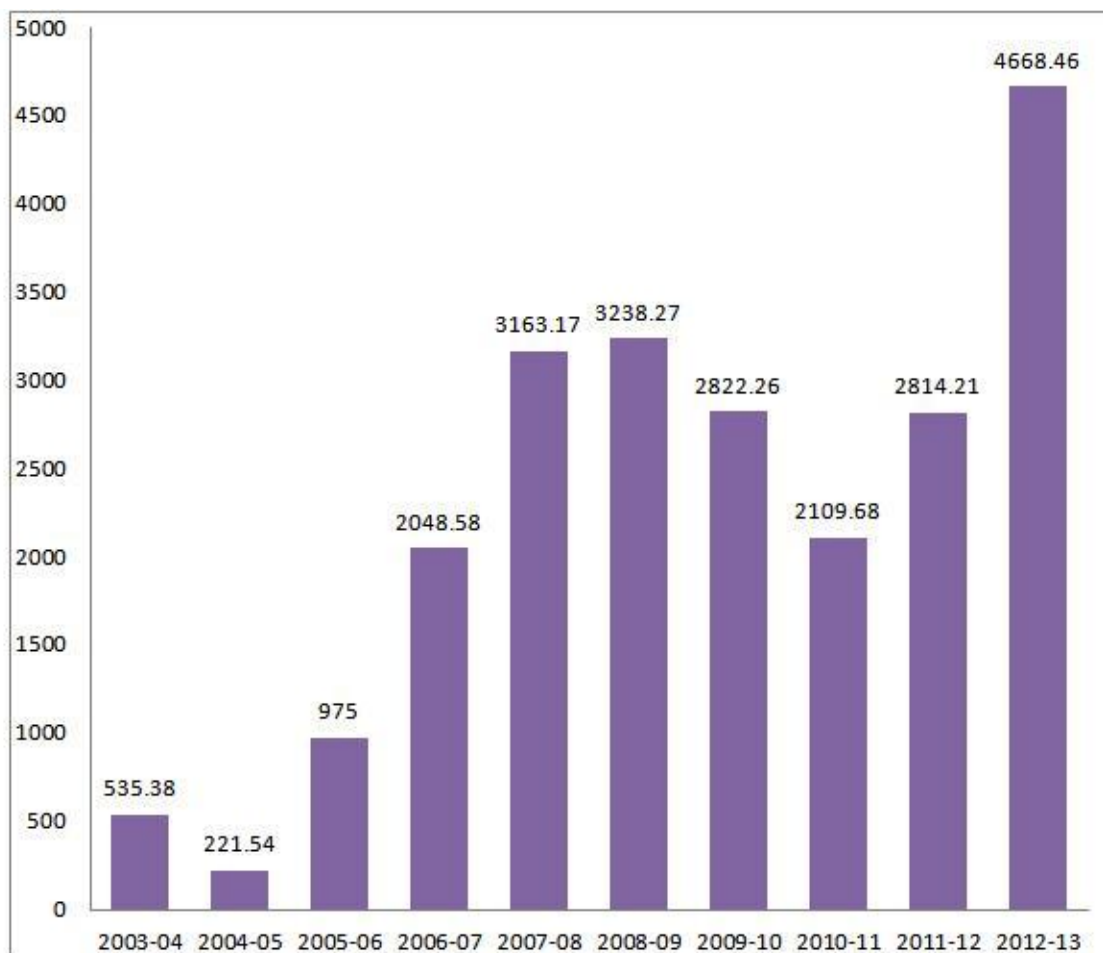
This graph depicts an increase in amount sanctioned for development of product infrastructure for destination and circuits in West Bengal tourism for the financial year 2005-06, 2006-07, 2007 -08 and 2008-09, although the rate of increase is different in different year. We can say that relatively lower amount was sanctioned in 2009-10 and 2010-11, but after that again it was increased by a good extent. Following graph explains this with the help of trend value (taking 2003-04 as Base Year = 100):

The trend shows a sharp increase in amount sanctioned for investment in tourism infrastructure particularly after 2010-11 which indicates the good possibility of development of West Bengal Tourism.

6. Conclusion

At the end of this research paper we can conclude that investment and financing scenario of West Bengal tourism is highly promising. It has enormous opportunities in tourism investment and tourism financing. The State should reap the benefits of possible investment and financing so that the State can generate more revenue, foreign exchange and employment. In this respect PPP can be considered as a way of tourism financing (although PPP has some disadvantages, but that is a separate debate). Private players are encouraged to participate in West Bengal tourism. Tourism has the power to open the door of various possibilities. It should be the sunrise industry in West Bengal. So tourism can be correctly considered as a new area of investment and financing in West Bengal.
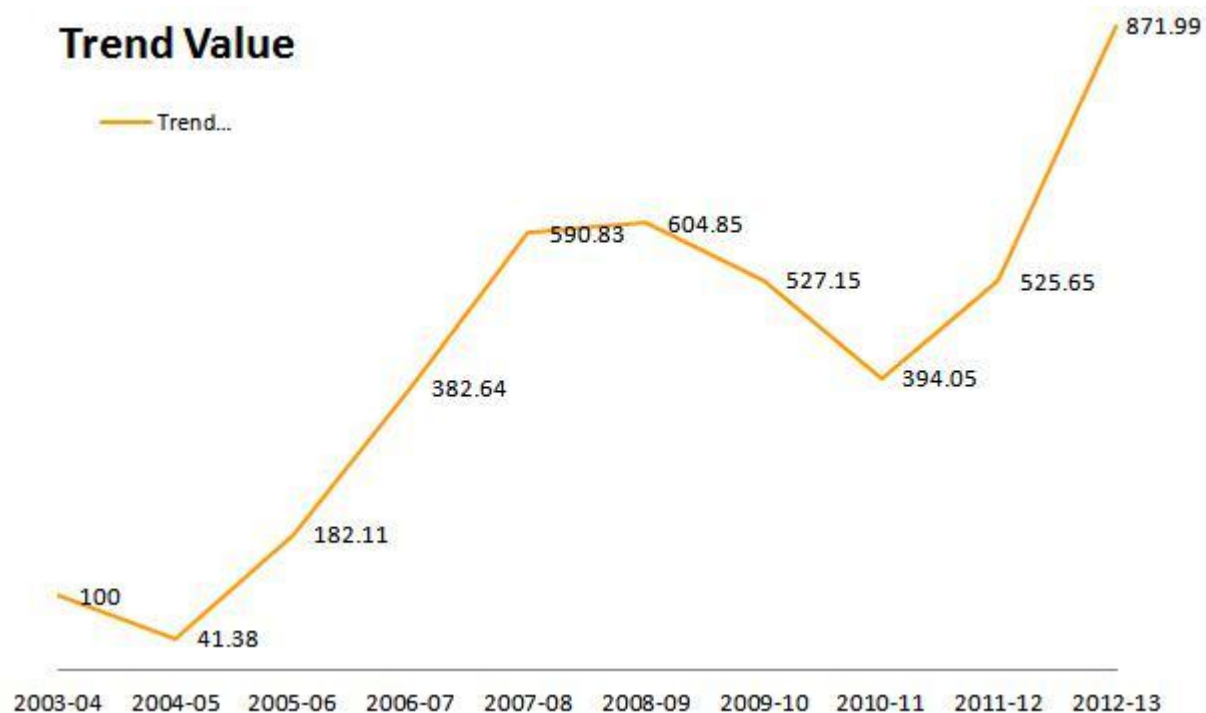
Graph 6: Trend of amount sanctioned for development of product infrastructure in West Bengal tourism during the 10th, 11th and 12th Plan

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Components of Ecological behaviour and consumer attitude towards sustainable green environment: An empirical analysis on Kolkata citizens

Sankhajit Dutta

Abstract

Strategic direction of Green marketing makes the academician, Industrialist and common people more fascinated towards the ecological products. Responsible citizen acknowledge such practices not only because it is a healthier option but at the same time it helps to deliver sustainable environment for future generations. Inclination towards biodegradable product for ecological reasons has stopped consumer from buying a product that causes pollution. Economic institutions are aware of the grandness of these attitudes towards the environment while undergoing their research. The purpose of this paper is to focus on environmental attitudes of the Kolkata citizen as meaningful mediator of ecological behavior. These further attempts to describe the famous DEM model as an innovative marketing tool to analysis the different behavioural perspective of the consumer in Kolkata. The model illustrates a three-dimensional approach within the variables, which addresses the emotional, cognitive and conative components. A random sample survey of 384 individuals was used to verify the conceptual model designed by the researcher. This model was assessed initially by principal component and subsequently through EFA (exploratory factor analysis). Non recursive OLS estimation is undergone to examine the impact of each construct (Verbal commitment –VC, as a moderator variable) and AF (Affect commitment-AC, as an exogenous variable) on AC (Actual commitment – endogenous variable). Reproduced correlation is finally executed to validate the authenticity of the model in Kolkata metro city. Finally, outcome reveals that environmental attitudes of the citizen have a substantial impact on ecological behaviour and actual commitment to address the long term environmental sustainability.

Key Words: Ecological consumer behaviour, environmental attitudes, the environmental commitment, fitness of the model (DEM).

1.0 Introduction

In the last three decades, concerns for protection of the environment have increased by manifold among consumers. Initially, people were interested in discovering main environmental problems, but with changing time consumers have started to exercise their decision making process during the purchase of products. We are experiencing a positive trend in accepting eco-friendly product and simultaneously consumers are reminded that environmental protection is not the only task of firms or institutions alone. Changing trends in consumer behavior is influencing supplies when consumers spontaneously decide to buy certain eco-friendly products instead of others. This shift in consumption patterns can allow the presence of ecological products in the market and reject the rest. The emerging trend makes it important for organization to access opportunities that arise in the ecological market space which has already developed an impetus. In the present study, the author has focused on consumer characteristics

that uniquely define their respectful behaviour towards the environment and ecological product.

1.1 Rationale of the study

Traditionally, researchers have been interested in understanding consumer behaviour from three different perspectives: During the first phase the study attempt to assess consumers by means of demographic and socioeconomic variables (Vining and Ebreo, 1990; Bhate and Lawler, 1997; Daniere and Takahashi, 1999; Fraj*et al.* 1999; Fraj and Martínez,2003); Second phase considers information and knowledge gaps that people have with regard to environmental problems and issues (Arbuthnot and Lingg, 1975; Ramsey and Rickson, 1976; Grunert and Kristensen, 1992); and the third phase encounter certain viewpoint that employs psychographic variables, including values, lifestyles, personality characteristics and attitudes of normal individual (Batson*et al.* 1986; Granzin and Olsen, 1991; Ramanaiah *et al.*, 2000). All these variables are quite complex and difficult to measure in any platform. Demographic variables turned out to have little significance and thus, researchers preferred to use psychographic and knowledge variables. This study aims to discover ecological consumer's psychographic profile which can establish a foundation base for future analysis.

2.0 Objective of the study:

- The purpose of this study is to focus on psychographic variables and consumers' attitudes which are associated with ecological product.

- To assess what attitudes best define ecological consumer's profile.

- To examine fitness of the proposed model.

3.0 Theoretical framework

Several authors used before in their studies the classical structure of Psychology. Consequently, they considered different values that influence people's personality and characteristics; people's

personality normally influences their attitudes to the environment (positive or negative); and their attitudes are directly related to their behaviour. Allport (1935) defined attitude as: 'A mental and neural state of readiness, which exerts a direct influence on the individual's response to all objects and situations with which it is related' (p. 798). He stated that an attitude is a disposition that influences human behaviour.

Later, other researchers took Allport's theory as the basis, they have established their logic just by mentioning the classical structure (Maloney and Ward, 1973; Hines, et *al.*, 1987; Kaiser *et al.*, 1999a,b): Value, Personality, Attitude, Behaviour. Kaiser *et al.* (1999b) shows two types of environmental attitudes to study ecological behaviour (p. 2). The first type analyses attitudes towards ecological behaviour (Maloney and Ward, 1973; Hines *et al.*, 1987; Kaiser *et al.*, 1999b) (e.g. Recycling), and the second approach pertains to attitudes towards environment as a whole (Maloney and Ward, 1973; Maloney *et al.*, 1975; Schahn and Holzer, 1990) (e.g. air and water quality).The present study is based on these two approaches.

3.1 The two-component approach to attitudes–behavior relationship

The first approach is connected with environmental attitudes towards the ecological behaviour. Ajzen and Fishbein's (1980) pointed "theory Reasoned Action" which supposed to predict behaviour and attitudes. They define the 'intention' variable related to attitudes and consider it as the main predictor of behaviour. This theory makes two assumptions: the first assumes and depicts the systematic use of available information and the second establishes that people consider the implications of their actions before they decide to engage or not in certain behaviours. This framework is used to build our model together with the components introduced by Maloney *et al.* (1975).

3.2 The three-component approach to attitudes–behaviour relationship

Studies of environmental concern are more frequent in areas of the attitudes– behaviour relationship. They either analyse individual's attitude to the natural environment or towards some elements of it. Rosenberg and Hovland (1960) proposed that in this approach, cognitive, emotional and intentional components of attitude need to be distinguished. The cognitive component consists of what correctly or wrongly, we interpret on something. The emotional component consists of our feelings on the subject matter. The third component, intentional one, defines intentions to act in certain ways, and is sometimes called behavioural component. Maloney *et al.*'s (1975) research first advocated importance of determining such components.

These authors built a scale with four subscales. Initially, the original scale was composed of 128 items on an ecological attitude-knowledge scale, but they revised to provide a more practical and efficient instrument. During research author left 10 items in the scale that measured emotional component; 15 questions in the factual knowledge scale about environmental cognitive features; a 10-item verbal commitment scale that measured positive and negative environmental attitude and finally, a fourth scale that assessed ecological behaviour with 10 items. At the beginning, three environmental attitude components – affective, cognitive and conative – are used to predict ecological behaviour. However, we found other approaches that show one of those components as single indicators of environmental attitude (Arbuthnot, 1977; Dispoto, 1977; Schahn and Holzer, 1990). A **"DEM"** (Direct effect model) was developed with these components where affective and verbal commitment was considered as independent variables and, conversely on the other hand, actual commitment or intentional component was considered as dependent variable.

Verbal commitment has been used as a mediator to describe attitude towards behaviour.

3.3 The proposed model and hypotheses

Using theoretical basis for organizing relevant conceptual model outlined before, a three-dimensional 'attitude approach' was developed concerning attitudes towards environment and ecological behaviour. This study seeks to define relationship between three components (Vining and Ebreo, 1990) (Fig. 1): *affect commitment* (Af), *verbal commitment* (VC) and *actual commitment* (AC). The Theory of Reasoned Action argues that attitude influences behavior through intention, although these variables affect and influence behaviour directly. Previous studies found this relationship become stronger even (Dunlap and Van Liere, 1978; Ajzen and Fishbein, 1980; Chan, 1999, 2001; Kaiser *et al.*, 1999a,b) while discussing with respect to ecological behaviour. In this analysis, AC was considered as a behavioural component (Bhate and Lawler, 1997).

The literature demonstrates that the relationship between values, which make people to show a higher or a lower affection level towards something or someone control environmental attitudes (Schultz and Zelezny, 1999). Incidentally, several studies have already demonstrated relationship between values on this scale and environmental behaviour (Stern *et al.*, 1995; Thogersen and Grunert-Beckmann, 1997)
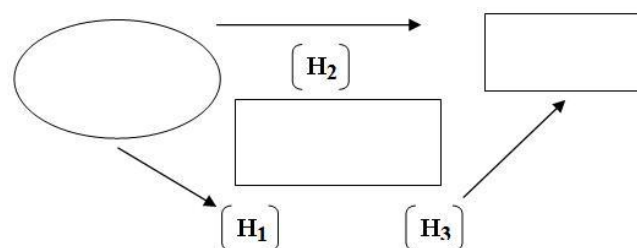

Figure1-The proposed model of our research (DEM-Direct Effect model)-Partial mediation

On the other hand, Maloney *et al.*'s (1975) opined that revised scale and its effect on different

subscale is a predictable phenomena, Nowhere author can distinguish between those studies that found a declining relationship between individual's environmental effect and ecological behaviour because there is another mediator variable in -between, which is none other than ecological behaviour or attitude (Ajzen and Fishbein, 1980; Kotchen and Reiling, 2000). So, based on depicted relationships in Fig. 1 related to environmental effect and on literature findings, following hypotheses have been developed:

Hypothesis1: People with a higher degree of affect about the environment will have stronger environmental attitude.

Hypothesis 2: People with a higher degree of affect about the environment will have stronger ecological behavior.

Hypothesis 3: People with a major environmental attitude will demonstrate a stronger ecological reaction.

4.0Methodology

A pre-test questionnaire was administered to 50 citizens of the Kolkata city. This pre-test (Pilot study) was developed to discover any possible weakness in the questionnaire. It was revised and, between 7th Jan to 7thApril 2014, a final questionnaire was administered to a random sample of 384(n_0) individuals. From them, a total of 360 valid (93.75%) questionnaire was selected for final analysis. As the sample is drawn from a finite population so a specific assumption was made that p- the maximum variability in population proportion is considered as 0.5 so the value of q will be 0.5, The sample size (n) is calculated as follows

n= $(Z_2pq)/e_2$.where z =1.96 and e (0.05) at 5% level of significance. Further sample size correction is done by the following method.

n_0= (Nn)/ (N-n+1), where N is the assumed population size of Kolkata metro city (census report 2001). Non probabilistic sample process (convenient sampling) is used to collect primary data from market. Researcher delivered

questionnaire to householders and collected once they are completed. The questionnaire consisted of three large blocks. The first portion included questions about recycling practices and the purchase of ecological products. The second block attempted to measure variables such as personality, attitudes, values and individuals' lifestyles and the third asked about demographic and socio-economic factors.

Table no1 Sample profile of the survey

Demographics	Frequency-N=360	Percentage
Female	201	0.558333
Male	159	0.441666
(Age)		
15-24	102	0.283333
25-29	96	0.266666
40-54	63	0.175
55-64	60	0.166667
>64	39	0.108333
Without studies Primary school	63	0.175
Secondary school	195	0.54166667
University and above	102	0.28333333
Occupation		
Student	75	0.20833333
Housewife	51	0.14166667
Entrepreneur/professional	66	0.26666667
Executive/independent worker	36	0.1
Manager	33	0.09166667
Specialized worker	12	0.03333333
Retired	27	0.075
Unemployed	24	0.06666667
Others	6	0.01666667
Family Income		
Below10, 000	48	0.13333333
10001-20,000	156	0.43333333
20001-30,000	144	0.31666667
above 30,000	42	0.11666667

Each scale originally had 10 items and respondents had to indicate if the statement was true or false. This was transformed into a 7-point Likert scale that ranged from 'disagree with all' (1) to 'strongly agree' (7). After pre-test, three items were removed from ecological Af and VC scales, and one from the AC scale. A brief scheme about number of people who totally agreed or totally disagreed with each statement for these three scales can be seen in Table 2.This table shows that for the environmental affect scale, a high percentage of people were concerned about environmental problems. The chronbach alpha value (mentioned below) on 22 items indicates (0.868>0.7) that almost 86% of the collected primary data are considered to be reliable for analysis.

Reliability Statistics

Cronbach's Alpha	N of Items
0.868	22

Table 2. The items that measure the attitude and number of agreement

(A) Affect commitment(Af)	Agree	Indifferent	Disagree
1It frightens me to think that much of the food I eat is contaminated with	266	19	75
2 It genuinely infuriates me to think that the government doesn't do more to help control pollution of the environment.	289	19	52
3 I become incensed when I think about the harm being done to plant and animal life	87	203	70
4I get depressed on smoggy days	267	69	24
5When I think of the ways industries are polluting, I get	69	123	136

	Agree	Indifferent	Disagree
6The whole pollution issue has never upset me too much since I feel it's somewhat	135	65	160
7I rarely ever worry about the effects of smog on myself and	176	78	106
(B)Verbal commitment(VC)- Environmental	**Agree**	**Indifferent**	**Disagree**
1 I'd be willing to ride a bicycle /metro/tram or other pollution free mode of transport to work/travel in order to reduce air pollution.	217	45	98
2I would be willing to renew my pollution control certificate timely or ready to use pollution free vehicle to reduce air pollution	245	43	72
3 I would donate a day's pay to a foundation to help	92	106	162
4 I would be willing to stop buying products from companies guilty of polluting the environment, even though it might be	51	135	174
5 I'd be willing to write article on print media concerning ecological problems.	176	40	144
6 I wouldn't go house to house to distribute literature on the environment**	54	76	230
7 I would not be willing to pay a pollution tax even if it would considerably decrease the smog	151	38	171

(C)Actual commitment(AC)- Ecological behavior	Agree	Indifferent	Disagree
1 I guess I've never actually bought a product because it had	72	99	189
2 I keep track of my neighbours friends and relatives those who raise voices on environment issues	102	108	150
3 I have contacted a community agency to find out what I can do about pollution	45	84	231
4 I make a special effort to buy products in recyclable	27	54	279
5 I have attended a meeting of an organization specifically concerned with betterment of the	129	75	156
6 I have switched over to other products for ecological reason	27	36	297
7 I have never joined a cleanup drive.**	151	42	167
8 I have never attended a meeting related to ecology.**	89	56	215

**These items, negatively formulated, were reversed in coding and then, these sentences must be interpreted on the contrary

5.0Analyses

5.1 Scales validation analyses

The cultural environment in India is not same as in USA. As the scales used mostly in USA and EU countries, for our study, it was necessary to validate them in the present environment. Based on the computed data, reliability of data is done by means of Cronbach's alpha (Af-0.602, VC-0.678, AC-0.968).This established the internal consistence of each scale and it was possible to prove that their individual value passed threshold of 0.60 set up by Miquel*et al.* (1997). To validate Af, VC and AC scales, SPSS 22programme was used.Furtheroverall value of chronbach alpha (á) 0.868 indicates 86.8% data are reliable.In this analysis, it was necessary to remove some items as some of them presented factor loadings lower than 0.50. **Table 3** shows the communalities after extraction.

5.2 Factor analysis

As par Table 4 there are five components (1 to 5) depicts an Initial Eigen value higher than 1, (Eigen value- 10.628, 2.793,2.454, 1.896,1.149) are extracted through principal component analysis**.**

Table 3Communalities: Extraction method-Principle component analysis

	Initial	Extraction		Initial	Extraction		Initial	Extraction
AF1	1	0.82	VC2	1	0.907	AC2	1	0.921
AF2	1	0.89	VC3	1	0.959	AC3	1	0.911
AF3	1	0.891	VC4	1	0.964	AC4	1	0.718
AF4	1	0.537	VC5	1	0.964	AC5	1	0.885
AF5	1	0.872	VC6	1	0.897	AC6	1	0.898
AF6	1	0.766	VC7	1	0.777	AC7	1	0.709
AF7	1	0.849	AC1	1	0.97	AC8	1	0.983
VC1	1	0.833						

Table 4 Total variance explained

Component	Initial Eigen values		
	Total	% of Variance	Cumulative %
1	10.628	48.307	48.307
2	2.793	12.697	61.004
3	2.454	11.156	72.16
4	1.896	8.618	80.777
5	1.149	5.224	86.002

*Principle component matrix analysis (extraction method) identified 5 major factors,

Table 5 Rotated Component Matrixa : Varimax with Kaiser Normalization

a. Rotation converged in 9 iterations.

	F1	F2	F3	F4	F5
AF1	-0.58	0.611	0.019	-0.064	-0.326
AF2	0.224	0.227	0.846	-0.156	-0.219
AF3	-0.155	0.908	0.067	0.092	-0.171
AF4	0.637	-0.003	0.187	0.249	0.182
AF5	0.094	-0.113	0.732	0.084	0.555
AF6	0.509	0.111	0.195	0.165	0.656
AF7	0.326	-0.081	-0.193	-0.175	0.818
VC1	-0.209	0.647	-0.484	0.212	0.302
VC2	0.886	-0.242	0.152	-0.025	0.2
VC3	0.931	-0.061	-0.138	0.226	0.138
VC4	0.9	-0.214	0.143	-0.27	0.123
VC5	0.9	-0.214	0.143	-0.27	0.123
VC6	0.718	-0.249	0.484	-0.291	0.005
VC7	-0.075	0.867	-0.044	0.099	0.087
AC1	0.857	-0.287	0.123	-0.343	0.141
AC2	0.931	0.06	-0.02	-0.183	0.132
AC3	0.945	0.03	-0.017	-0.124	0.04
AC4	0.644	-0.33	-0.369	0.102	0.218
AC5	-0.071	0.079	0.2	0.912	-0.052
AC6	-0.438	0.359	-0.305	0.691	0.087
AC7	-0.124	-0.206	0.734	0.332	0.039
AC8	0.849	-0.316	0.031	-0.377	0.141

Table 5 Rotated component matrix (rotation method) identified controlling variables like Af4,Af6,VC2,VC3,VC4,VC5,AC1,AC2,AC3,AC4,AC6 and AC8 (values>0.5).These are variables controlling mainly factor1, which gathered items on people's negative emotions about pollution problems.*F1 is labeled as -People attitude and commitment level towards ecological behavior.* This dimension explained 48.307% of the variance. Similarly Factor2 mainly controlled by Af1, Af2, VC1, and VC7 (Eigen value2.793) variables which explained 61.004% of the cumulative variance. This dimension has items about people's disposition to use an ecological transport system. SoF2 can be labeled as *Influence of pollution on environmental attitude.*F3 factor (Eigen value2.454)-mainly controlled by Af2, Af5, and AC7, which explained 72.16 % of cumulative variance here F3 is labeled by *Influence of pollution on ecological behaviour and environmental attitude.*F4 (Eigen value-1.896) is mainly controlled byAC5 and AC6, which explained 80.77% of cumulative variance.F4 is labeled by *people ecological behavior.* F5 (Eigen value 1.148) controlled by Af6, Af5 and Af7 which explained 86.002% of cumulative variance. Factor F4 and F5 have two common variables, which are probably that people attitude towards clean up drive and attending ecological meeting controlling both the factor.

5.3 Validity of the test result: *KMO (Kaiser-Meyer-Olkin)* a measure of sample adequacy value 6.567, (computed data>5) validates the factor analysis result Further *Bartlett's test* of sphericity - chi-square result 76.45 (dof=42) with p value =0.0000) shows significance of the test result. The result establishes variables are correlated with each other (computed data).So the population correlation matrix is not an identity matrix.

5.4Determination of proposed Model Fitness

Final step in factor analysis involves determination of model fitness. So the difference between observed correlation (as given in the input correlation matrix) and the reproduced

correlation(as estimated from the factor matrix) can be examined to determine the model fit In Table 6(ref annexure) we can see there are only 43 residuals (10% approx) larger than 0.05 indicating acceptance of the model. In table 6 lower left triangles contains reproduced correlation matrix; diagonal represents the communalities, upper triangle, the residuals between the observed correlation and reproduced correlations. So we can establish the fact that population correlation matrix is not an identity matrix.

5.5 Causal relationships

Regarding *ecological affect*, the construct which explains this dimension is formed by two items related to people's level worry about pollution. When this variable is related to environmental attitude (H1), results are significant (0.520 at *P* =0.00)-(computed data) and quite strong. That means that people concerned about pollution problems will be encouraged to show a major environmental attitude and people with a higher degree of affect about the environment will have a stronger environmental attitude as we proposed in H1.So null hypothesis is accepted. There are two relationships between affect and ecological behaviour. There is also a positive and a quite a strong correlation between affect and behaviour to reduce purchasing of pollutant or non-environmentally friendly products (H2) (0.97 at *P*=0.00)-(computed data). This means that people worried about pollution will be more involved with the environment and will change their way of living for ecological reasons. They may be interested in joining green team associations or attending meetings where ecological topics are discussed. So the null hypothesis is accepted

The second relationship concerns with attitudes: "*I have never joined a clean up drive*'; '*I have never attended a meeting related to ecology*'. Although

these statements are phrased in a negative manner, but still, they do reflect a positive ecological behaviour. In this case, the outcome 0.148, (p=0.000) which is positive and significant but particularly weak. The third relationship relates *environmental attitude to* ecological behaviour. In this case, the construct of environmental attitude is formed by one dimension, which consists of two items pertaining to that "*I would donate a day's pay to a foundation to help improve the environment and I subscribe to ecological publications*". These findings produce positive, but not significant relationships (0.978 and p=0.115) (computed data). Similarly "*I would donate a day's pay to a foundation to help improve the environment and I make a special effort to buy products in recyclable containers*" These findings produce positive, but not significant relationships (0.053 and p=0.509>0.05) between the variables. Therefore, this does not support hypothesis H3, which stated that people with a major environmental attitude would have stronger environmental and behavioural commitment. So the null hypothesis is rejected

6.0 Conclusion:

This study examines the influence of several factors on ecological consumer behavior, and thus validates a conceptual model. The results from the reproduced correlation matrix (ref to table-6) support some of our hypothesized relationships and, in particular, confirm significant influence of environmental effect on ecological behaviour. In Kolkata, policy-makers and green marketers have recently become more aware of the environment and concern about the adverse consequences. So, new opportunities and challenges are arising in the market. Thus, it is important that producers should know how the consumers are going to behave towards a new ecological product and take action to address their needs, emotions and attitudes.

7.0 Future implications of research

There is a scope of improving the proportion of explained variance of ecological behaviour and introducing new measures within the model. One can include environmental knowledge variables as an important predictor (Kaiser *et al.*, 1999a, b). Generally, the proposed framework has worked correctly although there are asymmetric influences of ecological affect and environmental attitudes towards ecological behaviour that need to be explained. This will be a priority for future research.

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Annexure:

Table no-6-Reproduced correlation among variables

Reproduced Correlations

Repro Corrln	AF1	AF2	AF3	AF4	AF5	AF6	AF7	VC1	VC2	VC3	VC4	VC5	VC6	VC7	AC1	AC2	AC3	AC4	AC5	AC6	AC7	AC8
AF1	.820a	0.106	0.696	-0.443	-0.295	-0.448	-0.497	0.396	-0.722	-0.639	-0.672	-0.672	-0.542	0.537	-0.694	-0.535	-0.535	-0.66	0.052	0.394	-0.074	-0.706
AF2	0.106	.890a	0.251	0.222	0.48	0.135	-0.26	-0.409	0.232	0.013	0.289	0.289	0.558	0.108	0.253	0.205	0.215	-0.306	0.04	-0.401	0.486	0.172
AF3	0.696	0.251	.891a	-0.097	-0.155	-0.062	-0.293	0.556	-0.384	-0.212	-0.37	-0.37	-0.332	0.79	-0.441	-0.13	-0.139	-0.452	0.188	0.421	-0.095	-0.475
AF4	-0.443	0.222	-0.097	.537a	0.319	0.521	0.277	-0.118	0.624	0.649	0.556	0.556	0.478	-0.018	0.51	0.568	0.575	0.408	0.209	-0.149	0.149	0.48
AF5	-0.295	0.48	-0.155	0.319	.872a	0.556	0.338	-0.262	0.33	0.089	0.259	0.259	0.428	-0.08	0.252	0.124	0.084	-0.043	0.178	-0.198	0.599	0.185
AF6	-0.448	0.135	-0.062	0.521	0.556	.766a	0.627	0.103	0.581	0.567	0.499	0.499	0.388	0.123	0.464	0.533	0.486	0.379	0.127	-0.071	0.138	0.433
AF7	-0.497	-0.26	-0.293	0.277	0.338	0.627	.849a	0.182	0.447	0.407	0.431	0.431	0.216	-0.032	0.454	0.442	0.363	0.468	-0.271	-0.162	-0.191	0.478
VC1	0.396	-0.409	0.556	-0.118	-0.262	0.103	0.182	.833a	-0.361	-0.078	-0.416	-0.416	-0.606	0.646	-0.455	-0.145	-0.185	-0.083	0.146	0.644	-0.381	-0.435
VC2	-0.722	0.232	-0.384	0.624	0.33	0.581	0.447	-0.361	.907a	0.84	0.902	0.902	0.778	-0.269	0.884	0.838	0.838	0.636	-0.085	-0.521	0.051	0.871
VC3	-0.639	0.013	-0.212	0.649	0.089	0.567	0.407	-0.078	0.84	959a	0.787	0.787	0.552	-0.083	0.74	0.842	0.857	0.724	0.1	-0.22	-0.123	0.739
VC4	-0.672	0.289	-0.37	0.556	0.259	0.499	0.431	-0.416	0.902	0.787	.964a	0.964	0.848	-0.275	0.96	0.888	0.88	0.597	-0.305	-0.69	-0.047	0.955
VC5	-0.672	0.289	-0.37	0.556	0.259	0.499	0.431	-0.416	0.902	0.787	0.964	.964a	0.848	-0.275	0.96	0.888	0.88	0.597	-0.305	-0.69	-0.047	0.955
VC6	-0.542	0.558	-0.332	0.478	0.428	0.388	0.216	-0.606	0.778	0.552	0.848	0.848	.897a	-0.319	0.847	0.698	0.699	0.337	-0.239	-0.752	0.222	0.814
VC7	0.537	0.108	0.79	-0.018	-0.08	0.123	-0.032	0.646	-0.269	-0.083	-0.275	-0.275	-0.319	.777a	-0.34	-0.024	-0.054	-0.29	0.151	0.434	-0.165	-0.364
AC2	-0.535	0.205	-0.13	0.568	0.124	0.533	0.442	-0.145	0.838	0.842	0.888	0.888	0.698	-0.024	0.86	.921a	0.91	0.597	-0.239	-0.495	-0.198	0.858
AC3	-0.535	0.215	-0.139	0.575	0.084	0.486	0.363	-0.185	0.838	0.857	0.88	0.88	0.699	-0.054	0.848	0.91	.911a	0.601	-0.184	-0.48	-0.175	0.844
AC4	-0.66	-0.306	-0.452	0.408	-0.043	0.379	0.468	-0.083	0.636	0.724	0.597	0.597	0.337	-0.29	0.597	0.597	0.601	.718a	-0.064	-0.198	-0.24	0.632
AC5	0.052	0.04	0.188	0.209	0.178	0.127	-0.271	0.146	-0.085	0.1	-0.305	-0.305	-0.239	0.151	-0.379	-0.239	-0.184	-0.064	.885a	0.624	0.44	-0.43
AC6	0.394	-0.401	0.421	-0.149	-0.198	-0.071	-0.162	0.644	-0.521	-0.22	-0.69	-0.69	-0.752	0.434	-0.741	-0.495	-0.48	-0.198	0.624	.898a	-0.011	-0.743
AC7	-0.074	0.486	-0.095	0.149	0.599	0.138	-0.191	-0.381	0.051	-0.123	-0.047	-0.047	0.222	-0.165	-0.065	-0.198	-0.175	-0.24	0.44	-0.011	.709a	-0.137
AC8	-0.706	0.172	-0.475	0.48	0.185	0.433	0.478	-0.435	0.871	0.739	0.955	0.955	0.814	-0.364	0.971	0.858	0.844	0.632	-0.43	-0.743	-0.137	.983a

Residualb	AF1	AF2	AF3	AF4	AF5	AF6	AF7	VC1	VC2	VC3	VC4	VC5	VC6	VC7	AC1	AC2	AC3	AC4	AC5	AC6	AC7	AC8
AF1		-0.005	-0.057	-0.154	0.084	-0.027	-0.036	0.045	0.036	0.014	0.019	0.019	0.022	0.019	0.048	-0.005	-0.017	0.153	0.025	0.036	0.038	0.037
AF2	-0.005		0.008	-0.009	-1.09E-05	-0.019	0.057	-9.19E-05	-0.029	-0.028	-0.039	-0.039	-0.025	-0.044	-0.018	0.012	0.041	0.083	0.041	-0.018	-0.049	0.008
AF3	-0.057	0.008		0.037	-0.026	-0.032	0.06	0.035	0.003	0.002	-0.001	-0.001	0.006	-0.111	-0.013	-0.017	0.003	-0.055	0.021	-0.027	-0.007	0
AF4	-0.154	-0.009	0.037		-0.088	0.161	-0.076	-0.073	-0.131	-0.068	-0.05	-0.05	-0.036	-0.04	-0.056	-0.048	-0.012	-0.099	-0.112	-0.094	-0.124	-0.052
AF5	0.084	-1.09E-05	-0.026	-0.088		-0.078	0.016	-0.033	-0.016	0.026	0.009	0.009	0.053	0.022	0.015	-0.024	0.027	0.062	0.067	0.041	-0.104	0.008
AF6	-0.027	-0.019	-0.032	0.161	-0.078		-0.156	-0.004	-0.065	-0.018	-0.02	-0.02	-0.053	-0.007	-0.016	-0.01	-0.026	0.004	-0.11	-0.072	0.014	-0.028
AF7	-0.036	0.057	0.06	-0.076	0.016	-0.156		0.002	0.025	-0.01	-0.013	-0.013	0.016	-0.042	-0.014	0.023	0.049	-0.015	0.093	0.015	-0.023	0.015
VC1	0.045	-9.19E-05	0.035	-0.073	-0.033	-0.004	0.002		0.048	0.016	0.022	0.022	0.02	-0.13	0.014	-0.007	-0.012	-0.027	0.024	-0.033	0.084	0.02
VC2	0.036	-0.029	0.003	-0.131	-0.016	-0.065	0.025	0.048		0.023	0.039	0.039	0.007	0.017	0.032	0.013	-0.043	-0.019	0	0.054	0.11	0.026
VC3	0.014	-0.028	0.002	-0.068	0.026	-0.018	-0.01	0.016	0.023		0.027	0.027	0.014	-0.001	0.011	-0.009	-0.014	-0.031	0.002	0.024	0.01	-0.003
VC4	0.019	-0.039	-0.001	-0.05	0.009	-0.02	-0.013	0.022	0.039	0.027		0.036	0.035	0.013	0.025	-0.026	-0.04	-0.035	-0.005	0.042	0.02	0.007
VC5	0.019	-0.039	-0.001	-0.05	0.009	-0.02	-0.013	0.022	0.039	0.027	0.036		0.035	0.013	0.025	-0.026	-0.04	-0.035	-0.005	0.042	0.02	0.007
VC6	0.022	-0.025	0.006	-0.036	0.053	-0.053	0.016	0.02	0.007	0.014	0.035	0.035		-0.01	0.026	-0.068	-0.02	-0.039	0.057	0.049	-0.087	0.008
VC7	0.019	-0.044	-0.111	-0.04	0.022	-0.007	-0.042	-0.13	0.017	-0.001	0.013	0.013	-0.01		0.024	0.022	-0.033	0.047	-0.05	0.079	0.03	-0.003
AC1	0.048	-0.018	-0.013	-0.056	0.015	-0.016	-0.014	0.014	0.032	0.011	0.025	0.025	0.026	0.024		-0.022	-0.038	0.028	-0.003	0.04	0.024	0.015
AC2	-0.005	0.012	-0.017	-0.048	-0.024	-0.01	0.023	-0.007	0.013	-0.009	-0.026	-0.026	-0.068	0.022	-0.022		0.045	0.021	-0.004	-0.034	0.084	0
AC3	-0.017	0.041	0.003	-0.012	0.027	-0.026	0.049	-0.012	-0.043	-0.014	-0.04	-0.04	-0.02	-0.033	-0.038	0.045		0.01	0.059	-0.053	-0.049	-0.01
AC4	0.153	0.083	-0.055	-0.099	0.062	0.004	-0.015	-0.027	-0.019	-0.031	-0.035	-0.035	-0.039	0.047	0.028	0.021	0.01		0.011	0.004	0.022	0.034
AC5	0.025	0.041	0.021	-0.112	0.067	-0.11	0.093	0.024	0	0.002	-0.005	-0.005	0.057	-0.05	-0.003	-0.004	0.059	0.011		0.01	-0.077	0.014
AC6	0.036	-0.018	-0.027	-0.094	0.041	-0.072	0.015	-0.033	0.054	0.024	0.042	0.042	0.049	0.079	0.04	-0.034	-0.053	0.004	0.01		-0.012	0.018
AC7	0.038	-0.049	-0.007	-0.124	-0.104	0.014	-0.023	0.084	0.11	0.01	0.02	0.02	-0.087	0.03	0.024	0.084	-0.049	0.022	-0.077	-0.012		0.023
AC8	0.037	0.008	0	-0.052	0.008	-0.028	0.015	0.02	0.026	-0.003	0.007	0.007	0.008	-0.003	0.015	0	-0.01	0.034	0.014	0.018	0.023	

Extraction Method: Principal Component Analysis.

a. Reproduced communalities

b. Residuals are computed between observed and reproduced correlations. There are 47 (10.0%) non redundant residuals with absolute values greater than 0.05.

Fashion Behaviour: Detangling Promotional Factors

Isita Lahiri

Associate Professor, Department of Business Administration, Kalyani University, Kalyani

Humaira Siddika

Research Scholar, Department of Business Administration, Kalyani University, Kalyani

Abstract

Fashion trends keep changing and this is an important and challenging aspect of the industry and apparel sector is likely to grow with growing Indian and Bangladesh economy. At present consumers' fashion behaviour is fluctuating due to border less issues very specially in relation to promotion. This paper aimed to determine the impact of apparel promotion on fashion behaviour. To do so, a personal interview has been conducted through a structured questionnaire by using 5-point Likert scale on 150 consumers within the age of 18 to 50 years. Sample was taken from Bangladesh and West Bengal considering both stratified and convenience sampling techniques. Through the factor analysis this study find out important factors (Store promotion, events, online advertisements, social medias, celebrities' endorsement, seasonal offers, direct mail and relations) behind the influence of fashion behaviour and also propose few managerial implications for the marketers and researchers.

Key Words: Promotion, Fashion behaviour, Fashion marketing, Apparels.

Introduction:

Fashion behavior is a complex and multidimensional concept. Consumers' are now in a more involved manner into apparel shopping than ever before. But the perception and opinion of consumers vary while buying apparels in different environment. Marketers use sales tracking data, attention to media coverage, focus groups and other means of ascertaining consumer preferences to provide feedback to designers and manufacturers about the type and quantity of goods to be produced. Marketers are thus responsible for identifying and defining a fashion producer's target customers and for responding to the preferences of those customers.

Marketers for companies that do sell their own products at retail are primarily concerned with offering products to their own customer base through wide level of promotion. That's why consumers' fashion behavior also influenced in relation to the variation of promotion in fashion industry.

Fashion Marketers are the visionaries who can identify the target consumer and know how to market the clothes to these groups. Bangladesh and West Bengal is very rising and potential market for the successful implications of fashion marketing. Wide level of promotion can influence on consumers' fashion behavior. That's why it is very crucial to study in such area so that marketers can execute fashion marketing strategies.

Literature Review:

Fashion Marketing integrates designing, promotion as well as administration and vast

knowledge of the fashion world. Fashion marketers analyses recent trends, the fashion industry, people, and study the reason behind the popularity of the trends (Pani A., Sharma M., 2012). According to Khan O. (2003) handling risks in fashion retail could yield functional efficiency and ensures fashion retail firms to achieve competitive edge.

Powerful market stimulants such as fashion shows on television, fashion advertisements, in-store displays, and fashion events in the urban shopping malls have influenced the transnational cosmopolitanism among consumers (Rajagopal, 2010). Different various channels are being negotiated and integrate service fashion and design branding strategies (Jasson and Power, 2010). The purchase intention for fashion and designer apparel is stimulated among consumers in the social contexts. The distinctiveness of fashion features (e.g., designer brand, celebrity endorsement, media reviews) that are consistently associated with emotional expressions plays the strongest role in the buying behavior among consumers (Clavo and Marrero, 2009). The marketing strategy for fashion apparel includes creative designs, exclusivity, product accessories, celebrity anchored advertising, promotion, and membership programs as essential complements to the sales.

The involvement of consumers in fashion products depends not only on their own perceptions but also on peers' response to their personality and change proneness (Pinheiro, 2008). Promotion led fashion retailing culture stimulates fashion oriented attitudes, debt and spending behaviour on clothing among consumers (Martin-Herran et al, 2010). Fashion promotions in Mexico are derived considering socio-psychographic background of consumers such as age, gender, country of origin, social class, and income status, which are critical to the success of interethnic communications with the Hispanic population

(Valdez, 2000). The fashion apparel has built the image in the market by characterizing as sexually ardent designs for passionate male and female shoppers (Narumi, 2000).

Consumers lean towards buying such apparel that are largely sold as designer apparel (Wang et al, 2005). The television and celebrities also play a significant role in influencing adolescents' clothing choices irrespective of gender categories. Among the most common two forms of media that children largely use are magazines and television while, teens are primarily influenced by visual merchandising, hand on experience, and spotting the fashion apparel users (Seock and Bailey, 2009). Response to the store brands appears to be more complex in nature than a simple affective summary of the relative frequencies of positive and negative emotion during consumption experiences (Torres et al, 2001). Besides retail stores, fashion and design-based industrial actors also contribute to creating images and myths that support consumers' orientation towards buying fashion apparel (Jansson and Power, 2010).

According to Jain R., and et al., 2011, clothing is considered to be one's second skin and interest in clothing is highest during late teens and early twenties. The expression of self through clothing behaviour is one's culture, background and general values play a dominant role. Fashion magazines have become emblematic of feminism, a form of 'third-wave' feminist engagement that revalue activities and interests traditionally associated with femininity, such as knitting, fashion clothing, and make-up (Groeneveld, 2009). The popular appeal of the celebrity drives the sales of fashion apparel significantly and leads the brand (Treme, 2010). The celebrity endorsement can significantly influence consumer purchase attitudes via both direct and indirect effects through product-attribute construct (Sheu, 2010).

Research Gap:

No study is available that determined the influence of apparel promotion on consumers' fashion behaviour considering the age of 18 to 50 years of both male and female from different income level and educational background in South Asian countries; very especially in the context of India and Bangladesh.

Objectives:

The objectives of the study are as follows:

a) To identify the influence of apparel promotion on fashion behavior.

b) To determine consumers' preferences for apparels in Bangladesh and West Bengal.

Methodology:

This study was followed by descriptive method of research (Malhotra N., K., 2006) by using primary data. A personal interview was conducted on 192 people those were taken from Bangladesh and West Bengal. Out of the total sample 150 responded properly where 75 were considered from each country. The areas of the survey we have chosen in Bangladesh were Dhaka, Comilla and Chittgong districts where, Kolkata and Kalyani districts of West Bengal covering a time period of three months October to December, 2013 where educational institutions, offices and households were considered as sampling frame. We considered these sampling frames very randomly; from these areas we have collected data through the method of stratified considering age, income, education, gender and convenience sampling considering as per the convenience of the study.

A structured questionnaire was prepared by using 5-point Likert scale. Before drawing the final questionnaire, a pilot survey for the same was made to understand reliability. The study was aimed to determine the factors of apparel

promotion that influenced on consumers' fashion behaviour. We prepared the questionnaire by dividing into two parts; where part-I cover the demographic section and in part-II a set of 21 statements reflecting various attributes of the problem. The sample was taken within the age groups of 18 to 50 years of both male and female consumers and they were requested to put their opinions the statements on the basis of Strongly Agree=5, Agree=4, Neutral=3, Disagree=2 and strongly disagree=1.

From the findings of the pilot study it was identified that there is no significant difference of consumers' fashion behaviour in between citifies of Bangladesh and also the cities of West Bengal. That's why; we have collected data together from the selected sampling areas and proceed for the analysis. To do so, factor analysis (a data reduction technique) was restored for identifying the factors the fashion behaviour was influenced by apparel promotion. Assuming all the statements has some degree of association with each other we applied SPSS 16 to analyse the data collected for the study.The sample was representative of the entire population, so results from this research can be generalized.

Analysis and Findings:

Out of 150 respondents, 27 respondents were within the age of 18-30 years, 93 respondents belong to the range of 31-40 years and 30 were within the category of 41-50 years. Accordingly, the age distribution of the respondents with percentage is given in below table 1 and Exhibit 1.

Table 1: Age distribution of respondents				
	Years	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-30	27	18	18	18
	31-40	93	62	62	80
	41-50	30	20	20	100
	Total	150	100	100	

Exhibit 1: Percentage of respondents' Age

P e r c e n t a g e

- 18-30(18%)
- 31-40(62%)
- 41-50(20%)
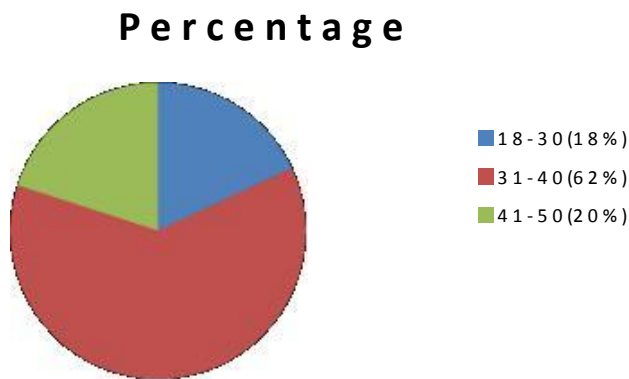
At the same time, out of 150 respondents 27 respondents completed higher secondary education, 25 completed graduation and also 98 respondents completed post-graduation. The total education distribution of the respondents with percentage is given in below table 2 and also in Exhibit 2.

	Education	Frequency	Percent	Valid Percent	Cumulative Percent
	Table 2: Education distribution of respondents				
Valid	Higher secondary	27	18.4	18.4	18
	graduate	25	16.1	16.1	34.7
	post graduate	98	65.5	65.5	100
	Total	150	100	100	

Exhibit 2: Percentage of respondents' education

P e r c e n t a g e
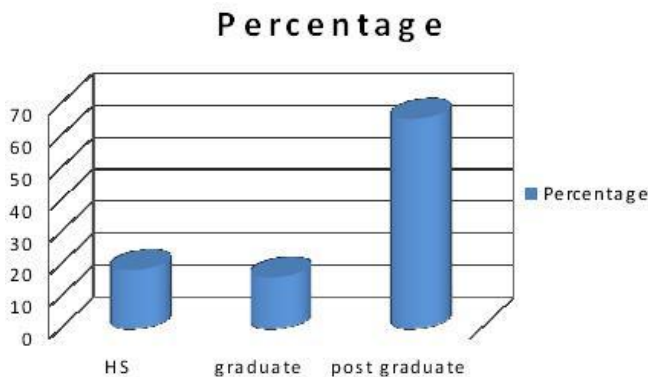
On the other hand, out of 150 respondents, 57 respondents were having per month income below 15000, 43 respondents were having per month

income was within the range of 15000-30000, 30 respondents were having per month income within the range of 31000-60000, only 5 respondents having per month income within the range of both 61000-85000 and 86000-100000 respectively. Again, 10 respondents' per month income were above 100000. The detail of income distribution of the respondents with percentage is given in below table 3 and also in Exhibit 3.

	Table 3: Income distribution of respondents				
	Income (Per month)	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	below 15000	57	36.8	38	38
	15000-30000	43	28.7	28.7	66.7
	31000-60000	30	20	20	86.7
	61000-85000	5	3.3	3.3	90
	86000-100000	5	3.3	3.3	93.3
	above 100000	10	6.7	6.7	100
	Total	150	96.8	100	

Exhibit 3: Percentage of respondents' income

P e r c e n t a g e
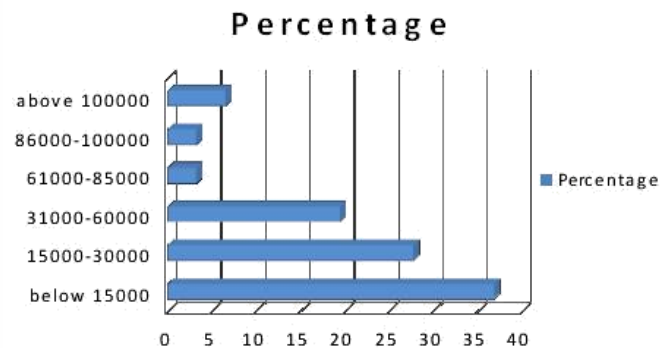
Adequacy of the data was tested on the basis of results the Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy and Bartlett's test of sphericity (homogeneity of variance) provided.

Table 4: KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.561
Bartlett's Test of Sphericity	Approx. Chi-Square	167.148
	Sig.	0.000

The KMO measure of sampling adequacy is 0.561, which is more than 0.5 indicates that present data acceptable and also suitable for factor analysis. Similarly, Bartlett's test of sphericity is significant ($p < 0.001$); that explains existence of sufficient correlation between the variables to proceed with the analysis (Table 4).

A Scree Plot is a graphic with visual display that plots the total variance associated with each factor. The figure 1 given in below is showing the scree plot:
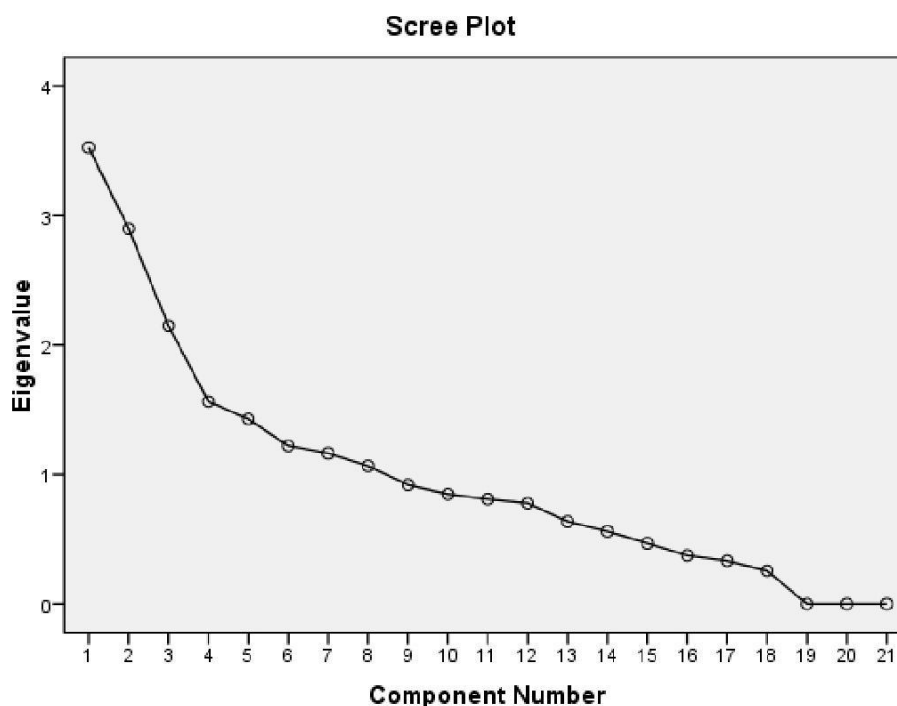
Figure 1: Scree Plot

Cartell's Scree test involves plotting each of the eigenvalues of the factors and inspecting the plot to find a point at which the shape of the curve changes direction and becomes horizontal (Figure 1). Here in table 5, all the extracted communalities are acceptable and all variables are fit for the factor solution as their extraction values are large.

Table 5: Communalities

	Initial	Extraction
Display	1	0.985
sales personnel	1	0.638
fashion variety	1	0.525
Fashion shows	1	0.985
Exhibition	1	0.791
fair	1	0.703
web sites	1	0.69
e-transaction	1	0.985
detail information	1	0.935
billboard	1	0.518
television	1	0.67
magazines	1	0.935
superstars	1	0.544
models	1	0.675
icons	1	0.684
discounts	1	0.674
occasions	1	0.682
free sample	1	0.727
press	1	0.419
Personal communication	1	0.67
Public communication	1	0.58

Extraction Method: Principal Component Analysis.

In table 8 the first eight components (factors) in the initial solution have an Eigenvalues over 1 and they account for about 72% of the observed variation in the consumers' fashion behaviour. According to Kaiser Criterion, only the first eight factors should be used because subsequent eigenvalues are less than 1.

Table 6: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.526	16.792	16.792	3.526	16.792	16.792	3.314	15.781	15.781
2	2.899	13.805	30.597	2.899	13.805	30.597	2.819	13.422	29.202
3	2.148	10.228	40.824	2.148	10.228	40.824	2.242	10.677	39.879
4	1.564	7.446	48.271	1.564	7.446	48.271	1.585	7.546	47.426
5	1.428	6.8	55.071	1.428	6.8	55.071	1.299	6.185	53.611
6	1.221	5.816	60.888	1.221	5.816	60.888	1.266	6.027	59.637
7	1.164	5.541	66.429	1.164	5.541	66.429	1.263	6.016	65.653
8	1.065	5.074	71.503	1.065	5.074	71.503	1.229	5.85	71.503
9	0.92	4.383	75.886						
10	0.848	4.036	79.922						
11	0.809	3.855	83.777						
12	0.778	3.704	87.481						
13	0.637	3.031	90.512						
14	0.56	2.669	93.181						
15	0.468	2.23	95.411						
16	0.375	1.784	97.195						
17	0.333	1.585	98.781						
18	0.256	1.219	100						
19	0.178	1.155	100						
20	0.172	1.016	100						
21	0.168	0.716	100						

Extraction Method: Principal Component Analysis.

Factor loadings were used to measure correlation between variables and the factors. A loading close to 1 indicates strong correlation between a variable and the factor, while a loading closer to zero indicates weak correlation. Unrooted solutions of factor loading are not suitable for interpretation purpose since the variables generally tend to load on multiple factors (Table 7).

Table 7: Component Matrixa

	Component							
	1	2	3	4	5	6	7	8
Display	0.925	0.161	-0.301					
e-transaction	0.925	0.161	-0.301					
Fashion shows	0.925	0.161	-0.301					
sales personnel	0.583		0.422	0.169	-0.245	0.163		
detail information	-0.253	0.891		-0.268				
magazines	-0.253	0.891		-0.268				
billboard		0.665	0.169	0.124	-0.145			
superstars	-0.24	0.596	-0.157			0.277		0.136
exhibition	0.206		0.832	-0.216				
fair	0.394		0.73					
discounts	0.282	0.145	0.335	-0.559		0.13	0.144	-0.321
press			0.158	0.551		0.116	0.266	-0.509
web sites	0.15	0.402		0.527	-0.343	0.138	-0.256	-0.132
fashion variety		0.236	0.266	0.522			0.226	0.246
Freesample		-0.157	0.123		0.623	0.184		0.497
icons		0.195		0.242	0.621	0.295	0.282	-0.159
personal		0.134				0.723	0.335	
public		-0.167	-0.25	-0.143	-0.134	0.568	0.354	
occasions				-0.167	-0.429	0.126	0.664	
television	0.263	0.219	-0.28	-0.126		-0.192	0.325	0.559
models	-0.147	0.181	-0.186	0.156	0.448	-0.188	0.258	

Extraction Method: Principal Component Analysis.

a. 8 components extracted.

The factors are rotated with the Quartimax with Kaiser Normalization rotation method (Table 8). The Principal Component Analysis (PCA) method was used for factor extraction taking those factors only whose values are greater than 0.5 for the purpose of interpretation.

Table 8: Rotated Component Matrixa

	Component							
	1	2	3	4	5	6	7	8
Display	0.99							
e-transaction	0.99							
Fashion shows	0.99							
detail information		0.953		-0.108				
magazines		0.953		-0.108				
superstars		0.657	-0.218	0.146				-0.191
billboard	0.114	0.586	0.165	0.275			-0.177	0.152
exhibition			0.872				0.113	
fair	0.104		0.794	0.143	-0.129	-0.103		
discounts	0.159	0.147	0.605	-0.399	0.223	0.21		
sales personnel	0.362	-0.159	0.536	0.319	-0.172		-0.177	-0.157
fashion variety		0.113	0.126	0.672			0.148	0.136
press				0.611	0.151			0.208
web sites	0.185	0.281		0.514	-0.131	-0.218	-0.438	0.238
models			-0.17		0.763		-0.112	
icons		0.129		0.284	0.676		0.325	-0.149
Personal						0.779	-0.208	0.152
public			-0.162			0.636	0.11	-0.363
Free sample		-0.1	0.109			-0.153	0.816	-0.11
occasions					0.104		0.799	
television	0.346	0.207	-0.157		-0.306	0.308	0.339	0.421

Extraction Method: Principal Component Analysis.

Rotation Method: Quartimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

From rotated component matrix, we can find the loadingfor display is0.990, fore-transaction 0.990 and for fashion shows 0.990 respectively on factor 1 named "online advertisement". Again, detail information with 0.953, magazine with 0.953 and billboard with 0.586 have loading respectively on factor 2 named "social media". At the same time, exhibition and fair have loading 0.872 and 0.794 respectively on factor 3 named "events". Again, sales personnel and fashion variety have loading

respectively 0.039 and 0.672 on factor 4 named "store promotion". Uses of icons and models have loading respectively 0.763 and 0.676 on factor 5 named "celebrities endorsement". At the same way personal and public communications have loading respectively 0.779 and 0.636 on factor 6 named "Direct mail". Again, free sample and occasions have loading respectively 0.816 and 0.799 on factor 7 named

"seasonal offer" and press and web sites have loading respectively 0.208 and 0.238 on factor 8 named "Relations building''.

Managerial Implications:

After considering the above identified factors of apparel promotion the study propose few suggestions give in below as managerial implications:

- Store promotion covers the discounts or credit facilities, free or bundle offer with a certain product, offer of additional service and so on. But here competition exists in market as

  consumers' are having superior power. So, marketers can consider reshuffling their promotional activities.

- Another tool events cover fashion shows, concerts, fairs, exhibitions etc. Here, the challenge is that the consumers always expect new offerings with unique features. So, marketers can

  execute creative marketing practices with innovation so that there is a variation in their events as well as their offerings.

- Many consumers now are involved in different social networking sites and also go through online shopping sites. That's why regular online advertisements of

  apparels are very essential way to connect with consumers who have fascination to go through the internet.

- Social Medias may include the tools like television, radio, magazine, brochure, bill board, fashion news etc. From the very earlier stage to till now it is the most popular tool of apparel promotion.

Marketers require providing actual current information within a very short time through the advertisements.

- Celebrities' endorsement is very interesting and just like a secret weapon to attract the massconsumers. Throughout different advertisement, shows, television and theatre

programs even also casual celebrities can influence the fashion behaviour of curious consumers.

- Few consumers' sometimes wait for seasonal offer and consider the promotion of certain period they go for purchasing. So, there is no chance to ignore this promotional activity also.

- Direct mail is meant one to one communication with public. It also sometimes becomes effective tool to attract new consumers and also to reinforce the existing consumers.

- Relations building focus on communication through press conference, disclose of news and sharing of thoughts. It is a very common way to connect with mass people. So, fashion marketers can consider different public

relations actions so that consumers can get the ideas about fashion trends and the related issues that are going on.

Many multinational players either have already plunged into the market or plan to do so in apparel sector. They will bring many promotional practices which they have been following in developed markets which will increase the use of sales promotion activities even further. Therefore, brands will have to withstand turbulent conditions and learn to survive. If the role of such activities is understood well it may help any player a long way to survive and grow.

Scope of Future research:

There are few limitations of this study that it was carried out with small sample size and ignore to draw the separate findings in the context of gender for male and female. Again, this study focused only with special reference to the Bangladesh and West Bengal. Again, there is absent of comparative findings of these selected areas.

For this, in further in depth research can be conducted on mentioned limitations with more variables. Again, there is scope of future research to identify the importance of factors of apparel promotion on consumers' fashion behaviour. This is how further research can be conducted in broader areas to travel around the potentials of fashion marketing for apparel items.

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Appendix:

The questionnaire that was used for conducting survey is given in below:

Part-I

Sl	Name			
1	Gender	( ) Male	( ) Female	
2	Age	( ) 18-30 years	( ) 31-40 years	( ) 41-50 years
3	Marital status	( ) Unmarried	( ) Married ( ) Divorce	
4	Education	( ) Primary	( ) SSC/ Madhuyamik ( ) HSC / H.S. ( ) Graduate	( ) Postgraduate
5	Region	( ) Urban	( ) Suburban	( ) Rural
6	Income level (BD Tk/ INDRs. Per month)	( ) Below 15000 ( ) 31000 - 60000 ( ) 86000-100000		( ) 15000 - 30000 ( ) 61000 – 85000 ( ) Above 100000

This part of the questionnaire contains a number of statements. Please indicate your preference according to the factors of apparels promotion influencing on fashion behaviour by putting a mark against the statements that have options ranging from a 'Strongly Agree' to a 'Strongly Disagree' type.

Part-II

SL	Questions	5- point scale Likert Scale				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Apparels display at store attract me very much					
2	I always influenced by the word of sales personnel					
3	Variety of fashion in apparels is available in outlets					
4	I become excited to about fashion through fashion shows					
5	Apparels exhibition is also attract me					
6	I always waiting for apparels collection in fair					
7	I can go through web sites for fashion related information as per my convenience					
8	I feel comfort to make transaction through online					
9	I can get details about product via internet					
10	I am habituated to have information through billboards and catalogues					
11	I am used to have fashion updates through TV					
12	Magazines are more effective for getting fashion news					
13	I think superstars'fashion is the best source to know about latest trends					
14	I always notice the dress code of models					
15	I take fashion decision as per the fashion of icons					
16	I always waiting for the discounts					
17	I always waiting for the packages that available on different occasions					
18	I become to have any offer of free sample					
19	Press conference is very reliable source for getting fashion information					
20	I always give value on personal communication while purchasing					
21	I happy when getting fashion updates in public					

Nurses' Intention To Leave: A Qualitative Study In Private Hospitals

Prasanjit Dasgupta,

Chief-Human Resources, Mission of Mercy Hospital & Research Centre, Kolkata

Abstract

Aim : The study tested whether drivers of turnover are opposite or distinct from the drivers of retention of nurses.

Background : Most of the turnover researches have emphasized on turnover factors with assumption that control of these factors lead to retention. A few researches have pointed that drivers of turnover and retention are distinct.

Design/Methodology: We conducted 6 focus groups with 44 participants in 3 private hospitals at Kolkata from June to August, 2013. Participants have been divided into Stayers- working in the same hospital for 3 years and more and Leavers- made change in job in last 3 years. Key factors have been identified on the basis of experience narrated by Stayers and Leavers.

Findings : Key turnover factors identified were heavy workload, erratic scheduling, pay disparity, ambiguous environment, un-accommodative supervisor, less promotional avenue and work-family conflict. Those with retention were team work, empowerment, and career growth, sense of coherence, mother institution and supportive management. It has been found caring some drivers of turnover will improve retention but some drivers of turnover and retention are distinct from each other. Contrary to western findings team work has evolved as powerful retention factor than empowerment, mother institution and sense of coherence has been found as important retention factor.

Conclusion : For better retention of nurses healthcare managers need to address separately the distinct drivers of turnover and retention as well as drivers of turnover which are opposite to the drivers of retention.

Key words: Nurses, Turnover, Retention, Stayers, Leavers

Introduction

Attrition rate of nurses is highest among health personnel in India (Business Line, 2004; The Economic Times, 2008; Business World, 2008).Express Healthcare (May, 2010) has published that the attrition rate of nurses is in the range of 28-35%, whereas average overall attrition rate of healthcare sector in India is 10.1%. Researchers while comparing attrition of nurses among private and government hospitals in India has found that attrition rate of private hospitals is much higher than that of the government hospitals (Sharma and Kamra, 2009).

Alexander, Bloom and Nucholas (1991) in their research found that turnover affects efficiency of

hospitals and has opined that lower rate of turnover was associated with higher efficiency in hospitals; apart from operational costs. Cheryl Jones (2004) has found their replacement cost as high as 1.2-1.4 times the annual salary. Jones & Gates (2007) have presented a synopsis of cost towards nurse turnover, it includes advertising and recruitment, vacancy costs (e.g., paying for agency nurses, overtime, closed beds, hospital diversions etc),hiring, orientation and training, decreased productivity, termination, potential patient errors, compromised quality of care, poor work environment and culture, dissatisfaction, distrust, loss of organizational knowledge, additional turnover

Considering high turnover rate of nurses in private hospitals, enquiry has been made to find out the cause of high turnover and to explore the means of nurses' retention in the organization.

Background:

Jones (1990a, b) defined nursing turnover as process whereby nursing staff leave or transfer within hospital environment. Past theoretical models have synthesized turnover research and specified relationships among determinants of turnover (Price and Mueller, 1981a; Mobley, 1982; Hinshaw and Atwood, 1983; Abelson, 1986). Irvine and Evans (1995) presented a model based on Mueller and Price's (1990) theory and explained that different disciplinary perspectives contribute to nurse turnover There is a vast body of the literature linking job satisfaction in nursing and turnover. Job dissatisfaction has been frequently identified as the reason why nurses leave their jobs (Lum et al., 1998; Tzeng, 2002). Using data from a national survey of National Health Service (NHS) nursing staff, Shields and Ward (2001) found job satisfaction to be more important than the attraction of outside opportunities.

Davidson et al.(1997); Tai et al., (1998) Hemingway and Smith, (1999) and Strachota et al.(2003) explained that consistently heavy workload increases job tension and decreases job satisfactions, which in turn, increase the likelihood of turnover.

Leveck and Jones (1996) found that management style, group cohesion, job stress, organizational and professional job satisfaction influenced staff nurse retention. Bratt et al. (2000) found job stress and nursing leadership to be most influential. Larrabee et al. (2003) concluded that the major predictor of intent to leave was job dissatisfaction and the major predictor of job satisfaction was psychological empowerment. Kramer and Schmalenberg (2003) quantified nurse autonomy and determined a strong relationship between degree of autonomy and rankings of job satisfaction. Dissatisfaction with promotion and training opportunities has been shown to have a stronger impact on nurse turnover than workload or pay (Shields and Ward, 2001). Shader et al.(2001) and Strachota et al.(2003) have found that long shifts, overtime, weekends, nights, holidays and weekend overtime to be predictors of anticipated turnover. An inverse relationship between age and turnover has demonstrated by many researchers (Lowery and Jacobsen, 1984; Gray and Phillips, 1994; Kiyak et al., 1997). McNeese-Smith and Van Servellen (2000) suggest that mature nurses have greater job satisfaction, productivity and organizational commitment. Several nursing researchers have viewed that pay does not have as strong an impact as work environment ((Irvine and Evans, 1995). Other research suggests that pay can have both a direct and indirect effect on turnover intent (Strachota et al., 2003).

In summary, these researches have greatly expanded our perspectives on turnover in a variety of ways.

Castle (2006) has pointed out that inspite of such a huge number of researches there had been hardly any program that resulted in improvement in actual retention.

Brannon, Zinn, MOR, and Davis (2002) in their study on 288 facilities in eight states found that low turnover and high turnover were not associated with the same factors. They stated "future studies of facility turnover should avoid modeling turnover as linear function of a single set of predictors in order to provide clearer recommendations for practice." Mittal, Rosen and Leana (2009) have viewed that most of the literature on turnover research has been made with the assumption that reduction in turnover of employees promote retention of the employees which shows as if turnover and retention is two poles of a continuous process. They questioned the wisdom of continuing to design worker retention programs on the basis of research aimed at understanding worker turnover and has found that the motivations of job stayers and job leavers may be quite distinct.

In hospitals inspite of high perceived job opportunities and several other reasons to leave some nurses stay for years though most of their contemporary nurses have left. Thus, conceptually questions may be raised whether turnover and retention of nurses are two distinct phenomena. For this analysis, we found no empirical studies in India that examined the concept whether turnover factors and retention factors of nurses are opposite or distinct from each other.

Researchers have found that effect of many factors vary due to culture and environment. Carsten and Spector (1987) have found that there are important differences between countries, industries, class of employees etc. in regard to turnover of employees. In a qualitative study, Maertz, Stevens and Campions (2003) with

masquiladoras workers in Mexico discovered that US based turnover models may not be readily applied to different cultures and their sample revealed new findings and turnover dynamics. Curtis (2007) found nurses in Ireland ranked autonomy as the main base of satisfaction ahead of pay and interactions whereas Li and Lambert (2008) have noted that Chinese nurses had no relation with autonomy and expect all directions for patient care from medical staffs.

Aim:

Aim of the research was to find whether predictors leading to turnover are opposite to predictors leading to retention of nurses? Or are the predictors of turnover qualitatively distinct from predictors of retention of nurses? What are the different factors that lead to turnover and retention of nurses?

Design and Methods:

The primary purpose to use qualitative methods in this study was to collect information and broaden our understanding of factors that contribute to turnover and retention of nurses. A secondary purpose was to use this information in research to develop a set of empirically-grounded recommendations to the management of private hospitals for improving retention of the nurses. An additional purpose of the research was to explore the unknown and add it to the literature.

In the current research focus group methodology has been used. Nyamathi & Shuler (1990) have stated that the advantage of focus groups over other research methodologies is the possibility of gaining authentic, quality data by using the candor and spontaneity of participants in an atmosphere of dynamic group interaction.

Ethnography methodology has been adapted as this research has been aimed at studying factors that makes nurses to leave or stay in a hospital and it is presumed that these factors develop from nurses' value system, beliefs and practices.

Sampling:

Focus group discussion has been conducted in three multidisciplinary hospitals in Kolkata each of them having 250, 350 and 350 nurses respectively. Before starting the process to understand culture of the organization informal talks have been held with a number of nurses and other employees including junior doctors, technicians and administrative personnel. After discussing with Nursing Administrators of the hospitals nurses working in the same hospital since beginning of their career and has an experience of at least three years has been grouped as Stayers; those who have made changes in their job in last three years as Leavers. In order to create an encompassing picture nurses have been selected from units that are typically viewed as stressful in the nursing literature (Intensive Care Unit, Casualty department) as well as units which are usually perceived as not equal stressful (maternity, operating theatre, general ward, executive/high paying ward). In one hospital six (one from each aforesaid unit) nurses have been taken in each Stayer and Leaver group. In other two hospitals that possess specialized oncology and pediatric unit one nurse has been taken from each of these two units and formed group of eight members in each Stayer and Leaver group. Care has been taken to see that all have same nature of service contract so uniform level of job security/insecurity remains. A total of 44 nurses participated in the study. Age and other profile of the participants have been given in Table-1.

N=44.   Age of the Participants: 23-35 Years.

Gender: Regional Demography:

Female	Male			
39	5			
North & Central India	South India	Eastern India	Western India	North-East India
4	18	13	2	7

Marital Status:

Married	Bachelor
27	17

Children at Home for Married Respondents:

Children at Home	No Children
17	10

Experience of Stayers in Same Hospital:

Stayers	Leavers	More than 10 years	Between 5 and 10 year	Less than 5 years
22	22	5	9	8

Group dynamics of focused group participants observed and mode of conduct of discussion has been given in Annexure-I.

Annexure-I

We conducted the focus group discussion wherein I being the researcher acted as moderator, I have worked as head of human resources of several hospitals and have good understanding of the nurses' work. First of all a pilot study has been conducted; basic objective of conducting a pilot study was to see whether the purpose of holding focus group discussion is fruitful in getting the desired response. The pilot study gave a sense of confidence, since for the first time I was performing as Moderator. Pilot group comprised of nurses who were known to me and were the Stayers, previously and once again at the beginning of the discussion I explained purpose of discussion to the participants. Targeted topics were (a) conditions that prompt nurses to stay in their job; (b) conditions that prompt nurses to leave their job; (c) nurses feeling about good and bad part of their job. Initially a sense of not opening up with views have been noticed, participants were reluctant to share their experience inspite of assuring them about confidentiality that shall be maintained in respect of individual identity or that of the hospital. I

thereafter offered them that I will stop recording at any point of discussion if the participants desire and also offered them the option that any one may opt to depart from the discussion whenever he/ she intends. I told them in the discussion whatever they feel like can tell in regard to the topics and no one shall have an ill feeling. The discussion was stopped for some time and tea was served. After tea participants have been found to be more relaxed and participated in the discussion willingly. There had been instances of side talk which until and unless disturbed others have been ignored. Two participants became emotional while describing their cause of leaving the last employment and a participant has been found countering while a participant was narrating her experience. I maintained silence mostly and added a few points to see that the emotionally charged two participants do not deviate from the main point. Participant countering her fellow participant have been mildly asked to concentrate in her views and speak when her fellow participant completes. No one seemed to dominate the discussion, notes have been taken apart from recording the discussion and at the end a short summary of the discussion was briefed to the participants. After seeing reaction of the participants it has been felt that group dynamics has been rightfully monitored and is reflected in the analysis of information gathered.

In all the subsequent focused group discussions before starting the discussion I assured the participants confidentiality about their identity and that of institution. They were requested to say openly their views irrespective of the fact that one may differ from other, explain their opinion bringing illustration about their own experiences, counter any view that may find contradictory but only after listening complete view. Once again before holding the discussion I made clear the purpose to all the participants, asked whether they have any objection of getting the conversation

recorded and requested not to call each other by name to ensure anonymity. I also informed the participants that if any of them find the discussion incompatible may leave the discussion at any moment and their departure in between shall not be noted. At the end of discussion, I briefed a short summary of the discussion and requested to add comments and to clear misunderstandings, if any.

Since nurse of same hospital was grouped together all the participants were known to each other, however they were not known to me. There had been some side talks at one discussion and I requested them not to indulge in it. There had been several cases of snubbing by a participant to another fellow participant as some displayed impatience to state their views. I being the moderator made impatient participant alert to see sense that if view of the previous speaker completes than only other can put his/her view. There had been three cases where participants tried to bulldoze view of others. One Stayer said it is my mother institution and I don't want to hear anything negative about it from outsiders, this caused resentment to three-four participants who asked what she means outsiders as they are also working in the same hospital for last couple of years. I had to intervene and make clear to both sides that hurting sentiment of others is not allowed in discussion. In one discussion a participant who has changed two jobs in last one year was narrating her experience saying that she knows management attitude very well as she has worked in a number of organizations, they say something while recruiting and do something thereafter. Another participant who has worked in the same hospital previously and again came back reacted asking her not to compare that management with the existing one. This caused some reaction among three participants who also described this management as unapproachable. I had to maintain cool in all these cases and sensing

unnecessary confusion and going out of track asked the next participant to speak on the topic. In the fifth focused discussion which comprised the leaver group a sudden altercation erupted when a participant commented "Money is not everything", two male participants became reactive in it and the situation had to be calmed by taking these two participants outside for counseling and the discussion resumed after fifteen minutes break. In some instances I had to probe to find out reaction of participant, as one while describing his helpless situation at night shift was saying that attending doctor could not be contacted, she was in dilemma, and thereafter she suddenly stopped perhaps not to divulge her next course of action. On being probed, later after the group dispersed, she said that she found a medicine that was given to another patient in similar crisis and used in this event also, as she felt she was duty bound to look after well being of the patients and doctor could not be contacted.

All focus group discussions were tape recorded and transcribed in parts as written language and all along note was taken by the researcher. Both the transcribed discussion and observation of the researcher was used for analysis.

Methodology of data analysis has been given in Annexure-II

Annexure-II

In the study focus group transcripts and understanding of the turnover literature have been used to develop the main themes. Hirschman (1986) have been used to ensure that the themes fulfill three objectives: (a) credibility (did the authors interpret respondents view as the respondents intended?), (b) confirm-ability (what steps were taken to ensure that the themes are not biased?), and (c) dependability (to what extent is the phenomenon stable across multiple human beings?). Help of psychologists were taken who along with the researcher independently analyzed

the transcripts and developed themes which can describe the data. Than the themes were analyzed comparing with researchers understanding of different theories and turnover model of the nurses as well as with the note of researcher to understand the group dynamics. Discussion with the data has also been made with several other HR colleagues and nursing administrators working in other hospitals keeping confidential the identity of nurses and hospital wherein the focus group has been conducted.

While analyzing transcripts a process of evolving consensus and debate has been found. What had seemed from the data retrieval that staff changed their ideas when they were prompted to think about their work and gradually group and individual responses changed over the period of the focus group discussion For example in most of the discussions Stayers started with some casual talks about themselves or hospital and completed with description of satisfying moment or in some cases convergence of views. Leavers in their discussion mostly stressed on the points why they left their previous employment and compared their past experiences with present context. A few of them also narrated some of their bad experience of present employment; however, some of them also narrated their good experience with the current job.

Findings:

The themes have been organized around the two main questions: (a) why do nurses leave their jobs? And (b) why do nurses stay with their jobs? Frequently occurring perspectives of the total sample of focus group interview participants are reflected in the following themes mentioned as turnover factors and retention factors.

Turnover Factors:

From discussion following has transpired as themes that lead to nurses' turnover:

Heavy workload/ allocation of patients High allocation of patients has been stated as a tiring exercise that the nurse's face.

In the words of a leaver

…………*work load in my previous hospital was very high, sometimes ratio of nurse to patient used to exceed 1:5, we found it extremely difficult to cater more number of patients.*

This view has been reiterated by five leavers stating a reason of leaving previous organization. Even four Stayers have expressed their displeasure about heavy workload and have stated that though they try to tide it over through team work but there is human limitation.

Erratic Scheduling Stress at night shift and erratic scheduling of shift duty is another reason for dissatisfaction in the job cited by six of the leavers.

…………. *In morning we reach home and feel like not to do anything but sleep. We feel really bad if we are asked to continue morning shift after twelve hours of night due to shortage of staff.*

Disparity in Pay: Pay disparity is a factor that six leavers have stated as one of their reason of leaving previous job.

"Salary that we look at is at par. For most of the cases we find that juniors are taken at high salary…………

Ambiguous situations Six Nurses expressed their helpless position particularly when a patient deteriorates and they wait for doctor's order.

………………….. *It is very difficult in ambiguous situation at night particularly in situation when the patient is deteriorating and we find no help from others………….. After seeing a few incidents I decided to quit as I felt that working in this hazy situation at the time of crisis is highly risky.*

Even two Stayers have spoken about trouble faced by them in ambiguous situation but did not say anything that these situations developed any intention to leave by them.

Un-accommodative Supervisors Eight nurses have complained about un-accommodative behavior of supervisors as one of their turnover reason.

In the words of a leaver:

Under whom I am working is very important and particularly if she find only fault. It is the boss which matters the most if the boss does not understand staffs 'problem it is very difficult to work, it is the only reason why I left my last job.

Lack of Scope for Promotion Four Leavers stated that a reason of their leaving previous employment is lack of scope for promotion.

A leaver said

Yes the hospital where I worked had very good facilities and never thought of leaving it. But there had been no promotional opportunities, four times I have given exams but the results of exam never came out.

Work family Conflict

Four leavers narrated work-family conflict as a cause of their leaving previous organization.

A participant said

On reaching home I used to be dead tired and late. My in-laws used to be upset, all these made me to leave my last job. Here, it is better at least I don't get late unnecessarily.

Retention Factors:

Organizational Culture Seventeen stayers have emphasized that it is the team work and cooperation they get from other nurses and doctors have made them stay in the same hospital for long time. In the word of a stayer

…………….. *Existing team work is most important here, I have stayed here as I find a lot of cooperation from top to bottom.*

Learning & Training Nurses like other professionals looks for opportunities to learn and

grow in the profession, ten Stayers have emphasized the requirement of training. A Stayer said

I have completed my nursing course in 2008, worked for more than one year and have joined here 2009, have learnt a lot of thing, lot of thing means a lot of thing.

Mother Institution Nurses passed out from nursing school/college owned by the hospital where they are working expressed happiness of working in the same hospital. A Stayer said

I am a student of the nursing school of this hospital; this is my mother institution and has passed my several years here. I know in and out of this hospital and feel it as my second home.

Twelve Stayers and one Leaver have spoken about it; leaver participant came back to the same institution after a short stint of service in another hospital.

Sense of Coherence

Twelve Stayers have stated that in nursing work pressure and ambiguity is common, so they keep themselves prepared to face eventualities. They said inspite of this we cannot escape tension always but at times we got result of our preparedness.

A Stayer said

………..While taking handover at the beginning of the shift I take a detailed handover. I than analyze the difficulties that might arise due to their physical condition and take up the matter with the respective Consultant over phone.

Summary:

Based on the insight a conceptual typology for understanding factors that drive nurse's turnover and retention have been designed. From the statement of respondent drivers of turnover which if addressed, by default promotes retention and vice-versa have been found, similarly drivers of

turnover and retention which are distinct have been found. Summary has been given in Table-II.

DRIVERS OF TURNOVER	DRIVERS OF RETENTION
Heavy Workload	------------------------------
Ambiguous situation	------------------------------
Disparity in Pay	Equity in Pay
No promotion prospect	Learning and Career Growth
Erratic Scheduling	-------------------------
Un-accommodative bosses	Team culture
------------------------	Sense of Coherence
Work-family Conflict	Supportive management

Discussion:

The study has found that some factors of turnover are distinct from that of retention and some turnover factors are opposite to that of retention. It has been found from the discussion that ambiguity, overload and erratic night scheduling creates intention to leave. Study on nurses in Singapore, Canada and USA have shown consistent result (Fang, 2001). These have been marked as turnover factors and no opposite of these as retention factors could be pointed out by participants, some Nursing Administrators have stated that stressors are inherent in nursing role. In discussion disparity in pay have been said as a turnover factor by some participants and hence it has been mentioned as a turnover factor.

Un-accommodative boss creates turnover intent whereas participative boss causing team culture develops intent to stay. Opposite of team work which means unfriendly team members and supervisors lead to turnover, whereas team work brings in satisfaction. Lack of promotion has been found as a driver of turnover whereas training and growth serve as retaining factor. Absence of retention factor like mother institution commitment may not cause turnover. Work life conflict is a driver of turnover; supportive management works to mitigate its effect.

Limitations:

To develop a comprehensive model a lot needs to be done. Empirical study encompassing a large sample needs to follow the qualitative research. Empirical research shall demonstrate clearly the relations of drivers of turnover and retention and also the intervening variables that may play in between.

Reactions that they have displayed in the cross sectional study might be momentary and may change in due course of time. It is therefore suggested that a longitudinal research may be conducted in future to explore these in depth.

Conclusion:

Healthcare Administrators need to deal separately factors of turnover which are distinct from that of retention from those which are mostly opposite to the factors of retention. Distinct factors of retention should also be addressed separately.

An important driver of retention that has been identified is organizational culture of team work and cooperation. This might be a vital reason why many nurse stay years together in same organization. This satisfaction with team is distinct culturally from that of the nurses in Ireland, Netherland or any other North American country where empowerment takes higher seat than team work.

Empowerment has been found as the next choice, nurses like other professional looks for empowerment. This is not alike to that of the nurses of western countries (Curtis, 2007) where empowerment has been rated as top driver of nurses' satisfaction.

Attitude towards "Mother Institution" has been found as retention factor by all the nurses who were once student of the nursing school/ college of the same hospital they are working, most of them stated the hospital as their second home.

Work life conflict is associated with absenteeism, intention of quitting the job and turnover. This can be reduced by supportive actions of management.

Nursing Supervisor exercises an important role in causing nurses' intent to stay or leave the organization. Several leavers have attributed one

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Social Loafing- A Perturb in Human Resource Management

Dhriti Das Deka

Assistant Professor, Department of Post Graduation, Gauhati Commerce College, Affiliated to Gauhati University

Bidhi Kashyap

Assistant Professor, Department of Post Graduation, Gauhati Commerce College, Affiliated to Gauhati University

Abstract

Human Resources are the essence of an organisation as it is concerned with people dimension in management. An organisation can expect high levels of performance and outcome only when the manpower at the workplace works collectively with a sense of urgency –potentially eliminating bureaucracy. A fully efficient and knowledgeable workforce is required for the effective functioning of an organisation and as such, it is important that people be managed and motivated to work in groups as team effort helps in more skillful attainment of organisational goals . People have more potential for creating ideas when working as a team than they do individually. In such group settings of workforce, a phenomenon which is usually observed is that of social loafing. It is the tendency of a person to not apply his/her full effort when working in a group with the assumption that his/her shortfall will be compensated by some other member of the group. This means that the person does not apply his/her full potential. Also, it has been found that a person is inclined towards putting less effort in a team assignment than if the same was assigned to him/her alone, a probable answer to this, as suggested by some psychologists, being that credit is shared in a group and individual acknowledgement is absent. It is important to assess the contribution of each individual to find out the loopholes in a particular system. Social loafing is one such loophole which is very difficult on the part of the management to assess in order to mitigate the inaccuracy. Social loafing has far reaching impact on corporate environment. This study is an attempt to examine the impact of social loafing on the manpower ability of an organisation and also assessing its effect on productivity. The study further attempts to create awareness about social loafing and put forward suggestions towards managing the same and the role of management in this regard.

Key words: Human Resource Management, Team Work, Social Loafing, Productivity

Introduction

In today's highly competitive workplace, it is believed that real success comes from team work. Team work is gaining its importance and is considered to be the preferred approach in almost all organizations as excellence is not only confined to one's specialized field. Working in a team can help one to learn from others, gain experience, share information and of course assessing one's potentiality. An individual's ability to inspire others, foster the sense of co-operation, maintaining the commitment are of crucial importance. All these qualities are of utmost importance in order to achieve organizational objectives. A team can expect productive outcome only when every team member works with a sense of urgency – potentially eliminating bureaucracy.

An individual should always be motivated to work in a group as one can experience a lot from it and at the same time can expect more quality performance output. Of course there are innumerous factors which have a high impact on overall output like competencies, skills, motivation and team size. But the most difficult part or negative aspect of a team work or group work is that there is no specific quantifiable method to assess the individual's contribution to team's output and this particular aspect influences an individual to abstain from work and rely on other team mates to get involved in the task and thus "social loafing" takes place. Social loafing occurs when it becomes intricate to figure out individual's contribution. It is of major apprehension which needs a proper tool for elimination. Social loafing is one such loophole which is very difficult on the part of the management to assess in order to mitigate the inaccuracy. Social loafing has far reaching impact on corporate environment. Social loafers always tries to exert less effort on group performance as they always believe that every member is going to loaf in every possible way. Proper appraisal is the need of the hour to avoid social loafing.

Objectives

1. To study the reasons of social loafing

2. To study the impact of it in productivity

3. To find out the level of awareness of its existence in management of an organization

4. To study the role of management in this regard to avoid social loafing

Research Methodology

- The study is an observational research study and is based on primary as well as secondary data.

- Primary data have been collected from different companies – public and private – and across different areas of operations:

Banks: Axis Bank, State Bank of India (SBI), ICICI Bank

I.T. firms: HCL, Cognizant

- Data have been collected from employees working in these firms by means of a structured disguised questionnaire. A total of 120 questionnaires were distributed in the two sectors – 60 in Banking sector and 60 in IT sector.

  ➢ Out of the 60 questionnaires forwarded to the bank employees 54 responses were received and out of these 4 responses were rejected due to insufficient data.

  ➢ A total of 57 responses were received from the IT firm employees out of which only first 50 were accepted to keep the responses from both the sectors equal.

- The employers were interviewed to gain insight into various aspects of work culture in these firms including their HR policies, appraisal techniques, etc.

- The questionnaires in banking sector were handed out personally and the employers were interviewed in person. While, the questionnaires in IT sector were e-mailed and the interviews with the employers were conducted over phone.

- Various books, journals and articles on the internet have been consulted for the purpose of assessing secondary data. Also, bank and company websites have been looked up to retrieve data on company policies.

- SPSS and Microsoft Excel 2007 have been used for analyzing and representing data.

Limitation:

The survey being conducted is limited to the banking and I.T. sectors due to time and resource constraint. Also, the data does not pertain to one region alone. Data from banking sector have been

collected from the branches, selected randomly, and operating in Guwahati city of Assam. The respondents of I.T. firms belong to the branches operating in Chennai. The cities have been selected on the basis of convenience for data collection.

Social Loafing: The Phenomenon

People are the essence of any organisation and no firm can operate efficiently if the people working in it are inefficient. Human Resources Management is hence one of the important aspects of an organisation. Any organisation, to be able to yield productivity, have to work in groups as tasks can be more effectively accomplished when more than one brain works on it. In fact, "Team work" is always the most emphasized term when recruiting personnel by various HR executives irrespective of types of companies and area of work. Synergy is achieved when resources are combined to yield an output which is greater than the sum of the inputs used. In case of positive Synergy,

2+2 = 5 or more

People are the essential resources of any organisation and they work in teams towards achievement of a particular goal or objective. So, to achieve synergy, people work in teams on various assignments. Deciding on team size is however important to achieve positive synergy as 'the more the better' cannot be relied on to achieve productivity out of group endeavours as a misfit in the number comprising a group can adversely affect the group's productivity and may in fact lead to negative synergy which is,

2+2 = 3 or less

One of the important factors contributing to negative synergy is social loafing which was first discovered by the French engineer Max Ringelmann. It is the phenomenon where individuals tend to apply less effort, than they are capable of, when working in a group with the assumption that their shortcomings will be compensated by some other member of the group. Many researchers have conducted experiments to study the causes of social loafing and how it can be controlled and minimized. Some researchers were of the opinion that social loafing is rare in case of newly formed groups rather than in case of groups in the midpoint or end of their existence (Workel, Rothgerber, Day, 2011). Others argue that people have the tendency to loaf as they are not identifiable and as a result of which responsibility is diffused which means "hide in the crowd" (Latane et al., 1979). Also, it can be witnessed when the task is unimportant, uninteresting or uninvolving.

While brainstorming and researching about social loafing, Workel, Rothgerber, Day, Hart and Butemeyer (1998) posed the opinion individuals who perceive that their efforts have a direct relation to group benefit; the tendency to loaf becomes minimal. Huguet, Charbonnier, and Monteil (1999) suggested that individuals with average ability on task would not resort to loafing and those who perceived themselves to be superior worked harder in groups when the task is challenging and have a tendency to loaf in case of easy tasks. Williams and Karau (1991, Experiment 1) observed that people characterized average or high on trusting resorted to social loafing on a brainstorming task and those low on trusting were found to be working harder collectively than coactively.

Thus, an organisation should bestow due attention to social loafing and figure out measures to combat it for it is essential that people get along in a group and understand their role, importance and contribution towards organisational tasks leading to productivity and hence the accomplishment of organisational goals.

Findings

- In the survey conducted in March-April 2014, it was found that almost all (>90%) respondents underwent training after selection for their respective jobs. Also, 60% of them chose to work on group assignments leaving 40% who opted to work on individual assignments. When asked to quote the reason for such choice, the respondents suggested that the group assignments helped in figuring out creative ways of completing tasks and also it helped in the completion of work in time. Some of them mentioned that group assignments helped them to understand the problems and gain insights into various perspectives in solving it and also facilitated them to seek help when accomplishing the task in hand.

- The questionnaire was fashioned with six questions to understand the intrinsic value assigned by the respondents on tasks of individual and group nature. The results found have been shown below and the values assigned are:

-2: least desirable, -1: less desirable, 0: neutral,
1: more desirable, 2: most desirable

Figure 1

Prepare monthly work-plan for self
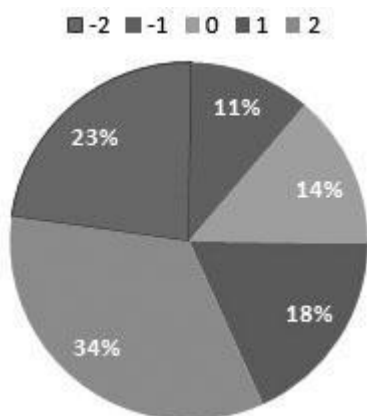
Figure 2

Prepare report on latest scheme/ product of the company
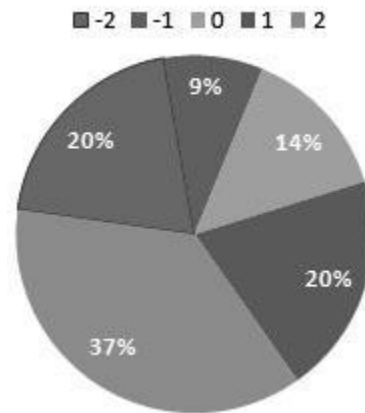
Figure 3

Reporting to team leader about daily/ weekly work
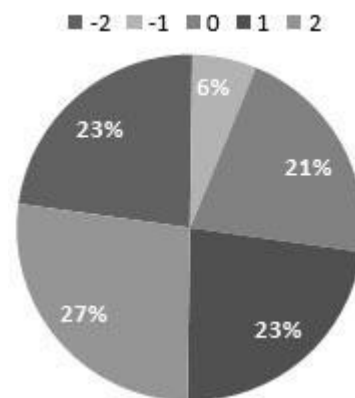
Figure 4

Working with a team to design marketing strategy of a new product/ service
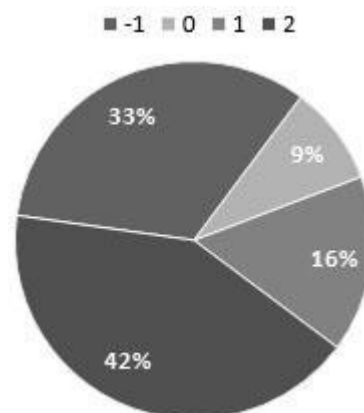
Figure 5

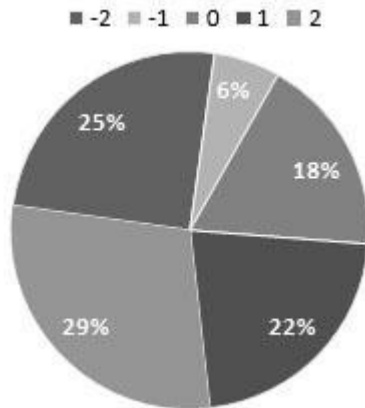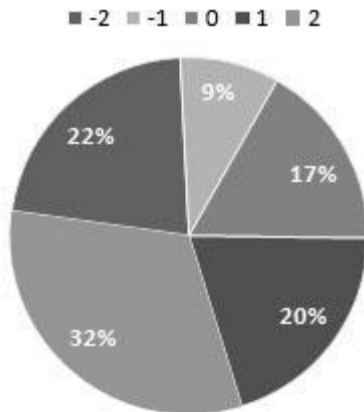**Brainstorming with team regarding work-related problem/ issue**

Figure 6

Reporting in board-meeting about a group assignment

➤ It was observed that in Figure 1, 2, 3, 4, 5 and 6 a majority of the respondents opted for more desirable (+ 1). It can thus, be inferred that respondents are not leaned towards individual or group assignments and value them equally. However, in case of figure 2 and 5, the percentage of respondents who considered the tasks - reporting to team leader and brainstorming – more desirable, 27% and 29% respectively, can be observed to be a not very significant number. It can be understood that the respondents value the tasks more favourable but there are also a considerable number of respondents who have considered the task: reporting to team leader less desirable

(21%), neutral (23%) and most desirable (23%). In case of figure 5, similar kind of phenomenon has been observed, which is neutral (22%) and most favourable (25%). This means that there can be differences in intrinsic values attached to a particular task by different employees.

➤ It was found that all the respondents were being supervised in their assignments – both individual and group, only 79% of the respondents reported that their roles were explained and 77% reported that they were assigned individual targets. Thus, it can be deduced from the observations that with individual roles and targets not being clearly mentioned, the chances that the burden of completion of task will rest on a few shoulders is heightened. Since, there is no clear scale or yardstick for measuring individual performance, the opportunity to loaf is stimulated in the employees.
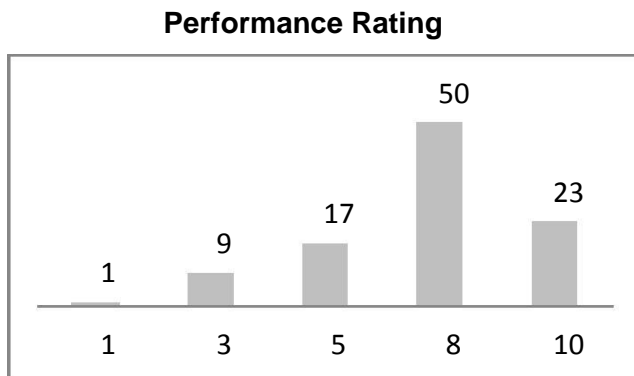
Figure 7

Role Desired in case of Group Assignments

➤ Figure 7 shows that 51% respondents chose to be group members rather than team leaders. It means that the respondents were almost equally divided between the two options. As large as 51% of the respondents decided not to take the responsibility of the group in leading it but be a part of the group and work without being accountable.
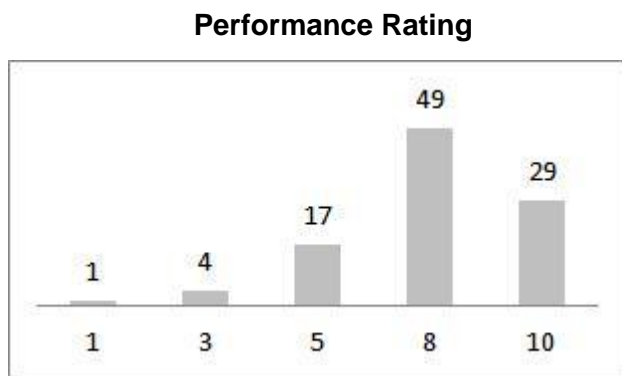
Figure 8

Self Assessment: Group Assignments

Performance Rating

Values: 1-Lowest, 3-Low, 5-Neutral, 8-High, 10-Highest

Figure 9

Self Assessment: Individual Assignments

Performance Rating

Values: 1-Lowest, 3-Low, 5-Neutral, 8-High, 10-Highest

➢ The figures 8 and 9 show the self-assessment ratings of the respondents in terms of group assignments and individual assignments respectively. It can be noticed that 50% of the respondents assessed their performance in case of group assignments as high and 49% of them rated their performance high while performing individual assignments. While much difference cannot be drawn here but if we observe the low ratings (3) for group as well as individual assignments, we can find that only 4% of the respondents rated their performance low in case of individual assignments but in case of group assignments 9% of them rated their performance low.

Although, there is only a minor difference, yet it cannot be ignored that more number of respondents rated their performance low in case of group assignments. This suggests that they do not apply their best effort in group assignments and thus are more likely to loaf.

➢ In the study, as many as 72% respondents desired to have friends as part of their team in group assignments. When justification for their desire was sought, some replied that friends in the group help them to rely on their friends to make up for them when they have to work on other valuable assignments or when they have to do their personal work and also when they are on leave. Some suggested that friends help them better understand the problems and provide them guidance and support in better accomplishment of the task. Hence, it can be deduced that if the later is true, the productivity of the group assignment can improve but if the former is true, the team leaders and the managers should be alarmed of social loafing.

➢ Lastly, it was found that only 40% of the respondents reported that they were provided with Psychological Consultant or Life Coach at their work place. Except ICICI, none of the bank employees reported of being provided psychological guidance. It is a matter of absolute concern that even the biggest Public Sector Bank – State Bank of India (SBI) is devoid of such an important person at the workplace.

Suggestions:

➢ The top management officials along with the managers and employees with supervisory roles should be provided periodical training updating them with the techniques of efficient management of work force to combat the challenges to productivity from group assignments.

For example, in the survey, many managers were found to be unfamiliar with the concept of social loafing. As such, workshops and training sessions on various approaches to combat social loafing as suggested by various researchers should be provided to them with practical applications of the same in real life scenarios.

➢ All the employees should be compulsorily directed to attend seminars on improving work environment, team work, disadvantages of social loafing and various motivational sessions.

If the bridge between individual and organisational goals is bridged with the help of conducting seminars, the chances of loafing can be minimized. The employees should be made realized that the attainment of organisational goals will ultimately fulfill their personal goals.

➢ The Human Resources Department should conduct both IQ (Intelligence Quotient) as well as EQ (Emotional Quotient) tests at the time of selection of employees and should maintain these records of each employee. This along with other psychological exercises can help determine team players from individual players which will help the managers to determine the appropriate group mix and the means to motivate both types of players in a group arrangement towards the attainment of higher productivity.

A recent study has shown that layoffs in various organizations have been due to problems related to EQ and not due to one's lack of IQ. As such, it is an important aspect of Human Resource Management and should be given due importance.

➢ Lack of yardstick at individual level instigates the employees towards loafing and as such individual targets should be stated clearly and deviances should be examined and addressed.

Also, individual recognition in group assignments can help in avoiding loafing among employees.

➢ Two-way review should be done after the completion of group assignments to understand the problems faced by the team members and the team leaders as well as the supervisors. The review should be anonymous to get accurate answers.

Scope for further research:

➢ Research can be conducted to examine the degree of social loafing in various business sectors which will help in determining the ones where this phenomenon is more domineering.

➢ Extensive research study on social loafing can be carried out to highlight the parameters that can help in establishing permissible limits of loafing in various types of organizations.

Conclusion:

Every organization desires to recruit efficient individuals to become a part of its working team for which they bestow due importance to the method of recruitment. But it is likely that the Human Resources team may fail to recruit an ideal individual for its organization every time. In today's highly complex work environment, it becomes immensely important to have a proper system to assess an individual in order to mitigate the anomalies to some extent which would surely yield better productivity. Social loafing should be regarded as a matter of concern by every organization although it is a little hard-hitting to recognize. But if proper steps are taken at the right time it can bring a paradigm shift to an organization's productivity.

In order to avoid social loafing innumerous techniques can be introduced but if the sense of belongingness and the individual's concern for each other is encouraged, a positive change can be expected. Although this term may not be very a familiar one for most of the employees but

unconsciously they may be acting as loafers which is tarnishing their professional as well as personal life, putting them in a dilemma for future prospects. Thus, in order to escape from this issue it is important to make people work in a team and to understand its effect - how it can act as a debacle for a team performance as well as for the organization at large. Management has a dynamic role to play by improving the work environment in order to cope with the present trend of fast development.

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