Print ISSN: 2455-0353

ARTHAVAAN

A Peer Reviewed Refereed Journal in Commerce and Management

Volume 2, Number 1 December, 2017

Published By:

Department of Commerce
BHARATI COLLEGE
C-4, Janakpuri, New Delhi-110058
Website: www.bharaticollege.com

ARTHAVAAN

Editorial Advisory Board

Published by:
Department of Commerce
Bharati College
C-4, Janakpuri, New Delhi-110058
Website: www.bharaticollege.com

Typeset by:
Excellent Publishers
Kishangarh, Vasant Kunj New Delhi: 110070
Mobile No. 9910948516, 9958167102

ARTHAVAAN

The journal Arthavaan is devoted to publication of original research on various aspects of business, economics and management including the current innovative leads in the formative stage which has a promise for a pragmatic application. The scopes of the journal include, but are not limited to, the following fields: economics, financial and banking, managerial economics, financial economics, public finance, econometrics, green economics, political economy, resource economics, population economics, economic growth, national income, fiscal and monetary policies, micro and macroeconomics, accounting,International economics/FDI, labour economics, behavioural/ health economics, Urban, rural, regional economics and development economics, business and economics education, accounting, management, marketing, experimental economics, computers in educational administration, multimedia environments, distance education, information systems for education/training support, business administration, marketing, entrepreneurship, human resources, business innovation, organization theory, management information system, electronic commerce, information system and technology, consumer behavior, internet marketing, management, international business, operations management, technology and innovation, business ethics, risk management, corporate strategy, corporate governance and capital structure, and so on.The main emphasis in the journal is on interdisciplinary, diverse and critical analyses of economic development, finance, trade as well as management processes in contemporary organizations as well as all areas of Business and Information Development in around the world.Publication is open to all researchers from all over the world. Manuscripts to be submitted to the Journal must represent original research reports and has not been submitted elsewhere prior to or after submission to this journal for publication. All the manuscripts submitted for consideration in ARTHAVAAN is subject to peer-review for taking up final decision on acceptance for publication, and decision of the editorial team will be final.

All papers will be reviewed by at least two referees who are peers in their field of research and by an Editor of the journal or as appointed by the Editor-in-Chief to be responsible for editing the manuscript.

The authors agree to automatically transfer the copyright to the publisher Editorial Board, Department of Commerce, Bharati College, if and when the manuscript is accepted for publication.

Printed in India

DISCLAIMER

The authors are solely responsible for the contents of the papers compiled in this volume. The publishers or editors do not take any responsibility for the same in any manner. Errors, if any, are purely unintentional and readers are requested to communicate such errors to the editors or publishers to avoid discrepancies in future.

The journal may publish supplements to the journal in the form of monographs etc. also, but all costs related to the production of supplements are to be paid by the orderer/author. The contacts in this regard may be made prior with the editorial office. Supplements will be treated in the same way as other submissions.

Submission of Manuscripts

Authors are requested to submit their papers electronically to conferencebc@gmail.com.

All business correspondence enquires and subscription orders should be addressed to:

Arthavaan
Editorial Board
Department of Commerce
Bharati College

Author Guidelines

Please follow the Guide for Authors instructions carefully to ensure that the review and publication of your paper is swift and efficient.

A manuscript may be returned for revision prior to final acceptance, the revised version must be submitted as soon as possible after the author's receipt of the referee's reports. Revised manuscripts returned after the expiry of stipulated time (as quoted during such a request) will be considered as new submissions subject to full re-review.

Paper categories:

Contributions falling into the following categories will be considered for publication:

- Original high-quality research papers (preferably no more than 10 pages double-line-spaced manuscript, in double column including tables and illustrations).
- Short communications or case studies for rapid publication (no more than 5 double-line-paced manuscriptsin double column pages including tables and figures).
- Mini-Review on subjects of cutting-edge scientific developments, theories, hypotheses and concepts, which could be of importance to the scientific community world-wide.

Peer-review policy

Peer review helps to uphold the academic credibility of a journal. To ensure good quality publication in Arthavaan all submissions are reviewed as per the following peer-review policy:

- All manuscripts submitted are reviewed by independent researchers for originality, validity and importance to help our editors determine if a manuscript is suitable for publication in the journal.
- We utilise a double-blind peer-review system, in which reviewers are unaware of the names and affiliations of the authors.
- Whenever possible, reviewers are matched to the paper according to their area of expertise.
- A final decision to accept or reject the manuscript will be sent to the author along with any recommendations made by the reviewers, and may include verbatim comments by the reviewers.
- The Editors establish their decision based on reviewers report and will be final.
- We aim to provide authors with first decision (of accept, reject or revisions required whether minor or major) within 8 weeks.

Ethics policy

We expect all prospective authors and reviewers to read and understand Ethics Policy before submitting/reviewing any manuscripts.

For authors

- Submitted manuscripts may be subject to plagiarism check at any stage in order to detect instances of overlapping and similar text.
- Authors should ensure that all researched work submitted is original, fully referenced and that all authors are represented accurately.
- Openly disclose the source of all data and third party material, including previously published work by the authors themselves.
- Fully correspond and comply with the editor and publisher in any requests for source data, proof of authorship or originality in a timely manner, providing reasonable explanation for discrepancies or failures to disclose vital information.

- The submitted work has not been published before (except in the form of an abstract or as part of a published lecture, review or thesis) – or the work is not under consideration elsewhere – that copyright has not been breached in seeking its publication – i.e. the publication has been approved by all co-authors and responsible authorities at the institute or organization where the work has been carried out.

For Reviewers

- Adhere to Arthavaan policy of double blind peer review of manuscripts. This includes, but is not restricted to, keeping their identity hidden from authors and not externally distributing any work that is passed to them for review.
- Review the submitted work in a responsible, impartial and timely manner.
- Report any suspected ethical misconduct as part of a thorough and honest review of the work.
- Avoid the use of unnecessarily inflammatory or offensive language in their appraisal of the work.

Publication policy

This policy sets forth the criteria for selection, evaluation, and publication of papers in Arthavaan. We have following publicationpolicy:

- The Arthavaan Journal is primarily research-oriented and may also include other comprehensive technical information.
- Accepted manuscript should not be previously published or submitted for consideration elsewhere while in the review or publication process.
- All manuscripts should be submitted as per the guidelines prescribed for the author/s.
- Manuscripts submitted for publication in Journal will be sent for double-blind review process.
- Copyrights for articles are retained by the authors, with first publication rights granted to the journal/publisher. Authors have rights to reuse, republish, archive, and distribute their own articles after publication. The journal/publisher is not responsible for subsequent uses of the work.
- No publication fee is charged for either submission or publication in Arthavaan.

Copy Right Policy

Arthavaan acknowledges and agrees that the Author(s) retain(s) the copyright to the work submitted for publication, and is/are allowed to:

- Revise, reproduce, distribute, publicly perform, and publicly display the Chapter/Article.
- Republish the Work, as long as Arthavaan is cited as the source of first publication of the Work.
- Authorize others to make any use of the Chapter/Article.
- Publish the Work, in whole or in part, by various means such as hard copy or electronic copy formats, and in any and all forms.

By accepting the Copyright Agreement the corresponding Author:

- Warrants that he/she is the Author and has the power and authority to make and execute this assignment.
- Affirms that, for jointly authored Chapters/Articles, he/she is empowered to accept this form on behalf of all authors. Warrants that the Chapter/Article is original, has not previously been published and is not currently under consideration for publication elsewhere.

Plagiarism Policy

- Plagiarism, in which one misrepresents ideas, words, computer codes or other creative expression as one's own, is a clear violation of such ethical principles. Plagiarism can also represent a violation of copyright law, punishable by statute. Plagiarism manifests itself in a variety of forms, including Verbatim copying, near-

verbatim copying, or purposely paraphrasing portions of another author's paper; Copying elements of another author's paper, such as equations or illustrations that are not common knowledge, or copying or purposely paraphrasing sentences without citing the source; and Verbatim copying of portions of another author's paper with citing but not clearly differentiating what text has been copied (e.g., not applying quotation marks correctly) and/or not citing the source correctly. Self-plagiarism is a related issue.

- Self-plagiarism is the verbatim or near-verbatim reuse of significant portions of one's own copyrighted work without citing the original source. Self-plagiarism does not apply to publications based on the author's own previously copyrighted work (e.g., appearing in a conference proceedings) where an explicit reference is made to the prior publication. Such reuse does not require quotation marks to delineate the reused text but does require that the source be cited.
- All authors are deemed to be individually and collectively responsible for the content of papers published by Arthavaan. Hence, it is the responsibility of each author to ensure that papers submitted to Arthavaan attain the highest ethical standards with respect to plagiarism.
- Arthavaan and the Arthavaan Editorial Board place the investigation of each claim of plagiarism at the highest priority for resolution and action.
- To inform Arthavaan of alleged plagiarism, send email to Arthavaan on official e-mail id (conferencebc@gmail.com) with the following minimum information:

The names and contacts of the person(s) making the claim and their relationship to the allegation (e.g., author of plagiarized work, reviewer or editor of plagiarizing work);

A citation to the original paper(s) (paper title, author, publication title, date of publication), a citation to the alleged plagiarizing paper, indication of specific pages, sections, paragraphs in each work alleged as evidence of the plagiarism.

ARTHAVAAN

Volume 2, Issue 1, December, 2017

Contents

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

Operational Efficiency and Related Technological Aspects of Indian Pharmaceutical Industry: A Data Envelopment Analysis Approach

Jatin Goyal[1], Dr. Harpreet Kaur[2]

[1]Senior Research Fellow, University School of Applied Management, Punjabi University, Patiala (Punjab)-147002, India
*jatin2goyal@gmail.com*Corresponding Author*
[2]Associate Professor, Department of Distance Education, Punjabi University, Patiala (Punjab) – 147002, India
harpreet.pbiuniv@gmail.com

Abstract: ***India, despite being armed with a domestic pharmaceutical industry that has made the country a leading producer of low-cost medicines in the world, is still having to grapple with issues of operational inefficiency due to huge instability of profits owing to the restrictions of drug price control policies. The only way to survive in this cut-throat pressure is to find the avenues of cost minimization and to make the best use of available resources. In this paper, an attempt has been made to measure the overall technical, pure technical and scale efficiencies in the Indian pharmaceutical industry taking all important operational parameters into consideration and to provide target setting analysis for the same using cross-sectional data of 193 companies for the year 2015-16. For this purpose a non-parametric linear programming technique named Data Envelopment Analysis (DEA) has been used. The empirical results highlight that on an average the companies in Indian pharmaceutical industry have the potential to decrease their inputs by about 24.26 percent to produce the same level of outputs as before. Looking carefully into the root cause of inefficiency can help the Indian pharmaceutical industry to sustain in highly competitive environment. The findings bear a strong implication that there is a need to take concrete steps to eliminate the managerial inefficiencies in the process of resource utilization.***

Keywords: ***India, Pharmaceutical Industry, DEA, Efficiency, Target Setting.***

1. INTRODUCTION

Indian pharmaceutical industry is one of the oldest and fastest growing manufacturing industries of India. India is the third largest manufacturer of pharmaceutical products in terms of volume and thirteenth largest in terms of value. Indian pharmaceutical industry contributes significantly to the overall Index of Industrial Production and Gross Domestic Product (GDP) and export earnings. According to the sectorial report of Pharmaceuticals Export Promotion Council of India (PHARMEXCIL), India's pharmaceutical exports stood at US$ 16.4 billion in 2016-17 and are expected to grow by 30 per cent over the next three years to reach US$ 20 billion by 2020. The underlying strength of Indian pharmaceutical industry is its generic drugs segment which contributes to 70 percent of total market share in terms of revenue. India has the 2nd largest number of USFDA approved manufacturing plants outside the United States. It is anticipated that the Indian pharmaceutical industry is expected to grow over 15 per cent per annum between 2015 and 2020 and will outperform the global pharma industry, which is set to grow at an annual rate of 5 per cent between the same period (IBEF, 2017). Keeping all this in mind, it is pertinent to note that the growth of pharmaceutical industry is important for the growth of the country's economy as a whole.

After 1991 reforms, the market has seen the entry of many foreign players as well as rise of many domestic manufacturers. In the initial globalization phase, the Indian pharmaceutical industry played a major role in turning the unfavorable Balance of Payments (BoP) into a favorable one due to its export intensive characteristics. The introduction of product patents in India in 2005 gave a boost to the discovery of new drugs. However, at the present time for export oriented Indian pharmaceutical companies, there are certain speed breakers on the road due to the stringent quality and compliance issues of United States Food and Drug Administration (USFDA). For other domestic players, there is huge instability of profits owing to the enactment of drug price control policies of National Pharmaceutical Pricing Authority (NPPA).

The companies grumble that the reforms of the Government for the essential medicines have caused them to lower the price of drugs. The main issue raised by most of the pharma companies is that the profits which they earn are basically very meagre and this income is not sufficient enough to even

cover up the operational costs. The only way to survive in this cut-throat pressure is to find the avenues of cost minimization and to make the best use of available resources. In this scenario, there is a rigorous need to ensure that operational efficiency of the Indian pharmaceutical companies is taken up to distinctly higher levels in order to minimize the overall costs of production to get a competitive edge and to ensure the sustainability of the business. In recent years, various research studies have examined the efficiency levels of various industries and companies to obtain greater insights of competitiveness. Likewise, necessitating the need for the same, the broad objective of this paper is to measure the overall technical, pure technical and scale efficiencies in the Indian pharmaceutical industry taking all important operational parameters into consideration and to provide target setting analysis for the same using cross-sectional data for the year 2015-16. The study will offer the direction for improvement of technical efficiency and will try to find how much wastage of resources can be avoided to reach at optimal production level.

In order to achieve the above mentioned objective, a non-parametric linear programming based frontier technique named data envelopment analysis (DEA) has been utilized due to its capability of taking multiple inputs and outputs simultaneously for calculating the relative efficiency and come up with a scalar measure of overall performance for easier decision making. DEA has been widely used and accepted as methodology for performance evaluation and benchmarking. The basic concept of directing methodology at frontiers rather than central tendencies such as statistical regression, gives DEA an advantage over traditional methods. DEA is capable of identifying relationships among entities that traditional methods are not able to identify. It quantifies relations of entities in a direct manner without requiring several assumptions or variations on data sets.

The rest of paper is organized as follows. In Section 2, we provide a brief review of the related studies on the subject matter. In Section 3, the methodological framework, data sources, sample selection and details of variables taken in this study are outlined. Section 4 presents the empirical findings of the DEA models employed in this study together with the upshot information on target setting analysis for inefficient pharmaceutical companies. The final section concludes the paper by providing some useful policy implications.

2. REVIEW OF LITERATURE

In this section, we discuss some reviews of the related literature concerning this study given as follows:

González & Gascón (2004) analyzed the efficiency and productivity growth of 80 pharmaceutical companies of Spain between 1994 to 2000. The results of the study suggested that the contribution of technical change to productivity growth was negligible. The poor result of R&D activities hindered the efficiency and growth of Spanish pharmaceutical industry. The study concluded that there is a need to intensify the R&D efforts and expansion of production possibilities to develop high margin and patented products.

Saranga & Phani (2004) applied DEA on a sample of 44 Indian pharmaceutical companies for the period of 1992-2002 to look at the internal efficiencies of pharmaceutical companies. Technical and scale efficiencies were computed using the CCR and BCC models. The results of DEA were analyzed along with their Compounded Annual Growth Rate (CAGR) to check whether internal efficiencies, size and growth rate are related or not. Findings showed that the size of a company has no influence on the internal efficiencies scores. However, efficiency scores and growth rates were found to be positively related except for a few companies.

Hashimoto & Haneda (2008) measured the R&D efficiency of 10 Japanese firms for the period of 1982-2001 using DEA based Malmquist productivity index. The results showed that innovation of R&D technology had not taken place so much for decade 1983–1992 and Japanese pharmaceutical industry experienced a great R&D efficiency loss in year 1992 to 50 percent. Although, the firms had continued to increase R&D expenditure every year, yet the R&D efficiency showed no significant improvement over time.

Tripathy et al. (2009) examined the levels and determinants of firm's efficiency using firm-level data of 90 Indian pharmaceutical firms for the years 2001-02 to 2007-08. A two stage DEA model, considering one output variable and three input variables was applied to compute the technical efficiency scores. The results showed that the performance of a large number of sample firms was sub-optimal and with the introduction of product patents, the pharmaceutical industry has become more competitive. To become efficient, the firms need to reduce their inputs to attain a given level of output.

Wang et al. (2011) gauged the efficiency of 12 Taiwanese pharmaceutical companies using grey relational analysis coupled with DEA based Malmquist analysis. The study primarily focused on how to utilize intellectual capital more efficiently in order to strengthen the competitiveness of enterprises. The results indicated that the companies in the intellectual capital management, still have great room for improvement and need to reduce waste of input resources, to enhance the intellectual capital management performance.

In sum, a careful screening of the available literature reveals that empirical studies for evaluating technical efficiency with reference to the Indian pharmaceutical industry are scant for non-parametric technique i.e. DEA. Most of the reviewed studies have been conducted outside India. Few studies that have been conducted for Indian pharmaceutical industry are prior to the global recession of 2008. After 2008, major

structural changes have been taken place at national and global level. The environment in which companies are operating now is not same as before. Therefore, keeping this in mind, the present study seeks to fill such gaps and intends to enrich the available literature concerning with the measurement of operational efficiency of Indian pharmaceutical industry using DEA methodology.

3. METHODOLOGICAL FRAMEWORK

3.1 Concept and Measurement of Technical Efficiency

The literature on the measurement of efficiency begins with Farrell (1957) who drew upon the work of Debreu (1951) and Koopmans (1951) to consider the technical efficiency measure in a single-output and single-input situation. Farrell proposed that the efficiency of a firm consists of two components viz. technicalefficiency, which reflects the ability of a firm to obtain maximal output from a given set of inputs, and allocativeefficiency, which reflects the ability of a firm to use the inputs in optimal proportions, given their respective prices and the production technology. These two measurements are then combined to provide a measure of total economic efficiency. The measure of the allocative efficiency requires the information on both output and input prices data. Because India's economy is still under the process of transformation to a planned economy, the complete and authentic price data is not yet available for Indian pharmaceutical industry. For this reason the analysis in this paper will concentrate on the parameters of technical efficiency alone. Since the technical efficiency essentially measures the gap between the possible outputs, or the best practice and actual outputs of a firm, it demonstrates the extent to which the observed firms' performance approaches its potential or the so-called 'best practice' standard.

3.2 The DEA Approach – CCR and BCC Models

DEA was originally developed in the late 70's to provide a linear programming based mathematical technique for measuring the efficiency of a set of decision-making units (DMUs). Since the inception of DEA methodology, numerous mathematical programming models have been proposed in DEA literature (See Charnes et al., 2013; Zhu, 2014). The first seminal paper introducing DEA was given by Charnes et al. (1978), which got recognized after their names as CCR (Charnes, Cooper and Rhodes) model. CCR model uses the optimization method of mathematical programming to generalize the Farrell's (1957) single-output and single-input technical efficiency measure to the multiple-output and multiple-input situation by constructing a single 'virtual' output to a single 'virtual' input relative efficiency measure. The DEA technique is non-parametric in the sense that it is entirely based on the observed input-output data to estimate the efficient production frontier in a piecewise linear fashion. The purpose of DEA is to construct a non-parametric envelopment frontier over the data points such that all observed points lie on or below the production frontier and then to determine if the DMU under consideration is technically efficient or not. Because DEA calculations are generated from actual observed data for each DMU, they produce only relative efficiency measures. The relative efficiency of each DMU is calculated in relation to all the other DMUs, using the actual observed values for the outputs and inputs of each DMU.

CCR model was further expanded by Banker, Charnes and Cooper (1984) which later on got recognition as BCC model. The basic difference between CCR and BCC model is that the former has an assumption that all firms operate at constant returns to scale, while the latter accounts for variable returns to scale. Both these models are further divided into two orientations namely input and output orientation. The input orientated model is the method that seeks to measure technical efficiency as a proportional reduction in input usage, with output levels held constant. On the contrary the output orientation model seeks to measure technical efficiency as a proportional increase in output production, with input levels held fixed (Coelli et al., 2005). Since in Indian pharmaceutical industry, the pricing of the drugs is controlled by NPPA, the major concern is cost reduction. So in this case, an input orientation is more appropriate.

An intuitive way to comprehend DEA is via the ratio form. For each DMU, we would like to obtain a measure of the ratio of all outputs over all inputs. To illustrate the CCR model, consider n DMUs, $j = 1,2, \ldots\ldots, n$. The units are homogeneous with the same types of inputs and outputs. Assume there are m inputs, $i = 1,2, \ldots\ldots, m$ and s outputs, $r = 1,2, \ldots\ldots, s$. Let x_{ij} and y_{rj} denote, respectively, the input and output vectors for the j^{th} DMU. Thus, x_{ij} is a $(m \times 1)$ column vector and y_{rj} is a $(s \times 1)$column vector. Moreover, $X = (x_1, x_2, \ldots\ldots, x_n)$is the $(m \times n)$ input matrix and $Y = (y_1, y_2, \ldots\ldots, y_n)$ is the $(s \times n)$ output matrix. The CCR model assigns weights to each input and output, and then assesses the efficiency of a given DMU by the ratio of the aggregate weighted output to the aggregate weighted input. The weights assigned must be non-negative. Also, they must restrict each DMU from receiving a ratio (of the weighted output to the weighted input) that is greater than 1. Mathematically, when evaluating the efficiency of the DMU k, we solve for the following linear programming problem (LPP):

$$\underset{\{u,v\}}{Maximize} \frac{u^T y_k}{v^T x_k} \qquad [1]$$

$$Subject\ to: \ \frac{u^T y_j}{v^T x_j} \leq 1$$

$$j = 1,2, \ldots\ldots, n$$

$$u, v \geq 0$$

Where u is the $(s \times 1)$ vector of output weights and v is the $(m \times 1)$ vector of input weights.T denotes the matrix transpose operator. Thus, u and v are chosen to maximize the efficiency measure of the DMU k subject to the constraints that the efficiency levels of all units must be less than or equal to 1.

One problem with this particular ratio formulation is that it has an infinite number of solutions. To generate a unique solution, an additional constraint $u^T y_k = 1$ is imposed. The maximization problem then becomes:

$$\underset{\{u,v\}}{Minimize} v^T x_k \qquad [2]$$

$$Subject\ to:\ u^T y_k = 1$$

$$u^T y_j - v^T x_j \leq 0$$

$$j = 1,2, \ldots\ldots, n$$

$$u, v \geq 0$$

The duality problem to input-oriented CCR model can be written as follows:

$$Minimize\ TE^k_{CRS} = \theta_k \qquad [3]$$

$$Subject\ to:\ \sum_{j=1}^{N} \lambda_j\, x_{ij} \leq \theta_k x_{ik}$$

$$\sum_{j=1}^{N} \lambda_j\, y_{rj} \geq y_{rk}$$

$$\lambda_j \geq 0$$

Where, λ is a $(n \times 1)$ column vector; θ is a scalar and is the efficiency score of j^{th} DMU; $i = 1,2, \ldots\ldots, m$ (Counter for inputs); $r = 1,2, \ldots\ldots, s$ (Counter for outputs); $j = 1,2, \ldots\ldots, n$ (Counter for companies); x_{ij} = amount of input i used by DMU j; y_{rj} = amount of output r produced by DMU j; and k represents the DMU whose efficiency is to be evaluated.

We denote $TE_{CRS} = \theta$, the overall technical efficiency (OTE) score measured by the input oriented CCR method. Let ${\theta_k}^*$ denotes the solution to (3) then obviously ${\theta_k}^* \leq 1$. According to the Farrel's definition (1957), if ${\theta_k}^* = 1$, it indicates a CCR technically efficient DMU, if ${\theta_k}^* < 1$, it indicates CCR technically inefficient. Here it is worthwhile to note that the above linear programming problem must be solved n times, once for each DMU in the sample. A value of θ is then obtained for each DMU.

The CCR model is based on the assumption of constant returns to scale. Given this assumption, the size of the DMU is not considered to be relevant in assessing the relative efficiency. This means that even small DMUs can produce at the same level parallel to large DMUs. However, this assumption is not appropriate in developing economies where economies/dis-economies of scale could set in. In fact, not all DMUs always operate at an optimal scale. Imperfect competition, constraints on finance, etc. may cause a DMU to be not operating at optimal scale (Coelli et al., 2005). Therefore, a less restrictive VRS frontier can be constructed where Overall Technical Efficiency (OTE) can be decomposed into pure technical efficiency (PTE) and scale efficiency (SE). The VRS model incorporates the dual of CRS model, with an extra convexity constraint $\sum_{j=1}^{N} \lambda_j = 1$ into problem, which essentially ensures that an inefficient DMU is only benchmarked against DMU of similar size.

The duality problem to input oriented BCC model can be written as follows:

$$Minimize\ TE^k_{VRS} = \mu_k \qquad [4]$$

$$Subject\ to:\ \sum_{j=1}^{N} \lambda_j\, x_{ij} \leq \mu_k x_{ik}$$

$$\sum_{j=1}^{N} \lambda_j\, y_{rj} \geq y_{rk}$$

$$\sum_{j=1}^{N} \lambda_j = 1$$

$$\lambda_j \geq 0$$

We denote $TE_{VRS} = \mu$, the pure technical efficiency (PTE) score measured by the input oriented BCC method. It is worthwhile to mention that BCC model measures the PTE, whereas CCR model measures both PTE and SE. Clearly, $TE_{CRS} \leq TE_{VRS}$, hence by using TE^k_{CRS} and TE^k_{VRS} measures, we derive a measure of SE as a ratio of TE^k_{CRS} to TE^k_{VRS} given as:

$$SE^k = \delta_k = {TE^k_{CRS}}\big/{TE^k_{VRS}} = {\theta_k}\big/{\mu_k} = {OTE}\big/{PTE} \qquad [5]$$

The idea of looking at scale efficiency is appealing because it provides a measure of what could be gained by adjusting the size of the firm (Bogetoft & Otto, 2010). Banker et al. (1984) introduced the concept of Most Productive Scale Size (MPSS)

to define the level of operations that maximizes the efficiency of a DMU. In short run, a DMU may either operate at DRS or IRS, nevertheless in the long run, it will move to CRS by becoming larger or smaller as a result of changing its operating strategy in terms of scaling up or scaling down to survive in a competitive market.

3.3 Data and Sample

In this study, the analysis is based on cross-sectional data of 193 Indian pharmaceutical companies for the year 2015-16. All the data relating to selected input and output variables have been extracted from the Prowess database of Centre for Monitoring Indian Economy (CMIE). Initially, we got the data of 198 pharmaceutical companies. In order to detect the potential outliers from the sample we then applied the method suggested by Bogetoft & Otto (2015). In this process, 5 companies were turned out to be extreme outlier. The removal of outliers provided us with a more representative frontier. We used software R[1] to perform the empirical analysis.

3.4 Selection of Input and Output Variables

The selection of inputs and outputs is one the most crucial exercises of DEA analysis. However, there are no specific rules defined for the selection of input and output variables, generally the inputs are defined as resources utilized by the DMU and outputs as the benefits generated. Since an organization's performance is a complex phenomenon requiring more than a single criterion, recent studies have argued that a multi-factor performance measurement model may be used (Zhu, 2000). Indeed, an accurate selection of the indicators, which are best adapted to the objectives of the analysis, is critical to the relevance and usefulness of the results. So far our choice of input and output variables is concerned, we referred to various natural choices amongst various researchers (See Mukherjee & Ray, 2005; Kumar & Arora, 2011; Kumar &Arora, 2012; Tripathy et al., 2012; Saranga&Phani, 2004; Ogayon, 2014).

In the present study, our choice of inputs is governed by the fact that the major cost elements which constitute the operating expenses of a pharmaceutical company in India are considered viz. (i) cost of raw material, (ii) cost of manpower, (iii) cost of production, (iv) cost of administration, and (v) cost of selling and distribution.

While making the choice of output variables, we found net sales and operating profit as most accepted amongst various researchers. However, instead of taking sales as separate output variable and to avoid extreme heterogeneity in data, all the selected variables were divided by net sales to normalize the data. So in this process, all the input variables are basically left behind in terms of percentage of sales. Accordingly, the left over output variable is only one i.e., operating profit margin.

[1] *Benchmarking, ucminf and lpSolveAPI packages.*

The size of the sample utilized in the present study is consistent with the various rules of thumb available in the DEA literature. Cooper, Seiford, and Tone (2007) provides two such rules that together can be expressed as: $n \geq \{m \times s\}$or $n \geq \{3(m+s)\}$, $\forall\, n =$ number of DMUs, $m =$ number of inputs, $s =$ number of outputs. The first rule of thumb states that sample size should be greater than equal to product of inputs and outputs. While the second rule states that number of observation in the data set should be at least three times the sum of number of input and output variables. Given $m = 5$ and $s = 1$ in our study, the sample size $n = 193$ used in the present study exceeds the desirable size as suggested by the above mentioned rules of thumb to obtain sufficient discriminatory power.

4. EMPIRICAL FINDINGS

In this section, the efficiency results obtained through input-oriented CCR and BCC models have been presented and discussed. Table 1 presents the descriptive statistics and frequency distribution of overall technical efficiency (OTE) scores of all the 193 Indian pharmaceutical companies for the year 2015-16 obtained by running input oriented CCR model. We find that the mean of OTE scores has turned out to be 0.7574 indicating that on an average the companies in Indian pharmaceutical industry have overall technical inefficiency (OTIE) of about 24.26 percent The perusal of the Table 1 further tells that out of 193 pharmaceutical companies included in the sample, only 52 companies have been found to be relatively efficient with OTE score equal to one. It represents that 26.94 percent companies set an example of best-practice by defining the efficient frontier. The practices of these companies must be imitated by the inefficient companies to improve their score of OTE.

5. DECOMPOSITION OF OVERALL TECHNICAL EFFICIENCY

As stated earlier, the OTE scores obtained through CCR model can be decomposed into two mutually exclusive non-additive components viz. pure technical efficiency (PTE) and scale efficiency (SE). Recall,$SE = OTE/PTE$ i.e. $OTE = PTE \times SE$. It can be done by using the BCC model upon the same data. If there is a difference in scores for a particular DMU, it indicates that there exists scale inefficiency (SIE). In DEA literature, the DMUs getting OTE scores equal to 1 are referred to as 'globally technical efficient' and DMUs getting PTE scores equal to 1 but OTE scores not equal to 1 are called 'locally technical efficient'.

Table 2 provides the descriptive statistics and frequency distribution of PTE scores of Indian pharmaceutical companies. The mean value of PTE scores has turned out to be 0.8124 indicating that the extent of pure technical inefficiency (PTIE) in the Indian pharmaceutical industry is to the tune of about 18.76 percent. Only 63 pharmaceutical companies out of 193 (i.e. 32.64 percent) have acquired the status of locally technical efficient since they attained PTE score equal to 1. Out of these 63 pharmaceutical companies, 52 pharmaceutical companies are also relatively efficient under CRS with OTE score equal to 1 i.e. they are globally as well as locally technical efficient. Further, for remaining 11 pharmaceutical companies it may be stated that they are locally technical efficient but globally inefficient.

TABLE 1: Frequency Distribution and Descriptive Statistics of Overall Technical Efficiency (OTE) Scores of Indian Pharmaceutical Industry

Frequency Distribution						
OTE Scores Range			**No. of Companies**		**Percentage**	
OTE < 0.4			22		11.40	
0.4 ≤ OTE <0.5			17		8.81	
0.5 ≤ OTE <0.6			23		11.92	
0.6 ≤ OTE <0.7			25		12.95	
0.7 ≤ OTE <0.8			15		7.77	
0.8 ≤ OTE <0.9			21		10.88	
0.9 ≤ OTE <1			18		9.33	
OTE = 1			52		26.94	
Total			**193**		**100.00**	
Descriptive Statistics						
Minimum	**First Quartile**	**Mean**	**Median**	**Third Quartile**	**Maximum**	**Standard Deviation**
0.1783	0.5855	0.7574	0.8197	0.9348	1.0000	0.1431
Source: Authors' calculations.						

TABLE 2: Frequency Distribution and Descriptive Statistics of Pure Technical Efficiency (PTE) Scores of Indian Pharmaceutical Industry

Frequency Distribution						
PTE Scores Range			**No. of Companies**		**Percentage**	
PTE < 0.4			12		6.22	
0.4 ≤ PTE <0.5			11		5.70	
0.5 ≤ PTE <0.6			27		13.99	
0.6 ≤ PTE <0.7			25		12.95	
0.7 ≤ PTE <0.8			24		12.44	
0.8 ≤ PTE <0.9			13		6.74	
0.9 ≤ PTE <1			18		9.33	
PTE = 1			63		32.64	
Total			**193**		**100.00**	
Descriptive Statistics						
Minimum	**First Quartile**	**Mean**	**Median**	**Third Quartile**	**Maximum**	**Standard Deviation**
0.2433	0.7075	0.8124	0.8794	0.9441	1.0000	0.1059
Source: Authors' calculations.						

TABLE 3: Frequency Distribution and Descriptive Statistics of Scale Efficiency (SE) Scores of Indian Pharmaceutical Industry

Frequency Distribution						
SE Scores Range		**No. of Companies**		**Percentage**		
SE < 0.4		0		0.00		
0.4 ≤ SE <0.5		2		1.04		
0.5 ≤ SE <0.6		19		9.84		
0.6 ≤ SE <0.7		34		17.62		
0.7 ≤ SE <0.8		27		13.99		
0.8 ≤ SE <0.9		28		14.51		
0.9 ≤ SE <1		31		16.06		
SE = 1		52		26.94		
Total		**193**		**100.00**		
Descriptive Statistics						
Minimum	**First Quartile**	**Mean**	**Median**	**Third Quartile**	**Maximum**	**Standard Deviation**
0.4773	0.7923	0.8925	0.9236	0.9468	1.0000	0.0957
Source: Authors' calculations.						

Table 3 provides the descriptive statistics and frequency distribution of SE scores of Indian pharmaceutical companies. The value of SE scores = 1 implies that the particular DMU is operating at MPSS i.e. optimal scale size. On the contrary, a value of SE scores ≠ 1 implies that company is experiencing inefficiency because it is not operating at its optimal scale size. For our analysis, the mean value of SE scores has turned out to be 0.8925 indicating that the average level of SIE in the Indian pharmaceutical industry is about 10.75 percent. Given PTIE = 18.76 percent, this fact reveals that inefficiency in resource utilization i.e. managerial incapacity is more important contributor of OTIE. The perusal of the Table 3 further tells that out of 193 pharmaceutical companies included in the sample, only 52 companies (i.e. 26.94 percent) have attained SE score equal to 1 and are operating at MPSS. Thus, it portrays that the remaining 141 pharmaceutical companies (i.e. 73.06 percent) are operating with some degree of SIE, albeit of different magnitude.

6. TARGET SETTING ANALYSIS FOR INEFFICIENT COMPANIES OF INDIAN PHARMACEUTICAL INDUSTRY

The target setting analysis shows that how outputs can be increased and inputs can be decreased to move a DMU from inefficient to efficient. Koopman's (1951) definition of technical efficiency stated that a DMU is only technically efficient if it operates on the frontier and furthermore all the associated input and output slacks are zero. Thus, a company may be considered efficient because it lies on the efficiency frontier, but is weakly efficient as it has a positive or negative slack in one of its inputs or outputs respectively. It is worth noting that slacks exist for only those DMUs that are identified as inefficient in a particular DEA run (Kumar, 2011). However, slacks represent only the left over portion of inefficiencies after proportional reduction in inputs and outputs. In input oriented DEA model, the input slack represents the excess input and output slack represents the output which is under produced (See Avkiran, 1999; Ozcan, 2008).

The mathematical formulation of the input and output target points (x_{ik}^*, y_{rk}^*) as given by Zhu (2014) can be represented as follows:

$$y_{rk}^* = y_{rk} + s_r^{+*} \quad [6]$$

$$x_{ik}^* = \theta_k^* x_{ik} - s_i^{-*} \quad [7]$$

Where, y_{rk}^* = target output r for k^{th} DMU; x_{ik}^* = target input i for k^{th} DMU; y_{rk} = actual output r for k^{th} DMU;x_{ik} = actual input i for k^{th} DMU; θ_k^* = efficiency score of k^{th} DMU; s_r^{+*} = optimal output slack;s_i^{-*} = optimal input slack; $i = 1,2,\ldots\ldots,m$ (Counter for inputs); $r = 1,2,\ldots\ldots,s$ (Counter for outputs).

After obtaining the input and output target points, the potential improvement in outputs and potential savings in inputs can be computed as follows:

$$Potential\ improvement\ in\ output = \left(\frac{y_{rk}^* - y_{rk}}{y_{rk}}\right) \times 100 \quad [8]$$

$$Potential\ saving\ in\ input = \left(\frac{x_{ik} - x_{ik}^*}{x_{ik}}\right) \times 100 \quad [9]$$

TABLE 4: Total Potential Improvement in Outputs and Saving in Inputs of Inefficient Companies of Indian Pharmaceutical Industry

Description	Outputs/ Inputs	Constant Returns-to-Scale (CRS)			Variable Returns-to-Scale (VRS)		
		Actual	Target	Potential Improvement	Actual	Target	Potential Improvement
Potential Improvement in Outputs	Operating Profit Margin	16.02	18.23	13.83%	16.02	17.95	12.08%
Potential Saving in Inputs	Cost of Raw Material	51.87	38.23	26.29%	51.87	41.44	20.10%
	Cost of Manpower	6.73	4.97	26.10%	6.73	5.05	24.91%
	Cost of Production	11.33	8.04	29.01%	11.33	8.67	23.44%
	Cost of Administration	4.70	3.28	30.14%	4.70	3.73	20.55%
	Cost of Selling and Distribution	5.67	4.02	29.04%	5.67	4.18	26.21%
Source: Authors' calculations.							

Table 4 provides the potential improvement in outputs and saving in inputs of inefficient companies of Indian pharmaceutical industry. It can be observed that imposing CRS restriction on technology, on an average, 26.29 percent of material costs, 26.10 percent of manpower costs, 29.01 percent of production costs, 30.14 percent of administration costs and 29.04 percent of selling and distribution costs can be theoretically reduced if all the inefficient companies operate at the same level as the best-practice companies i.e. efficient companies. An important observation here is that outputs of inefficient pharmaceutical companies can be increased simultaneously with the reduction of inputs due to the presence of slacks. It can be clearly seen that the pharmaceutical companies on an average can increase their operating profit margin by 13.83 percent. It is worthwhile to note here that these figures only belong to inefficient companies of the Indian pharmaceutical industry, since there exists no scope for further improvement in the efficiency of companies projected at best practice frontier.

Looking forward to the extreme right of the Table 4, it can be observed that under VRS assumption, on an average, 20.10 percent of material costs, 24.91 percent of manpower costs, 23.44 percent of production costs, 20.55 percent of administration costs and 26.21 percent of selling and distribution costs can be theoretically reduced in the inefficient companies of the Indian pharmaceutical industry. The potential output improvement in operating profit margin assuming VRS technology has been noted at 12.08 percent. It can be clearly understood from the given analysis that Indian pharmaceutical companies have a huge potential to reduce the overall cost of operations. Looking carefully into the root cause of inefficiency can help the Indian pharmaceutical industry to sustain in highly competitive environment even under drug price control restrictions.

7. CONCLUSIONS

In today's competitive business environment, efficiency measurement is receiving increased attention from policy makers in all sectors of the economy. In this study, an attempt has been made to measure the operational efficiency of the Indian pharmaceutical industry using cross-sectional data of 193 pharmaceutical companies for the year 2015-16. We applied two widely used DEA models viz. CCR and BCC to calculate the best practice frontier and estimates of technical efficiency scores. Besides this, an attempt has also been made to provide an analysis of target setting for inefficient pharmaceutical companies. The empirical results indicate that overall technical efficiency (OTE) scores for the Indian pharmaceutical companies range from 0.1783 to 1, with mean value of 0.7574. It implies that on an average the companies in Indian pharmaceutical industry have the potential to decrease their inputs by about 24.26 percent to produce the same level of outputs as before.

The decomposition of the OTE scores into two mutually exclusive non-additive components viz. pure technical efficiency (PTE) and scale efficiency (SE) reveals that 18.76 percentage points of 24.26 percent of overall technical inefficiency (OTIE) as identified by CCR model are primarily attributed to managerial inefficiency. The PTE scores for the Indian pharmaceutical companies range from 0.2433 to 1, with mean value of 0.8124. Out of these 63 efficient pharmaceutical companies under BCC model, 52 companies have also been found to be relatively efficient under CCR

model with OTE score equal to 1 indicating that they are globally as well as locally technical efficient. For remaining 11 companies, it may be stated that OTIE in these companies is caused not due to managerial incapability to organize the resources in the production process but rather inappropriate choice of the scale size. For our analysis, it has been observed that SE scores range from a minimum of 0.4773 to a maximum of 1. The mean value of SE scores has turned out to be 0.8925 indicating that the average level of scale inefficiency (SIE) in the Indian pharmaceutical industry is about 10.75 percent. The lower mean and high standard deviation of PTE scores as compared to SE scores indicate that a greater portion of OTIE is due to PTIE. The given analysis shows that looking carefully into the root cause of inefficiency can help the Indian pharmaceutical industry to sustain in highly competitive environment even under drug price control restrictions

In sum, it can be clearly witnessed from the empirical results that there exists a substantial room for the improvement of technical efficiency in Indian pharmaceutical industry. Given the importance of this industry for the Indian economy, it is imperative that efforts should be taken to increase the efficiency of companies whose performance is sub-optimal. There is a need to take concrete steps to eliminate the managerial inefficiencies in the process of resource utilization. The regulatory policies need be improved, especially in the area of patent and price control, to boost the growth and create an impression as the destination for new generation pharmaceutical market.

REFERENCES

[1] Avkiran, N. K. (1999). An application reference for data envelopment analysis in branch banking: helping the novice researcher. *International Journal of Bank Marketing, 17*(5), 206-220.

[2] Banker, R. D., Charnes, A., & Cooper, W. W. (1984). Some models for estimating technical and scale inefficiencies in data envelopment analysis. *Management Science, 30*(9), 1078-1092.

[3] Bogetoft, P., & Otto, L. (2010). *Benchmarking with DEA, SFA, and R* (Vol. 157).Springer Science & Business Media.

[4] Bogetoft, P., & Otto, L. (2015). Benchmarking with DEA and SFA, R. *Package version 0.26*.

[5] Charnes, A., Cooper, W. W., & Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research, 2*(6), 429-444.

[6] Charnes, A., Cooper, W. W., Lewin, A. Y., & Seiford, L. M. (Eds.). (2013). *Data envelopment analysis: Theory, methodology, and applications.* Springer Science & Business Media.

[7] Coelli, T. J., Rao, D. S. P., O'Donnell, C. J., & Battese, G. E. (2005). *An introduction to efficiency and productivity analysis*. Springer Science & Business Media.

[8] Cooper, W. W., Seiford, L. M., & Tone, K. (2007). *Data Envelopment Analysis: A Comprehensive Text with Models, Applications, References and DEA-Solver Software.*Springer Science & Business Media.

[9] Debreu, G. (1951). The coefficient of resource utilization. *Econometrica: Journal of the Econometric Society, 19*(3), 273-292.

[10] Farrell, M. J. (1957). The measurement of productive efficiency. *Journal of the Royal Statistical Society. Series A (General), 120*(3), 253-290.

[11] González, E., &Gascón, F. (2004). Sources of productivity growth in the Spanish pharmaceutical industry (1994–2000). *Research Policy*, *33*(5), 735-745.

[12] Hashimoto, A., &Haneda, S. (2008). Measuring the change in R&D efficiency of the Japanese pharmaceutical industry. *Research Policy*, *37*(10), 1829-1836.

[13] IBEF.(2016). *Pharmaceuticals.*https://www.ibef.org/download/Pharmaceutical-March-2017.pdf (Accessed 18 July, 2017).

[14] Koopmans, T. C. (1951). *Activity analysis of production and allocation.* John Wiley & Sons, Inc.

[15] Kumar, S. (2011). State road transport undertakings in India: technical efficiency and its determinants. *Benchmarking: An International Journal, 18*(5), 616-643.

[16] Kumar, S., & Arora, N. (2012). Evaluation of technical efficiency in Indian sugar industry: an application of full cumulative data envelopment analysis. *Eurasian Journal of Business and Economics, 5*(9), 57-78.

[17] Mukherjee, K., & Ray, S. C. (2005). Technical efficiency and its dynamics in Indian manufacturing: an inter-state analysis. *Indian Economic Review, 40*(2), 101-125.

[18] Ogayon, J. A. (2014). Performance Evaluation of the Philippine Cement Industry: Application of DEA-MPI and VRSTE. *European Journal of Business and Management, 6*(28), 171-191.

[19] Ozcan, Y. A. (2008). *Health Care Benchmarking and Performance Evaluation: An Assessment using Data Envelopment Analysis (DEA)* .Springer Science & Business Media.

[20] Saranga, H., &Phani, B. V. (2004). The Indian Pharmaceutical Industry - An Overview of Internal Efficiencies using Data Envelopment Analysis. *SSRN*, 1-24. doi:10.2139/ssrn.544802

[21] Tripathy, I. G., Yadav, S. S., & Sharma, S. (2009). Measuring the Efficiency of Pharmaceutical Firms in India: An Application of Data Envelopment Analysis and Tobit Estimation. *Comparative Analysis of Enterprise Data (CAED)* (pp. 74-75). Tokyo: Hitotsubashi University.

[22] Wang, C. N., Chang, Y. L., Huang, Q. H., & Wang, C. H. (2011). Assessment on intellectual capital management for Taiwanese pharmaceutical industry: Using GRA and MPI. *African Journal of Business Management*, *5*(7), 2950-2958.

[23] Zhu, J. (2000). Multi-factor performance measure model with an application to Fortune 500 companies. *European Journal of Operational Research, 123*(1), 105-124.

[24] Zhu, J. (2014). *Quantitative models for performance evaluation and benchmarking: data envelopment analysis with spreadsheets* (Vol. 213). Springer.

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

CAMEL Analysis of RRBs Using Taxonomic Approach

Bhavanarayana Vedam

Phd, ICSSR Fellow (CESS), Center for Economic and Social Studies (CESS), Begumpet, Hyderabad
bnarayana.cess@gmail.com

Abstract: ***Since the adoption of financial sector reforms in response to the economic crisis in the latter half of the nineties, banks in India have been subjected to spate of dynamic regulatory standards of global financial resilience in order to enable them to operate in an increasingly competitive market environment. These include prudential norms on capital adequacy and NPA provisioning as also (of late) bank mergers, ostensibly to bolster their financial viability and efficiency. The paper enquires into the contemporary wisdom of 'Bank-mergers in the context of the amalgamation of RRBs as the policy response in regard to their impact on financial inclusion at large. It endeavors to develop a financial efficiency-cum inclusion index in order to analyze the impact of amalgamation of RRBs on Financial Efficiency and financial inclusion. It finds that the impact on the RRB amalgamation on financial efficiency has been largely 'modest' in the post-amalgamation period, and largely at the expense of their erstwhile mandate of being the 'engine of financial inclusion'.***

Keywords: ***Rural credit, Institutional Reforms, Bank regulation & supervision, CAMELs, RRBs, Amalgamation, Financial Inclusion, Taxonomic methodology***

1. INTRODUCTION

The onset of financial sector reforms in response to the economic crisis during the early-1990s led to a spate of changes in policy, regulation and practices in the banking sector as well. These changes cumulatively phrased as the "second phase of economic reforms" or 'banking sector reforms' in the latter half of the nineties, were intended to equip banks on certain regulatory standards of global financial resilience, thereby withstand & operate in an increasingly competitive environment. Contemporary regulatory wisdom on the imperative towards adoption of regulatory standards aimed at enhancing banking systems and procedures to international standards and also simultaneously fortifying their financial positions (Toor 2006[1]).

Despite the general approach of the financial sector reform process to establish regulatory convergence among institutions involved in broadly similar activities, given the large systemic implications of the commercial bank intermediation, many of the regulatory and supervisory norms were initiated first for commercial banks and were later extended to other types of financial intermediaries (Mohan, 2005). Also given the preponderant presence and role of banking in general; on economic activity and the important role of state-owned banks in the economy (i.e. capital formation), banks have been under regulatory focus more than any other type of economic unit in the economy.

The structure of the paper is as follows: The section following the introduction or section 2, describes the evolution of institutional reforms in rural credit. This is followed by a brief review on the evolution of consolidation of RRBs as pertaining to the united state of Andhra Pradesh in section 3. Section 4provides an in depth treatment of the taxonomic method for computation of standardized index scores for appropriate comparisons. Methodology and analysis of the sample data have been elaborated in section 4, followed by results and conclusion in Section 5, the final section.

2. INSTITUTIONAL REFORMS IN RURAL CREDIT, SUPERVISION OF RRBS, CONSOLIDATION

The multi-agency[2] approach in rural credit has been highlighted as the policy response from the early 1970s to the difficulties faced by rural areas in accessing financial services. Bank nationalization in the 1970s while bringing in the social mandate; courtesy the public ownership did not result in the kind of penetration required for access of financial services in the rural areas. The economic liberalization of the 1990s instead sounded the death knell for 'social and development banking' in praxis during the earlier decades-with its focus on moving towards "standards of international best practices in prudential regulation and supervision" in the wake of financial liberalization on an across-the-board basis.

[1] *Toor (2006), 'Handbook of Banking Information', Skylark Publications pg. 1.2*

[2] *By the end of the 1970s, the rural finance architecture in India-comprised of three different institutions for providing rural credit-which is often described as the "multi-agency approach". These include the scheduled commercial banks (both public and private), the 3-tiered cooperative bank structure and the Regional Rural Banks or the RRBs (Srinivasan, State of Rural Finance in India, pg.4)*

Despite the general approach of the financial sector reform process to establish regulatory convergence among institutions involved in broadly similar activities, given the large systemic implications of the commercial banks, many of the regulatory and supervisory norms that were initiated first for commercial banks, had been later indiscriminately extended to rural financial institutions including the RRBs as well.

These interalia comprised of regulations pertaining to capital adequacy, prudential and supervision norms that were applied equally to all banks, regardless of their ownership and mandates expected of them (Mohan, 2005). In the case of the RRBs also, reforms largely followed the pattern as that of commercial banks irrespective of their role in rural institutional finance, their special status in regard to the social mandates expected of them and the different set of policies hitherto governing them. By 2003-04, as a result of such reform measures large scale effects of rural disintermediation in the form of rampant agrarian distress and stagnation of the rural economy became discernibly evident.

Notwithstanding the above, various committees set up to look into the issue of restructuring of the RRBs have inordinately stressed upon the issues of 'ownership and capital adequacy' in the wake of persistent rise in the NPA levels-almost to the exclusion of institutional[3] dimensions of their rural credit activity (Velayudham and Sankaranarayanan, 1990; RBI, 1997; Thorat, 2001; Ruthven et.al, 2003; Bose, 2005; Satish, 2004, 2007; Vasam, 2008; Srinivasan, 2016). The amalgamation of the RRBs that followed ended up being the 'soft policy response' to address the pressing need of enhancing viability and profitability.

3. CONSOLIDATION OF THE RRBS

So far there have been two broad phases in the amalgamation of the RRBs in the country. In the first phase (September 2005-March 2010), RRBs of the 'same sponsor' banks 'within the state' were amalgamated bringing down their number to 82 from 196. The second and ongoing phase, starting from October 2012, geographically contiguous RRBs 'within a state' under 'different sponsor banks' would be amalgamated to have just one RRB in medium-sized states and two/three RRBs in large states (Srinivasan, 2016). In the recent phase of consolidation which began in October 2012, by merger of RRBs across sponsor banks within a State, the number[4] of RRBs has further reduced to 64 as on March 2013 with over 17,856 branches in 635 districts notified in 26 states.

In the united state of Andhra Pradesh [5], as on end March 2003, there were 16 RRBs which, later under a two-stage process of amalgamation were reduced in number to 8 RRBs as on end March 2006, and later were further reduced subsequently to 5 RRBs as on end March 2007. The number of RRBs as regards the united state of AP has remained at 5 RRBs since then. **Table 1** below shows the details regarding the number of RRBs merged at different stages in the above period.

TABLE 1: Evolution of AP RRBs: 1999-2011 (Across the period of Amalgamation)

	AS ON MARCH				
	2003		**2006**		**2007**
S.No	Name of the RRB	S.no	Name of the rrb	S.No	NAME OF THE RRB
1	Nagarjuna GB	1	APGVB	1	APGVB
2	Sri Visakha GB				
3	Sangameshwra GB				
4	Manjira GB				
5	Kakathiya GB				
6	Chaitanya GB	2	CGGB	2	CGGB
7	Godavari GB				
8	Sri saraswathi GB	3	TGB	3	TGB
9	Sathavahana GB				
10	Golconda GB				
11	Srirama GB				
12	Kanakadugra GB	4	Kanakadurga GB	4	SAPTAGIRI
13	Shri Venketeshwara GB	5	Shri Venketeshwara GB		
14	Pinakini GB	6	Pinakini GB	5	APGB
15	Rayalseema GB	7	Rayalaseema GB		
16	Sree Anantha GB	8	Sree Anantha GB		

Source: NABARD documents

4. DEVISING INDEX USING TAXONOMIC METHODOLOGY APPROACH[6]:

The **taxonomic method**[7], which was designed by a group of Polish mathematicians in 1952, enables the determination of homogeneous units in an n-dimensional space without having to employ statistical tools such as regression and variance. It

[3]For details on the institutional dimensions of RRBs, see Thorat (2001)
[4]The number of RRBs now stands further reduced to 56 by virtue of further consolidation since then.
[5]The number of RRBs since the amalgamation in 2005 and 2006 have remained at 5; and continued since then despite the creation of the separate state of Telangana from the united state of Andhra Pradesh in mid-2014.
[6]The author is deeply grateful to Dr. Shaveta Kohli, Assistant Professor, Central University of Jammu for having introduced the above taxonomic methodology in regard to the analysis of the data for the study.
[7]For details on Index computation using the Taxonomic approach see Srimanta Mohanty (1999), 'Regional Analysis of Human Development in Canada'

was recommended in 1968 to the United Nation's Educational Scientific and Cultural Organization (U.N.E.S.C.O) as a tool for ranking, classifying and comparing countries by levels of development. More recently, the method has been applied successfully to measure the levels of development of developing and developed countries. This method is chosen because it is suited for ranking, comparing and classifying regions of a country by levels of development, standard of living, status or any other such aspect.

Also this method is free from choice of weights as weights are built in the system itself. It may be noted that the 'taxonomic method' does not place any limit on the number of indicators to be selected and used. This study is a useful tool in identifying indicators or spatial imbalances in development with the view of setting up targets in allocation of scarce resources (Mohanty, 1999).

5. ANALYSIS OF SAMPLE DATA

The methodology adopted regarding our objective of analyzing the performance of RRBs of united AP for the period of our study (1999-2011) across the period of amalgamation is as follows:- The sample data of regional rural banks (henceforth, RRBs) of the state of united Andhra Pradesh (AP) comprised of data for a period of 11 years (1999-2011). As part of sample data, a select range of proxy variable measures under each of the five CAMEL indicators; along with the sixth 'Inclusion' indicator have been considered for the study. **Annexure-1** exposits on list of various proxy variables considered for each of the six parameters including the 'Inclusion' parameter under the CAMEL-I framework for the study. Under the study objective regarding evaluation of AP RRBs in regard to financial efficiency and inclusion, across the period of their amalgamation; sample period was considered as a whole of two sub-periods viz. the pre-merger period of 5 years (1999-2003) and the post-merger period of 6 years (2006-2011).

Step 1:

Initially year wise index scores for each of the five CAMEL parameters and the Inclusion parameter were computed using the annual data on the respective proxy variables for each of the six CAMEL-I parameters for all the 16 RRBs for the pre-merger period (1999-2003) and later using the same proxy variables for all 5 merged RRBs for the post merger period (2006-2011). These parameter-wise index scores for all the 11 years were computed using the Taxonomic methodology described in the earlier sections of this chapter. The advantage of the Taxonomic methodology lies in the fact that it provides normalized indices values for each CAMEL parameter and the 'Inclusion' parameter using its proxy variables notwithstanding the fact that the each of the proxy variables are of different units / denominations.

Step 2:

Once the year-wise normalized indices for all the six parameters (i.e. five CAMEL parameters and the 'Inclusion' parameter) are obtained for each of the 16 RRBs for the sub-period 1 (or the pre-merger period), we compute a year-wise composite weighted CAMEL score using differential weights under the "Modified CAMEL APPROACH[8]" for the pre-merger period as in Table 2A.

The weights chosen for computing the composite CAMEL score is based on the relative order of significance among the five CAMEL parameters as considered under standard norms of bank resilience and long run viability. The details of the differential weights chosen to compute the composite CAMEL score is given in Table 3 ahead in the chapter. The adjoining columns to each year-wise weighted CAMEL scores (abbreviated as CWS in the table) in Table 2A provide the ranks for the same scores.

Observation

Notice that the last two columns in bold of Table 2A provide the composite CAMEL weight scores for all the 16 RRBs and its relative ranking for the year 2003. A close look at the scores along the CWS _03 column reveals that out of the 16 RRBs; about 9 RRBs registered a composite score of close to 0.5 and above, while the other RRBs had a composite score of 0.4 or less.

It may be noted that these scores are normalized and lie in the range of 0-1 which implies that most operational RRBs in the year 2003 had a CAMEL efficiency of about 50 percent. This implied that most of the RRBs have been able to realize their CAMEL efficiency to close to 50 percent by 2003 prior to the amalgamation itself.

Step 3: Once the year-wise composite weighted CAMEL score using differential weights under the "Modified CAMEL APPROACH" for the pre-merger period (1999-2003) is obtained, we consider the Trend Average of the composite weighted CAMEL score to get one single CAMEL value for the entire pre-merger period for all the 16 RRBs. At the same time, in order to compare the performance of the 16 RRBs over the period (1999-2003), we also compute the rank

[8] *The Modified CAMEL technique used has been adopted from Sri Harsha (2012) and is based on the use of weights for computing the composite CAMEL score.*

differences using the CAMEL values of 1999 and 2003 for the sample data (Table 2B).

Observation:

A close comparison of the composite weighted CAMEL values for the years 1999 and 2003 reveals the following:- The rank differences column from the Table 2B clearly shows that of all the 16 RRBs only 6 RRBs show distinctive positive rank differences which implies a clear improvement in their relative CAMEL standings over the period. Of these 6 RRBs, 2 RRBs (viz. Sri Visakha GB, and Godavari GB) registered a significant improvement in their CAMEL performance while other 4 RRBs (Chaitanya GB[9], Pinakini GB, Sri Venkateswara GB and Golconda GB) indicate a marginal improvement in their CAMEL performances.

Most of the other 10 RRBs either remained stagnant (with a rank difference of zero) or deteriorated (as indicated by their negative rank difference scores) during this period. As already observed earlier, in absolute terms; most of the RRBs for the year 2003 had a CAMEL efficiency score of 0.4 (or about 40 percent) which was only marginally better than at 0.31 (or about 31 percent) in 1999. This is despite the indiscriminate extension of prudential regulatory and supervisory norms to the RRBs with the explicit intent to ensure "better and robust" standards of banking operation in a fast liberalizing environment.

Table 2B also provides the Trend Average of CAMEL scores and the adjoining ranks column gives its relative efficiency standings for the entire pre-merger period. Further, many RRBs had achieved better results by moving away from their mission of serving the poor—either by putting their money into investments rather than lending it, or by lending to non-poor clients as manifested by the persistent increase in loan size and bias against women borrowers (Thorat 2001[10]). This period also witnessed a rise in dependence of rural poor on informal credit (Satish, 2007; Srinivasan 2016). Such a persistent retreat by the RRBs during the latter half of the 90s and for a major part of the 2000s decade seemingly have defeated the central objective of rural development policy to 'deepen and widen' financial access to historically excluded communities.

Step 4:

Recall that as mentioned in Step 1, we compute year wise normalized Indices for the 'Inclusion' parameter using the annual data on its respective proxy variables for all the 16 RRBs for the pre-merger period (1999-2003) (Table 3A). Notice that the last two columns in bold of Table 3A provide the 'Inclusion' index scores for all the 16 RRBs and its relative ranking for the year 2003.

Observation:

A fair look at the scores in the column Incl. Index value for the year 2003 (i.e. Incl. IV _03) reveals that out of the 16 RRBs; barring about one RRB (which had an 'Inclusion' efficiency score of over 0.5) most of other RRBs had an average score of 0.30 while one of RRBs (i.e. Sri Saraswathi GB) even registered negative 'inclusion' efficiency values as well. Considering that these scores are normalized and lie in the range of 0-1 one finds that average inclusion efficiency of RRBs in the year 2003 was about 0.25 (or about 25 percent)

Step 5:

Next we consider the Trend Average of the Inclusion score to get one single Inclusion value for the entire pre-merger period for all the 16 RRBs. At the same time, in order to compare the performance of the 16 RRBs in regard to the 'Inclusion' parameter over this period, we also compute the rank differences using the 'Inclusion' values of 1999 and 2003 for the sample data (Table 3B).

Observation:

A close comparison of the 'Inclusion' values for the years 1999 and 2003 reveals the following:- The rank differences column from the Table 3B clearly shows that of all the 16 RRBs only 7 RRBs show distinctive positive rank differences which implies a clear improvement in their relative 'Inclusion' standings over the period. Of these 7 RRBs, 3 RRBs (viz. Chaitanya GB, Godavari GB and Sri Anantha GB) registered a significant improvement in their 'Inclusion' performance while other 4 RRBs (Nagarjuna GB, Sri Vishaka GB, Manjira GB, and Kanakadurga GB) indicate a marginal improvement in their 'Inclusion' performances as evident from their relative rank standings. All of the other 9 RRBs deteriorated (as indicated by their negative rank difference scores) during this period.

As already observed earlier, in absolute terms; most of the RRBs for the year 2003 had an average 'Inclusion' efficiency score of 0.25 (or about 25 percent) which was worse than at 0.31 (or about 31 percent) in 1999. This clearly illustrates that impact of prudential regulation did not improve the lot of RRBs in regard to financial viability in terms of their CAMEL scores on the one hand, but certainly led to worsening of their absolute performances in regard to 'Inclusion' during the same period. Table 3B also provides the Trend Average of 'Inclusion' scores and the adjoining ranks column gives its relative efficiency standings for the entire pre-merger period.

[9] *GB stands for Grameen Bank.*

[10] *See Thorat, Bhatt (2001), 'India's Regional Rural Banks-The Institutional Dimension of Reforms, pg.66, Vol 3.*

TABLE 2A: Pre-Merger Year-wise CAMEL Weighted Score-& Ranks (1999-2003)

S. No	Name of the RRB	[11]CWS _ 99	RK_99	CWS_00	RK_00	CWS_01	RK_01	CWS _02	RK_02	CWS _03	RK _03
1.	Nagarjuna GB_99	0.241	12	0.262	12	0.285	14	0.351	14	0.385	**13**
2.	RayalaSeema GB	0.474	1	0.390	6	0.679	1	0.707	1	**0.642**	**1**
3.	Sri Visakha GB	0.202	15	0.245	15	0.469	10	0.579	6	**0.530**	**6**
4.	Sri Anantha GB	0.462	2	0.406	5	0.561	5	0.638	3	**0.617**	**3**
5.	Sree Venkateswara GB	0.327	10	0.326	9	0.596	2	0.533	10	**0.493**	**8**
6.	Sri Saraswathi GB	0.354	6	0.314	10	0.416	11	0.564	8	**0.476**	**9**
7.	Sangameswara GB	0.350	7	0.442	3	0.591	3	0.647	2	0.438	**12**
8.	Manjira GB	0.443	3	0.465	2	0.527	6	0.558	9	0.328	**14**
9.	Pinakini GB	0.406	5	0.412	4	0.525	7	0.475	11	**0.636**	**2**
10.	Kakatiya GB	0.230	14	0.218	16	0.357	13	0.033	16	0.065	**16**
11.	Chaitanya GB	0.338	9	0.278	11	0.502	8	0.627	4	**0.538**	**5**
12.	ShriSaathavahana GB	0.321	11	0.254	14	0.239	16	0.309	15	0.174	**15**
13.	Golconda GB	0.236	13	0.475	1	0.582	4	0.611	5	0.465	**10**
14.	Srirama GB	0.407	4	0.327	8	0.469	9	0.573	7	**0.495**	**7**
15.	Kanakadurga GB	0.341	8	0.345	7	0.381	12	0.455	12	0.442	**11**
16.	Godavari GB	0.185	16	0.260	13	0.249	15	0.432	13	**0.584**	**4**

TABLE 2B: Pre-Merger CAMEL Weighted Score-& Ranks & Rank Differences (1999 and 2003 only) with Trend Average (TA) (1999-2003)

S. No	Name of the RRB	*CWS_99	RK_ 99	CWS _03	RK _03	#RK_ DIFF	**CWS_TA	CWS TA_RK
1.	Nagarjuna GB_99	0.241	12	0.385	13	**-1**	0.305	14
2.	RayalaSeema GB	0.474	1	0.642	1	**0**	0.578	1
3.	**Sri Visakha GB**	0.202	15	0.530	6	**9**	0.405	11
4.	Sri Anantha GB	0.462	2	0.617	3	**-1**	0.537	2
5.	Sree Venkateswara GB	0.327	10	0.493	8	**2**	0.455	8
6.	Sri Saraswathi GB	0.354	6	0.476	9	**-3**	0.425	10
7.	Sangameswara GB	0.350	7	0.438	12	**-5**	0.494	3
8.	Manjira GB	0.443	3	0.328	14	**-11**	0.464	6
9.	Pinakini GB	0.406	5	0.636	2	**3**	0.491	4
10.	Kakatiya GB	0.230	14	0.065	16	**-2**	0.181	16
11.	**Chaitanya GB**	0.338	9	0.538	5	**4**	0.457	7
12.	ShriSaathavahana GB	0.321	11	0.174	15	**-4**	0.259	15
13.	**Golconda GB**	0.236	13	0.465	10	**3**	0.474	5
14.	Srirama GB	0.407	4	0.495	7	**-3**	0.454	9
15.	Kanakadurga GB	0.341	8	0.442	11	**-3**	0.393	12
16.	**Godavari GB**	0.185	16	0.584	4	**12**	0.342	13

*CWS_99 and CWS_03 -implies composite CAMEL weight scores for 1999 and 2003. Here RK_99 and RK_03 provide the ranks for the CAMEL scores for year 1999 and 2003 in the descending order. #RK_DIFF- is for rank differences, and **CWS_TrendAvg stands for trend average of weighted CAMEL score for the entire period 1999-2003.. RK CWS_Trend gives the ranks for the values of the column CWS_Trend Avg.

[11] *CWTS_99-implies composite CAMEL weight scores for 1999 and so on for other years as well. RK_99 implies that ranks for the year 1999 which are in the descending order and so on for similar years as well.*

TABLE 3A: Pre-Merger Year-wise Inclusion Score-& Ranks (1999-2003)

S No	Name of the RRB	*Incl IV_ 99	**RK_99	Incl IV_ 00	RK_00	Incl_ IV_ 01	RK_0 1	Incl_ IV_ 2002	RK 02	Incl_ IV_ 03	RK 03
1	Nagarjuna GB	0.259	14	0.305	9	0.223	7	0.339	6	**0.206**	**10**
2	Rayalaseema GB	0.261	11	0.318	8	0.208	9	0.208	15	**0.185**	**14**
3	Sri Visakha GB	0.256	15	0.195	13	0.168	12	0.262	9	**0.200**	**11**
4	Sri Anantha GB	0.244	16	0.239	11	0.215	8	0.254	10	**0.281**	**7**
5	Sree Venkateswara GB	0.261	9	0.248	10	0.164	13	0.278	8	**0.193**	**12**
6	Sri Saraswathi GB	0.259	13	0.073	15	0.001	16	-0.119	16	**-0.022**	**16**
7	Sangameswara GB	0.269	3	0.405	3	0.303	5	0.352	5	**0.310**	**6**
8	Manjira GB	0.266	6	0.385	5	0.312	4	0.233	12	**0.336**	**4**
9	Pinakini GB	0.269	4	0.430	2	0.186	11	0.243	11	**0.079**	**15**
10	Kakatiya GB	0.265	7	0.352	7	0.287	6	0.360	4	**0.259**	**8**
11	Chaitanya GB	0.260	12	0.397	4	0.207	10	0.443	3	**0.377**	**2**
12	ShriSaathavahana GB	0.861	1	0.230	12	0.145	14	0.225	13	**0.226**	**9**
13	Golconda GB	0.261	10	0.150	14	0.109	15	0.217	14	**0.187**	**13**
14	Srirama GB	0.272	2	0.595	1	0.479	1	0.469	2	**0.335**	**5**
15	Kanakadurga GB	0.268	5	0.374	6	0.338	3	0.282	7	**0.344**	**3**
16	Godavari GB	0.264	8	0.004	16	0.408	2	0.504	1	**0.519**	**1**

**Incl_IV_99-implies Inclusion Index value for 1999 and so on for different years.*
***RK_99 gives the ranks for the values of the column Incl_IV_99. Here the ranks are in the descending order.*

TABLE 3B: Pre-Merger Inclusion Scores, Ranks & Rank Differences (1999 and 2003 only) with Trend Average (TA) (1999-2003)

S No	Name of the RRB	*Incl IV_ 99	RK_ 99	INCL _03	RK _03	#RK_ DIFF	**INCLTA	INCL_ TA _ RK
1	**Nagarjuna GB_99**	0.259	14	0.206	10	**4**	0.266	9
2	RayalaSeema GB	0.261	11	0.185	14	**-3**	0.236	12
3	**Sri Visakha GB**	0.256	15	0.200	11	**4**	0.216	14
4	**Sri Anantha GB**	0.244	16	0.281	7	**9**	0.246	10
5	Sree Venkateswara GB	0.261	9	0.193	12	**-3**	0.229	13
6	Sri Saraswathi GB	0.259	13	-0.022	16	**-3**	0.039	16
7	Sangameswara GB	0.269	3	0.310	6	**-3**	0.328	5
8	Manjira GB	0.266	6	0.336	4	**2**	0.306	7
9	Pinakini GB	0.269	4	0.079	15	**-11**	0.242	11
10	Kakatiya GB	0.265	7	0.259	8	**-1**	0.305	8
11	**Chaitanya GB**	0.260	12	0.377	2	**10**	0.337	4
12	ShriSaathavahana GB	0.861	1	0.226	9	**-8**	0.337	3
13	Golconda GB	0.261	10	0.187	13	**-3**	0.185	15
14	Srirama GB	0.272	2	0.335	5	**-3**	0.430	1
15	**Kanakadurga GB**	0.268	5	0.344	3	**2**	0.321	6
16	**Godavari GB**	0.264	8	0.519	1	**7**	0.340	2

* Incl_IV_99-implies Inclusion scores for 1999 and so on. #RK_DIFF- is for rank differences, and
**INCL Trend Avg stands for Trend Average Inclusion pre-merger score for the entire pre-merger period 1999-2003. INCL_ Avg_RK gives the ranks for the values of the column INCL_ AVG. Here the ranks are in the descending order.

Step 6: As mentioned in Step 3 after computing the composite weighted CAMEL score using differential weights under the "Modified CAMEL APPROACH" for the entire pre-merger period (1999-2003)- we compute the rank differences using the weighted CAMEL values of the sample data for 1999 and 2003 alone. This is done in order to compare the performance of the 16 RRBs over this period. Additionally we also compute a new measure termed the "Progress Ratio" which is nothing but the ratio between the 'composite weighted score (CWS) for CAMEL obtained by an RRB in 2003 to the score in 1999 (Table 4).

This method regarding computation of the composite CAMEL value using the "Modified Weighted CAMEL Ratio" approach and calculation of the Progress ratio has been adopted from previous [12] studies. Higher the Progress ratio implies-better the performance by the RRB over the period. Progress ratio (PR) indicates the relative performance of the RRB in a given year with reference to its performance in the base year (i.e. the base year for the pre-merger period under the study is 1999)
Progress ratio (PR) = CWS for CAMEL for a given RRB in 2003/ CWS for CAMEL for a given RRB in 1999

For the pre merger period (1999-2003), all the 16 RRBs are categorized into five categories of Very Bad (VB), Bad (B), Medium (M), Good (G) and Very Good (VG) based on their associated progress ratio (PR) performances. The criterion in regard to the five-fold classification of PR values of RRBs is as given in Table 4 below:

TABLE 4: Criteria for Relative Classification of PR values for RRBs

S. No	Classification Criteria Limits for PR values	Progress Category Description
1.	If the PR value is less than 'm-0.48s'	Very Bad Progression (VB)
2.	If the PR value is between 'm-0.48s' & 'm-0.18'	Bad Progression (VB)
3.	If the PR value is between 'm-0.18s' & 'm+0.18'	Medium Progression (M)
4.	If the PR value is between 'm+0.18s' & 'm+0.48'	Good Progression (G)
5.	If the PR value is greater than 'm+0.48s'	Very Good Progression (VG)

Using the above classification we reclassify all the 16 RRBs based on the computed PR values in terms of the 5-fold classification as given Table 5 below. The column adjacent to the PR values gives the Progress Category (PC) that categorizes each of the 16 RRBs based on their PR values. The last column of Table 5 indicates the name of the merged RRB adjacent to the group of RRBs that were amalgamated into it. This effectively illustrates the characteristics of all of the 16 RRBs in terms of their financial efficiency as proxied in terms of their CAMEL indices and the 'PR' values over the pre-merger period prior to their amalgamation.

Observation:

A closer and concurrent view of Table 5 especially the column on 'rank differences', Progress category (PC) and the combination / amalgamation of RRBs represented by the column 'Name of the merged RRB' entity reveals the following: Out of the total 16 RRBs, barring 6 RRBs (out of which one RRB had no rank difference); all the other RRBs recorded negative rank differences (i.e. RD column) which implies a deterioration in CAMEL performances in a relative sense over the period.

Given that the progress ratios reflect on the extant performance of the each RRB with regard to the base year (i.e. 1999) in an absolute sense; the columns of the PR values and category reveal the following: Here out of the 16 RRBs, (barring two RRBs); only 3 RRBs showed 'Very Good (VG)' progress; about seven RRBs showed 'Medium progress' while the others ended up in the 'Bad' or the 'Very Bad' categories. This clearly shows that the performance of the RRBs in the absolute sense had only marginally improved despite the various policy interventions and regulatory reforms undertaken (as discussed earlier) during this period.

6. ON THE AMALGAMATION OF THE RRBS

One of the major concerns during this period as pervasively highlighted under our study has been on the efficacy of the amalgamation process itself especially in regard to the two-fold criteria viz. firstly amalgamation about the 'same sponsor-bank-wise within each state' followed by the amalgamation about 'different sponsor-banks within each state' in an unseemly haste with the alleged intent to make them 'internally-viable" and externally competitive. Our results on Progress ratios show that unlike the ideal case where ceteris paribus, an amalgamation of a weak bank/RRB with strong bank/RRB is usually advocated for enhancement of institutional & organization muscle; one finds that the amalgamation process resulted in a concentration of all weak banks in one group (for e.g. APGVB, SGB and TGB) and strong banks in the others (viz. CGGB) (Table 5).

That the entire mechanism of amalgamation had remained a non-starter in its impact on institutional viability can be illustrated from the trend line graphs indicating the weighted CAMEL trends averages in pre-and post merger period (Figure 1 & 2). A graphical comparison of trend average values of the pre-merger period of the 5 merged RRBs

[12] *See Sriharsha (2012)*

(considering the original 16 RRBs to be merged into 5 RRBs), with the values for post merger period reveals the following:

7. TRENDS IN CAMEL SCORES (1999-2011)

A comparison of the year-wise trend average CAMEL scores across all RRBs for the pre-merger period and the post merger period reveals the following:

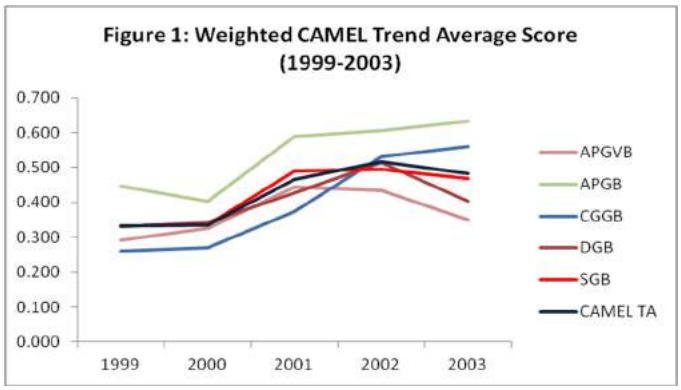
1. During the pre-merger period; one observes that the trend average of CAMEL score that had remained at about 0.3 (or 30 percent)-in 1999 and 2000; gradually reached its highest maximum of over 0.5 (i.e. over 50 percent) in 2002 (Figure 1).

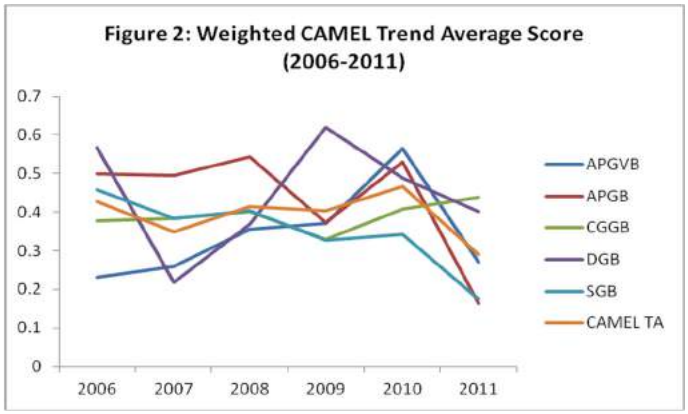
2. In the post-merger period, trend average of CAMEL score declined to about 0.4 (or 40 percent) by 2006, hovered about the same level till 2009 and later after a brief spurt in the year 2010, declined to its lowest value of less than 0.3 (30 percent) in 2011 (Figure 2).

TABLE 5: Comparison of Weighted Camel Score during 1999 & 2003

S.No	Name of the RRB	RD	CWS _99	RK_99	CWS _03	RK_ 03	PROG Ratio	[13]PC	Name of the Merged Bank
1	Nagarjuna GB_99	-1	0.241	12	0.385	13	1.60	M	APGVB
2	Sri Visakha GB	9	0.202	15	0.530	6	2.63	VG	
3	Sangameswara GB	-5	0.350	7	0.438	12	1.25	B	
4	Manjira GB	-11	0.443	3	0.328	14	0.74	VB	
5	Kakatiya GB	-2	0.230	14	0.065	16	0.28	VB	
6	Rayalaseema GB	0	0.474	1	0.642	1	1.35	M	APGB
7	Sri Anantha GB	-1	0.462	2	0.617	3	1.34	M	
8	Pinakini GB	3	0.406	5	0.636	2	1.57	M	
9	Chaitanya GB	4	0.338	9	0.538	5	1.59	M	CGGB
10	Godavari GB	12	0.185	16	0.584	4	3.16	VG	
11	Sri Saraswathi GB	-3	0.354	6	0.476	9	1.34	M	TGB
12	ShriSathavahana GB	-4	0.321	11	0.174	15	0.54	VB	
13	Golconda GB	3	0.236	13	0.465	10	1.97	VG	
14	Srirama GB	-3	0.407	4	0.495	7	1.22	B	
15	Kanakadurga GB	-3	0.341	8	0.442	11	1.30	B	SGB
16	Sree Venkateswara GB	-2	0.327	10	0.493	8	1.51	M	
	Min		0.185		0.065		0.280		
	Max		0.474		0.642		3.163		
	mean		0.332		0.457		1.462		
	Sd		0.092		0.159		0.707		
	m-0.48		-0.15				1.12		
	m-0.18		0.15				1.33		
	m+0.18		0.51				1.59		
	m+0.48		0.81				1.80		

[13]PC-stands for the Progress category column-classifies the 16 RRBs into 5 categories as into Very Bad (VB), Bad (B), Medium (M), Good (G) and Very Good (VG); This method regarding computation of the composite CAMEL value using the weighted approach and calculation of the Progress ratio has been adopted from Sri Harsha (2012) paper. CWS_99 implies CAMEL weighted score for the year 1999 and so on. RD implies Rank differences between rank scores for year 2003 (RK_03) and rank scores for year 1999





Trends in Inclusion scores (1999-2011): Similarly a year-wise trend average comparison on the 'Inclusion' index scores (obtained using the taxonomic methodology) followed by computation of 'Progress ratios' during 1999-03 reveals the following observations:

1. A comparison of the rank differences of the RRB in regard to their Inclusion performances for the years 1999 and 2003 alone indicates that out of a total of 16 RRBs, 9 RRBs registered negative values indicating a decline in rank positions in 2003 relative to that in 1999 (Table 6)

2. In fact the average Inclusion score across all the RRBs decreased from 0.3 (in 1999) to about 0.251 (in 2003). This effectively proves a worsening of inclusion efficiency had become a persistent trend during the pre-merger period itself independent of the amalgamation event itself. Incidentally the average CAMEL score across all the 16 RRBs had improved from 0.332 (in 1999) to 0.457 (in 2003) during the same period (Table 5). This effectively proves that the obsessive focus on commercial viability did marginally improve the overall financial resilience of the RRBs (in terms of their CAMEL scores) but led to a worsening on the 'Inclusion' front.

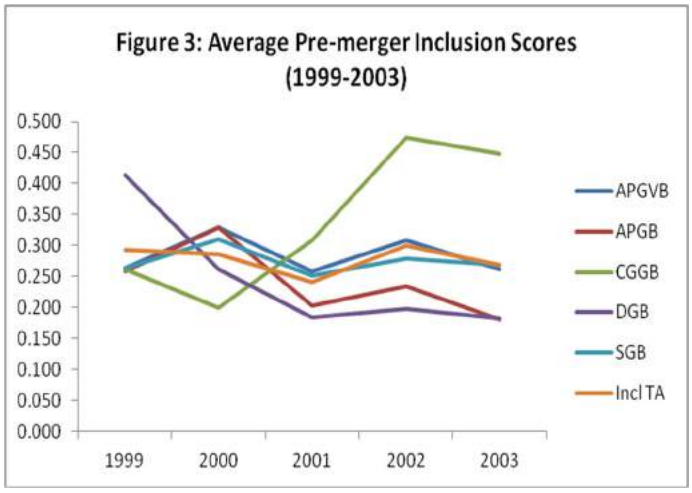
3. On the Inclusion Progress Ratios: The results of progress ratio (PR) values in regard to the 'Inclusion' as computed for the year 2003 considering the year 1999 as the base year reveal that about 9 of the total 16 RRBs had a PR value of less than 1 clearly indicating a worsened performance by the RRBs in regard to the 'Inclusion efficiency' in 2003 in comparison to their own inclusion levels realized in 1999 (Table 6).

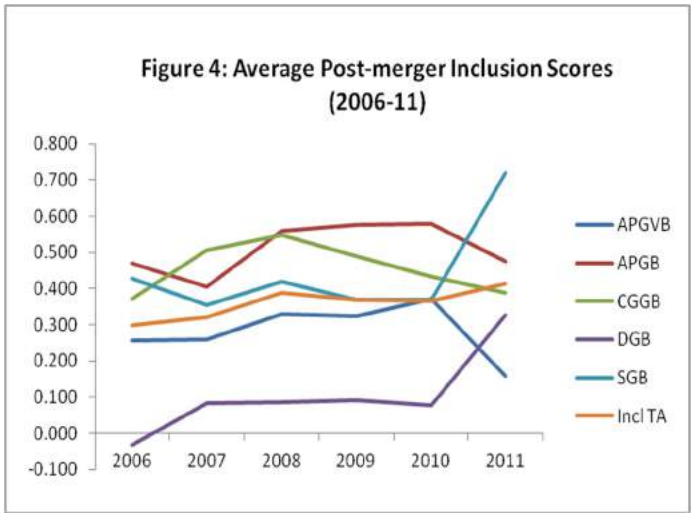
4. A comparison of the year-wise trend average Inclusion scores across all RRBs for the pre-merger period and the post merger period reveals the following-
   a. That the trend average of Inclusion score across all the RRBs had remained at about 0.3 (or 30 percent)- for the entire pre-merger period with minor fluctuations (Figure 3).
   b. Similarly in the post-merger period, trend average of Inclusion score that remained at about 0.3 (or 30 percent) till 2007, later marginally increased to reach an average score close to 0.4 (40 percent) for remaining period (Figure 4). The absolute values of RRB scores in regard to both 'CAMEL' and 'Inclusion' parameters for the post-merger period (2006-2011) have been provided under Annexure 2 and 3.

TABLE 6: Comparison of Inclusion Score during 1999 & 2003

S No	Name of the RRB	RD	Incl IV _99	RK_99	IV_03	RK_03	PR	Name of the Merged Bank	INCL Trend _AVG (99-03)
1	Nagarjuna GB_99	**4**	0.259	14	0.206	10	**0.795**	APGVB	0.266
2	Sri Visakha GB	**4**	0.256	15	0.200	11	**0.782**		0.216
3	Sangameswara GB	**-3**	0.269	3	0.310	6	**1.149**		0.328
4	Manjira GB	**2**	0.266	6	0.336	4	**1.264**		0.306

S No	Name of the RRB	RD	Incl IV _99	RK_99	IV_03	RK_03	PR	Name of the Merged Bank	INCL Trend _AVG (99-03)
5	Kakatiya GB	**-1**	0.265	7	0.259	8	**0.980**		0.305
6	Rayalaseema GB	**-3**	0.261	11	0.185	14	**0.711**	APGB	0.236
7	Sri Anantha GB	**9**	0.244	16	0.281	7	**1.149**		0.246
8	Pinakini GB	**-11**	0.269	4	0.079	15	**0.294**		0.242
9	Chaitanya GB	**10**	0.260	12	0.377	2	**1.450**	CGGB	0.337
10	Godavari GB	**7**	0.264	8	0.519	1	**1.966**		0.340
11	Sri Saraswathi GB	**-3**	0.259	13	-0.022	16	**-0.083**	TGB	0.039
12	ShriSaathavahana GB	**-8**	0.861	1	0.226	9	**0.262**		0.337
13	Golconda GB	**-3**	0.261	10	0.187	13	**0.718**		0.185
14	Srirama GB	**-3**	0.272	2	0.335	5	**1.233**		0.430
15	Kanakadurga GB	**2**	0.268	5	0.344	3	**1.286**	SGB	0.321
16	Sree Venkateswara GB	**-3**	0.261	9	0.193	12	**0.737**		0.229
	Mean	**4**	0.300		0.251				0.273





8. RESULTS

In the regard to our study objective 'Impact of Amalgamation of RRBs on Financial Inclusion and Financial efficiency-we observe the following:

1. As regards financial efficiency proxied by the composite CAMEL performance index scores in the pre-merger period; most of the RRBs showed distinctive but marginal improvement in financial indicators by 2003, but simultaneously showed a significant decline in their inclusion scores, both in relative and the absolute terms during the same period (1999-2003).

2. This clearly illustrates that impact of prudential regulation did not significantly improve the lot of RRBs in regard to financial viability in terms of their CAMEL scores on the one hand, but certainly led to worsening of their absolute performances in regard to 'Inclusion' during the pre-merger period.

3. On the Amalgamation of RRBs: Given the pre-merger status of RRBs in terms of the scores on CAMEL and Inclusion indices and of amalgamation that followed, one finds that the amalgamation process resulted largely in a concentration of weak banks (for e.g. APGVB, SGB and TGB) and strong banks in the others (viz. CGGB) (Table 5). This has since affected the turnaround of the RRBs in the post merger period rendering the amalgamation exercise a non-starter as regards financial efficiency. The impact on inclusion has been largely neutral in the post-merger period given that the trend average inclusion scores marginally improved from close to 0.3 to 0.4 during the post amalgamation period.

ANNEXURE 1: LIST OF VARIABLES FOR VARIOUS CAMEL-I INDICATORS[14]

I. Capital Adequacy (4 Indicators)		
1.	Coverage Ratio	Tot Liabilities /(Tot G Assets)
	This gives the share of liabilities of a firm as percentage of its Gross Assets	
2.	Debt to Equity Ratio (DER)	Long Term Debt / Equity
	DER provides an indication of credit risk given that higher leveraged firm is more vulnerable to external shocks	
3.	Equity Multiplier (EM)	Total G. Assets / Equity
4.	Capitalization Ratio	Equity / (Loans + Invests)
II. Asset Quality (5 Indicators)		
5.	Total Gross Advances to G. Assets Ratio	Total Gross Advances / Total Gross Assets
6.	Total NPA to Tot Assets Ratio	T. NPA /T. Gross Assets
7.	Gross NPA to Gross Advances	Gross NPA/Gross Advances
8.	ROA (in percent)	Gross Profit / Total Gross Assets
----------where Gross Profit = Net Income		
9.	Total Gross Investments to Assets Ratio	Total Gross Investments / Gross Assets
III. Productivity or Management Efficiency (6 Indicators)		
10.	G. Profit Per Employee (GPE)	Total G.Profits or Net Income /Total Number of Employees
11.	Business Per Employee (BPE)	Total Business /Tot No Of Employees
12.	Business Per Branch (BPBr)	Total Business /Tot No Of Branches
	where Business = Total Deposits + Tot Advances	
13.	Wage to Total Expenses Ratio	Wages / Total Expenses
14.	Wage to Intermediation Costs or Total Costs	Wages / Total Costs
15.	Burden Efficiency Ratio (BER)	(Burden/Tot Income
	-- where Burden = (Non Interest Expense-Non Interest Income);	
	----where Total Income = Interest Income + Non Interest Income	
IV. EARNINGS (7 INDICATORS)		
16.	Operating Profit or Net Profit (in Rs.)	NII -T.Costs
17.	Operating Profit Margin (OPM) Percent	NII-T.Costs) / G.Assets *100
18.	Profitability Ratio	Spread Ratio-Burden Ratio
19.	Spread (Percent)	(Interest Earned-Interest Expense) / (Total Business)*100
	-where Business = Total Deposits + Total Advances;	
	-where NII= Net Interest Income = Interest Income – Interest expense	
	-Spread Ratio=(NII) / (Total Business)*100	
	and Burden Ratio =(Non Interest Income –Non Interest expense)/(Tot Business)*100	
20.	RoE (percent)	(Gross Profit / Equity)*100
	RoE-indicates the extent to which the earnings are available to cover the losses.	
	Here Gross Profit or Net Income = Total Income-Total Expense	
21.	ROI (percent)	(Gross Profit / Total Investments)*100
22.	Net Margin	[15]Gross Margin-TCR-RCR

[14] *Source: Toor (2006), Financial Sector Assessment: A Handbook (2006), et al.*

[15] *Gross margin = (Financial Return (FR)+Miscellaneous Income)/Total Gross Assets (in percent); Financial Return (FR) = Spread or Net Interest income /Total Gross Assets (in percent);*

23.	Cost to Income Ratio (CIR) percent	(Op. Expenses / Total Income)*100
V. LIQUIDITY (3 INDICATORS)		
24.	Cash Ratio (percent)	CASH/ TOT ASSETS
25.	Liquid Assets Ratio (%)	[16]LIQ ASSETs / TOT G.ASSETS
26.	Liquid Assets to Total Deposits Ratio (%)	LIQ ASSETs / TOT DEPOSITS
V. INCLUSION (13 INDICATORS)		
27.	Deposit Amount per Account (Rs. Lakh)	Total Deposits/Total Number of Accounts.
28.	Credit Amount per Account (Rs. Lakh)	Total Credits /Total Number of Accounts
29.	Credit to Deposit Ratio (CDR)	Total (Credit per branch/ Deposit per branch)
30.	Investment-Deposit Ratio (percent)	Total Investment per branch/ Total Deposit per branch
31.	Priority crop loans per a/c (Rs. Lakh)	Priority crop loans/ Total Number of Accounts
32.	Prior crop loan to Total Prior Adv (%)	Priority crop loans/ Total Prior Advances
33.	Prior Crop loan to Total Advance (%)	Priority crop loans/ Total Advances
34.	Prior Term Loans per Account Lakh	Prior Term Loans/ Total number of Accounts
35.	Prior Term Loans to Total Prior advances (%)	Prior Term Loans / Total Prior Advances
36.	Prior Term Loans to Total Advances (%)	Prior Term Loans / Total Advances
37.	Prior Amount per Account Rs. lakh	Prior Amount / Total number of Accounts
38.	Total Prior Advances-to-Tot Advances %	Prior Advances / Total Advances
39.	Total Advances to Total Liabilities_Ratio	Total Advances / Total liabilities

ANNEXURE 2: Post-Merger Year-wise Weighted CAMEL Score-(2006-2011)

S No	Name of the RRB	2006	2007	2008	2009	2010	2011	*CAMEL_ TA
1	APGVB	0.231	0.260	0.357	0.371	0.564	0.270	0.342
2	APGB	0.499	0.494	0.542	0.373	0.530	0.164	0.434
3	CGGB	0.378	0.384	0.401	0.330	0.409	0.439	0.390
4	DGB	0.568	0.219	0.368	0.620	0.488	0.402	0.444
5	SGB	0.459	0.384	0.403	0.327	0.343	0.174	0.348
	Mean	0.427	0.348	0.414	0.404	0.467	0.290	

*CAMEL_TA is the trend average of the weighted CAMEL scores for a given RRB from 2006-2011. The last row gives the average CAMEL score across all RRBs for the given year

ANNEXURE 3: Post-Merger Year-wise Inclusion Score-(2006-2011)

S No	Name of the RRB	2006	2007	2008	2009	2010	2011	#Incl_TA
1	APGVB	0.258	0.259	0.329	0.323	0.373	0.158	0.283
2	APGB	0.470	0.406	0.559	0.576	0.578	0.477	0.511
3	CGGB	0.373	0.505	0.549	0.490	0.433	0.387	0.456
4	DGB	-0.032	0.082	0.086	0.091	0.076	0.326	0.105
5	SGB	0.428	0.355	0.419	0.368	0.369	0.719	0.443
	Mean	0.299	0.321	0.388	0.370	0.366	0.414	

Incl_TA is the trend average of the Inclusion scores for a given RRB from 2006-2011. The last row gives the average CAMEL score across all RRBs for the given year

Transaction Cost Ratio (TCR)=(Transaction Cost-Provisions)/Total Gross Assets (in percent);
Risk Cost Ratio (RCR) = (Provisions & Contingencies)/ Total Gross Assets (in percent)

[16] *Liquid Assets = ST Investments-Balances with RBI*

REFERENCES

[1] Bhatt, N. and Y.S.P. Thorat, 2001. "India's Regional Rural Bank: The Institutional Dimension of Reforms", *Journal of Microfinance*, 3(1):65-88.

[2] Bose, Sukanya (2005): "Regional Rural Banks: The Past and the Present Debate", *Macro Scan*

[3] Mohan, R (2005) "Financial Sector Reforms in India" *EPW* Special Article March 19

[4] Reddy, Sriharsha (2012), 'Relative performance of Commercial Banks in India Using Camel Approach', *IJMR*

[5] Ruthven, O, Sinha. Sanjay, Tanmay Chetan and Pathak, N. (2003) 'The Outreach/Viability Conundrum: Can India's Regional Rural Banks Really Serve Low-Income Clients? *Working Paper 229*, London: Overseas Development Institute, UK.

[6] Satish (2007), 'Agricultural Credit in the Post-reform Era', *Economic & Political Weekly*

[7] Srimanta Mohanty (1999), 'Regional Analysis of Human Development in Canada'

[8] Srinivasan (2016), "State of Rural Finance in India: An Assessment", OUP, 2016.

[9] Toor (2006), 'Handbook of Banking Information', Skylark Publications pg. 1.2

[10] Vasam Anand Kumar (2008): 'Case for De-Amalgamation of Regional Rural Banks, *Economic and Political Weekly*, Special Article Oct Issue.

[11] Velayudham. T.K. & V Sankaranarayanan (1990) 'Regional Rural Banks and Rural Credit: Some Issues', *Economic and Political Weekly*, September, 22 Issue.

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

Value Versus Growth Stocks and the Value Premium: The Indian Experience (2012-2016)

Rajni

Research Scholar, Phd (Accounting and Finance), UBS, (Panjab University)
joshirajni.ubs@gmail.com

Abstract: ***The purpose of this paper was to extend previous research by empirically investigating whether the value premium exist in top 100 companies listed in Bombay Stock Exchange of India. As there are relatively few researches conducted for examining the performance of undervalued and overvalued securities classified as value and growth stocks, the study broadens the scope by providing empirical evidence of the value Premium in Indian Context.***

This study used the Exploratory Factor Analysis to find the determinants of stock returns and OLS Regression framework to find whether Earnings Growth Rate of the company explained the variation in E/P (Reverse of Price-Earnings Ratio) for the financial year 2012 to 2016.

The study showed results supporting to the previous results which says that value premium exist in the Indian market as in the year 2015-2016 the top performers were undervalued stocks. The regression results for the remaining years were found to be insignificant so no further analysis has been made for the subsequent years of analysis. The findings of this research provide empirical validity of use of E/P rate in identifying mispriced stocks in the Indian context. Undervalued stocks can provide better returns compared to overvalued stocks. The publicly available E/P rate possesses information content and warrants an investor's attention at the time of his portfolio formation or revision.

Keywords: Value Stock, Growth Stock, E/P Rate, P/E Rate, undervalued, overvalued.

1. INTRODUCTION

Does a value strategy outperform growth strategy has been a matter of empirical investigation for the last several years. One of the most controversial issues of discussion among researchers for many years is the superior performance of value stocks over growth stocks or glamour stocks which are in conflict with the previously championed hypothesis of Efficient Markets. Many academic researches provide conclusive evidence on this issue in different country contexts. As per the financial literature, the difference in return produced by these two investment strategies is the value premium. The fundamental analysts make strategies to earn premium.

"Buying low, selling high" is a popular phrase among the investing community. Similarly, various groups of investors employ growth/value investment strategies in an attempt to improve the performance of their portfolio of investments. The value stock was prominently supported by Benjamin Graham beginning in the 1930s, who is recognized as the father of fundamental security Analyst. Growth stock strategy was promoted by well known professional investor David L Babson and T RowePrice (1951). This paper intends to find the value premium in Indian context as few studies have been conducted by examining the performance of individual growth stocks and individual value stocks.

2. THEORETICAL BACKGROUND

From the existence of the stock exchange in 1602, investors try to outperform the market and to produce returns above average market returns. In Efficient Market hypothesis, it would not be possible to obtain superior returns as information is reflected in the stock prices immediately (Fama, 1970). This theory makes it impossible for investors to earn superior profit from buying and selling shares no matter what investment strategy investors apply. Various scholars revealed contradictory results on the efficient market theory and appointed towards inefficiency (Basu, 1977; Lakonishok et al, 1994, Chan & Lakonishok, 2004; Athanassakos, 2009; Rasul, 2013; Hoekjan, 2013; Saji & Harikumar, 2015; Folkinshte yn et al, 2016) in which it would provide investors the possibility to obtain higher capital gains and to acquire abnormal returns. Various techniques and strategies are applied by investors to achieve this superior gain (Chan & Lakonishok, 2004'Deb, 2012; Rasul, 2013; Hoekjan, 2013; Saji 2015; Folkinshteyn et al, 2016).

Allocation to the securities can be classified in many ways such as large cap, mid cap, technological, non-technological, cyclical, defensive, Value and Growth stocks. Value and Growth stocks are popular since decades. (Bourguignon & De Jong, 2003). Graham and Dodd (1934) were the first to make distinction between value and growth stocks (glamour stocks). The actual recognition to growth stock is given by (Price Jr.

Babson, 1951)value and growth stocks can be defined in different ways, while the simplest definition of value and growth stocks is: *value stocks* are those stocks that trade at low prices compared to the fundamentals of the listed company (e.g. EPS, , cash flow, book value, dividends) whereby *growth stocks* are those stocks that trade at high prices in relation to the fundamentals of the listed company (Basu 1977;Fama & French, 1993; 1998; Lakonishok et al, 1994; Deb, 2012;Rasul, 2013;Hoekjan,2013;Folkinshteyn et al, 2016)

The subject of value and growth stocks has beenextensively examined during the 1990's and 2000's. Various scholars, including Lakonishok et al (1994), Fama& French (1998; 2007), Bauman & Miller (1998) and Black & McMillian (2004; 2006);Rasul, 2013;Hoekjan,2013;Folkinshteyn et al, 2016, studied the subject of value and growth stocks in relation with return, risk, and overall performance. Results of these studies show that value stocks generate higher total returns in terms of accounting measures and risk adjusted measuresalso known as value premiumthan growth stocks in national as well as international markets. The reason behind this will be discussed in the literature review.

3. REVIEW OF LITERATURE

Firstly, in section 3.1, classification of stocks in financial markets will be reviewed and insights of why investor classifies stock are given. In section 3.2, what mechanisms were used to classify stocks as either growth stock or Value Stock is reviewed In section 3.3, the performance of value and growth stocks in various settings will be reviewed.

3.1. CLASSIFICATION OF STOCKS

In general, people consciously or unconsciously make classifications to provide better understanding of similar entities (Barberis&Shleifer, 2003). Categorization makes the problems of choice simpler and allows to process vast amounts of information reasonably efficiently (Mullainathan, 2000). This principle of classification also exists in the world of investing to get superior returns than average market returns also known as Style Investing (Graham & Dodd, 1934; Barberis&Shleifer, 2003). The motivation of investors to get involved in style investing is explained by Barberis&Shleifer (2003). Thestyle of investing approach shares common characteristics. These characteristics can be based on markets (large-cap securities), legal (government securities), or fundaments (commodities). Some style approaches have a permanent status (U.S. treasury securities) while others are of short duration (rail-road securities) In the stock market, various style investing approaches exists. Popular style categories include large-cap versus small-cap stocks and technology versus nontechnology stocks, value or growth stocks). The reason behind the popularity of these stock styles is the fact that value and growth act as an umbrella for other style investing approach. The style can further be classified as either value or growth. But what are value and growth stocks, why are they important and how can they be classified?

3.2. DEFINITION OF VALUE STOCK AND GROWTH STOCK

The concept of value investing was first explained by Benjamin Graham, who is commonly known as the 'Father of Value Investing'. According to him the stock market is only efficient in the long run and therefore an intelligent investor can benefit from overpriced or underpriced valuations in the market (Graham & Zweig, 2006). For this Graham preferred stocks with relatively low fundamentals (earnings, book value, cash flow, dividend etc) in relation to price and various other characteristics - all of which define the value of a stock. Thomas Rowe Price is known as the 'Father of Growth Investing'. His investment style can be described by a strong focus on well-managed firms operating in industries that are considered to show growth and strong expansions. He was interested in firms showing increased earnings, cash flows, book value, dividends, as they are expected to grow at a faster rate than the economy.

Value Stocks are defined in various studies in which the market price is relatively low in relation to EPS (Fama& French 1992; Basu 1997; Rasul, 2013;), Cash Flow per share (Fama & French 1992, Lakonishok, Shleifer & Vishny 1991), Book Value per Share (Fama & French 1992 Hoekjan, 2013; Folkinshteyn et al, 2016;), DPS (Blume 1980 & Rozeff 1984, Fama & French 1992).

Value stocks, according to Graham & Dodd (1934), arestocks whose price-to-earnings, price-to-book, and/or price-to-cash flow is/are low relative to the market average. This definition is shared by multiple scholars (Basu, 1977; Lakonishok et al, 1994; Fama & French, 1998; Bourguignon & De Jong, 2003; Chan & Lakonishok, 2004; Athanassakos, 2009; Hoekjan, 2013; Folkinshteyn et al, 2016). This definition is shared by multiple scholars (see e.g., Capaul et al, 1993; Lakonishok et al, 1994; Fama & French, 1998; Leladakis & Davidson, 2001; Bourguignon & De Jong, 2003; Chan & Lakonishok, 2004; Cahine, 2008; Athanassakos, 2009; Vorwerg, 2015; Hoekjan, 2013; Folkinshteyn et al, 2016).

Growth stocks are generally defined as those stocks that are trading at high prices relative towards a stocks' fundaments (e.g. earnings, book value, cash flow and dividends). (Graham & Dodd, 1934; Capaul et al, 1993; Fama & French, 1998; Leladakis & Davidson, 2001; Bourguignon & De Jong, 2003; Rasul, 2013; Hoekjan,2013; Folkinshteyn et al, 2016).

Basu (1977) and Campbell (1998) found Price to Earnings (P/E) ratio as a predictor of equity returns. Chan, Hamao & Lakonishok (1991) found that four financial variables – earnings yield, size, book to market ratio and cash flow yield – are significant in variation of stock returns. Lakonishok,

Shleifer & Vishny (1994) give evidence only for B/M effect. Leledakis and Davidson (2001) stand for the predictability of returns by ratios of sales to price and debt to equity. Athanassakos (2009) shows P/E ratio as a better predictor of average equity returns than Price to Book (P/B) ratio. Saji (2012) provides evidence on the significance of earnings growth and beta factor in predicting stock returns in market downturns. Sehgal and Tripathi (2007) examined value effect (better returns) in the Indian stock market, identified operating profitability, size and financial leverage as the three important sources of variations in stock returns in the country.

On reviewing the literature, it is evident that the academic community has consensus as to the significance of corporate performance in valuation of stock returns, but their findings indicating the underlying reasons for such performance are much conflicting. So this study, which investigates further evidence on this issue, deserves special significance.

Cahine (2008) argues that using only one multiple, to classify stocks, would not generate appropriate results. This was also acknowledged by Black & Fraser (2004).

3.3. PERFORMANCE OF VALUE VERSUS GROWTH STOCK IN DIFFERENT SETTINGS

3.3.1 International Markets

Capaul et al (1993) documents that global value stocks tend to outperform global growth stocks in U.S. a Europe and Japan and the US contributed the least which was 1.35% only whereas in the study of Fama, US contributed the maximum. This was also acknowledged by Harris & Marston (1994). The reason for this could be Capaul et al (1993) used only one multiple; Fama& French (1998) used various multiples to classify stocks.

Black & Fraser (2004) argued that the standard deviations, a measure of volatility, are significantly lower in the United States than compared to other countries such as Japan, Norway, and Spain. Similar results were found by Bauman et al (1998).Cahine (2008) found that value stocks generate higher returns than growth stocks in the Euro-markets. Surprisingly, undervalued value stocks, which are value stocks provided higher value premiums than growth stocks (.618 over .324 percent).

3.3.2 Developed Markets

Basu (1977) in his study for the period between 1956 and 1971 found U.S. stocks with low P/E tend to offer investors 7.0 percent higher returns than stocks with high PE.Athanassakos (2009) states the following; “Value investing works and can help investors beat benchmarks and achieve superior long term performance. He did his study in the Canadian Market.Chan &Lakonishok (2004) also contended that value stocks are likely to generate higher returns than growth stocks over a wide range of historical periods and market conditions.

Similar results were found by De Bondt & Thaler (1985); Leladakis& Davidson, 2001; Bourguignon & De Jong, 2003; Rasul, 2013; Hoekjan,2013; Folkinshteyn et al, 2016).

3.3.3. Emerging Markets

Fama & French (1998) also analyzed possible value premiums in emerging markets. From the 16 emerging markets observe, he found evidence of a value premium that was remarkably high (14.13 percent) compared to developed international markets. Chen & Zhang (1998) documented similar results when emerging markets in Asia were studied. This result could be because of volatility as emerging markets tend to be more volatile than developed markets.

Yen et al (2004), conducted his study in Singapore and found that although value stocks have the tendency to outperform growth stocks in Singapore between 1975 and 1997, the value premium was only significant for the first two years. Brown et al (2008) examined the Asian emerging markets and documented the existence of a value premium in Hong Kong (0.72 percent), Singapore (0.42 percent) and Korea (0.42 percent), but a value discount in Taiwan of 1.26 percent.

However contradictory results were found by Beneda (2002) documented that, on average, the long-term holding period returns, up to 18 years, on growth stocks are likely to produce higher returns that value stocks in the U.S.

3.3.4. Indian Market

Deb (2012) for the period of 1996 to 2011 value premium did exist in Indian stock market, premiums is visible for both absolute performance measures like average returns and buy and hold returns and risk adjusted performance measures like Jensen‘s Alpha, Treynor ratio, Sharpe‘s ratio and Fama measure.

Saji (2012) found empirical evidence in Indian context on the relative performance of value strategy using Price Earning (P/E) ratio during the period of market downturns. The empirical results of the study supported the implication of value strategy in wealth management during crisis times. Similar results were found by Chhaya (2015).

Saji & Harikumar (2015) conducted his study in 32 IT companies for the period of 2000–2010 listed in BSE and found undervalued stocks can produce betterreturns compared to overvalued stocks, and their success has been both persistentand impressive. It is the first study conducted in Indian context wherein the returns of individual undervalued and overvalued stocks were compared not the portfolios.

On reviewing the literature, it is obvious that the academic community has consensus on the outperformance of growth strategies by value strategies, but the underlying reasons for the performance are controversial. Most of the studies related to value premium are done by creating the portfolios; only few studies were done by finding the value premium in Indian context is done by examining the performance of individual and overvalued securities. So this study is conducted to find the answer of question, **does value premium exist in Indian market by examining the performance of individual securities classified as value stock and growth stock.**

Need and Significance of the Study:

Unlike most prior studies, which focus on the value premium on portfolio basis, this study focuses on it at the individual stock level. Only few studies have done in Indian Context (Saji&Harikumar,2012). This definitely makes the investors more familiar with the firm-specific characteristics, which will lead to better stock valuation in market conditions.

4. DATA AND METHODOLOGY

From the research design perspective, the present study is related to a study by Harikumarand Saji (2015).The study involved a two-step empirical procedure: an exploratory factor analysis (EFA) and a regression modeling under ordinary least square (OLS) method. The present study aims to cover a period of 5 years from FY 2011-12to FY 2015-16. The Top 100 Indian companies based on Market capitalization listed on Bombay Stock Exchange comprises the universe of the study. It is collectively known as the S&P BSE100 Index.

4.1. Sample Frame

All the financial firms were also excluded e.g. Banking and Insurance companies because they are governed by regulations specific to their industries. Thus the total sample came out to be 75companies. Out of them only 54 companies were considered, the stock of which had been continuously traded in the stock market during the period of study. The required data was collected from the PROWESS database maintained by the Centre for Monitoring Indian Economy (CMIE).

4.2. Data Analytical Tools

4.2.1. Exploratory Factor Analysis:

To determine the potential predictor of stock returns, 12 exploratory financial variables were taken. The variables included are EPS, Earnings growth, Return on Equity (ROE), Returnon Capital Employed (ROCE), Debt to Equity ratio, Beta (market risk premium), Earnings Price (E/P) rateor Earnings yield, Book Value per share (BV), Price to Book value ratio (P/B), Market Capitalization (MC), Dividend yield and Average Stock Return (AR).

4.2.2. Regression Analysis:

The variables used to examine the impact of expected earnings growth rate on E/P rate.

S. NO.	Type of variable	Measuring the Variables	Reference studies
1	INDEPENDENT VARIABLE Expected earnings growth	**Arithmetic mean of the last five years** (including the year of estimation) earnings growth rate	Harikumar and Saji (2015)
2	DEPENDENT VARIABLE Expected E/P Rate	Earnings/ Market Price	Harikumar and Saji (2015)

5. DATA ANALYSIS AND FINDINGS

5.1. Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) was applied to investigate the dimensions that would have caused correlations among the observed fundamental variables of the company. To identify the critical factors, factor extraction method of Principal Component Analysis (PCA) was opted. For factor analysis to work there should be some relationship between the variable, so a Pearson coefficient of Correlation matrix of selected variables was prepared and then a test proposed by Kaiser-Meyer-Olkin (KMO) (1974) and Bartlett (1937) was applied to see whether the sample variables were adequate for factor analysis. The results of KMO–Bartlett's test and coefficient of correlation are shown in Tables 1 and 2 respectively. The correlation matrix represents the extent to which the selected 12 financial variables are correlated pair-wise in a matrix. Out of 66 cells below the diagonal, there are only 22 correlation coefficients (the numbers that go from the upper right corner to the lower left) above or equal to 0.25, which are also statistically significant (at 1 % level and 5%) and different from zero.

TABLE 1: COEFFICIENTS OF CORRELATION

	EPS	EARNINS GROWTH	ROE	ROCE	D/E	BETA	E/P	B/V	P/BV	MARKETCAP	YIELD	AVGSTOCK RETURNS
EPS	1	-.101	.**377****	.**300***	.008	-.188	.185	.**487****	.000	.222	.155	-.077
	-.101	1	-.094	-.105	-.034	-.126	-.155	-.106	.100	-.037	-.256	.085

ROE	.377**	-.094	1	**.974****	**-.290***	**-.525****	-.248	-.248	**.816****	.193	.094	**.390****
ROCE	.300*	-.105	.974**	1	**-.335***	**-.507****	**-.274***	-.244	**.851****	.228	.104	**.383****
D/E	.008	-.034	-.290*	-.335*	1	**.327***	.150	.240	-.254	-.144	-.045	.048
BETA	-.188	-.126	-.525**	-.507**	.327*	1	**.478****	**.371****	**-.491****	-.183	.099	-.099
E/P	.185	-.155	-.248	-.274*	.150	.478**	1	**.511****	**-.498****	.067	**.577****	**-.235**
BV	.487**	-.106	-.248	-.244	.240	.371**	.511**	1	**-.322***	.120	.067	-.172
P/BV	.000	.100	.816**	.851**	-.254	-.491**	-.498**	-.322*	1	.061	-.148	**.551****
MARKETCAP	.222	-.037	.193	.228	-.144	-.183	.067	.120	.061	1	.152	-.075
YIELD	.155	-.256	.094	.104	-.045	.099	.577**	.067	-.148	.152	1	-.171
AVGSTOCK RETURNS	-.077	.085	.390**	.383**	.048	-.099	-.235	-.172	.551**	-.075	-.171	1

TABLE 2: KMOAnd Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.571
Bartlett's Test of Sphericity	Approx. Chi-Square	429.973
	Df	66
	Sig.	.000

The KMO statistic reported in Table 2 is 0.571 which represents the ratio of squared between the variables tothe squared partial correlation between those variables. The KMO statistic varies between 0 and 1. Kaiser (1974) recommended values greater than 0.5 as acceptable. It is indicated that the sample is good enough for sampling.

The Bartlett's measure tests the null hypothesis that the original correlation matrix is an identity matrix. If the correlation matrix were an identity matrix, all correlation coefficients would be zero. We expect some relationships between the variables in the analysis. Bartlett's test is highly significant ($p < 0.001$), and therefore, factor analysis is appropriate for this study.

TABLE 3: TOTAL VARIANCES EXPLAINED

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.959	32.995	32.995	3.959	32.995	32.995	3.417	28.474	28.474
2	2.210	18.413	51.408	2.210	18.413	51.408	1.755	14.628	43.102
3	1.281	10.671	62.079	1.281	10.671	62.079	1.754	14.618	57.720
4	1.198	9.980	72.060	1.198	9.980	72.060	1.721	14.339	72.060
5	.876	7.301	79.361						
6	.776	6.465	85.826						
7	.681	5.678	91.505						
8	.419	3.489	94.993						
9	.307	2.555	97.548						
10	.232	1.935	99.483						
11	.047	.389	99.872						
12	.015	.128	100.000						
Extraction Method: Principal Component Analysis.									

TABLE 4: Rotated Component Matrix

	Component			
	1	2	3	4
ROE	.906			
PBV	.905			
ROCE	.904			
AVGSTOCK	.694			
DIVIDEND			.850	
EP		**.674**		
EARNING		**.619**		
EPS			.856	
BV			.783	
DE				.712
BETA				.618
MARKETCAP				

After testing the appropriateness and adequacy of sample, the study undertook factor analysis with the 12 fundamental variables. Table 3 shows the proportion (%) of variance explained by each factor, and indicates that the four factors overall account for 72.060 per cent of the total variance. Factors 3, labeled as the valuation factor, are most relevant as the study is intended to verify the existence of value premium in the Indian context. Valuation factor indicates how well the securities are valued in the market, and what determines its valuation and the valuation outcome. Earnings yield (E/P rate), earnings growth, and dividend were positively loaded on valuation factor, as we can see from Table 4.

Positive loading means that the variables were positively correlated with the factor. Growth in earnings leads to larger increase in Earnings per Share (EPS) of firms in relation to the market price of its share (increase in earnings yield/decrease in P/E ratio). An increase in this factor indicates that the company has high earnings per share, but the market price of its share is low which means that the investment in it has good potential for growth in terms of capital appreciation in future. An increase in this factor have a positive effect on the share price, in that way enabling the investors to have increased returns from their investments.

Based on the findings of factor analysis, the variables—earnings growth and E/P rate—were considered as the prime determinants for tracking the price or returns of stocks in the Indian context. The validity of this hypothesis was further verified under a simple OLS regression framework.

Regression Analysis

For proceeding further, first we have to fit a single factor regression model explaining the causal relationshipbetween the E/P and the expected earnings growth of a firm

$$Yi = a + bixi + uiv$$

*a*and *ui*are constant and error term (which assumed tobe zero) respectively

Yi = Expected E/P rate
Xi = Expected earnings growth
bi= Impact of expected earnings growth on E/P rate

TABLE 5: Regression Estimates

BASE YEAR	CONSTANT	BETA COEFFICIENTS	STANDARDIZED COEFFICIENTS	R2	F STATISTICS
2011-12	0.055	9.881	0.016	0.19	0.013(.909)
2012-13	6.225	0.054	0.051	0.17	0.135(.715)
2013-14	0.053	4.385	0.000	0.019	0.000(.999)
2014-15	0.45	3.68	0.042	0.017	0.093(.762)
2015-16	**.050**	**0.050**	**0.300**	**0.73**	***5.148(.027)**

As expected sign of the relationship between earnings growth and E/P is the same (positive) as in the factor analysis. The regression results show the explanatory power of expected growth rate of earnings in determining the variations in E/P rate. The value of R2 is 73 per cent.. The F statistic, tests the null hypothesis that all the coefficient are zero (expected earnings growth shall not be able to explain the earning price relationship of a particular year) is found to be significant at 5 per cent level in one out of the five years considered for the study. Only in the year 2015–2016, the expected earnings growth is significant in explaining the E/P rate of that year. In all other years, the regression coefficient of expected growth of earnings on E/P rate is found to be insignificant at 5 per cent level. These results confirm the significance of earnings growth in estimating E/P of firms in the Indian market conditions.

The study found the significant relationship of earnings growth and E/P rate, Now the study will estimate the E/P (Normal E/P) and compare the same with the actual E/ If the actual E/P for a particular stock is greater than its estimated P/E, he might conclude that the stock is underpriced, and if actual P/E is smaller than the Normal P/E, he will consider it as overpriced. If the actual P/E equals the Normal P/E, his claim is correct pricing of stock at the given market conditions.

TABLE 6: Actual E/P Rate and Expected E/P Rate of Stocks: A Comparison AndRisk- Return Profile of Overvalued And Undervalued Stocks

NAME OF THE COMPANY	ACTUAL E/P	ESTIMATED E/P	OVERPRICED/UNDERPRICED	RETURNS (%) (2016-2017)	RANK
Reliance Industries Ltd.	0.081037277	0.054401515	Underpriced	393	1
Indian Oil Corpn. Ltd.	0.094517958	0.097466037	Overpriced	344	2
Hindalco Industries Ltd.	0.022366361	0.032227206	Overpriced	260	3
A C C Ltd.	0.02221235	0.040982716	Overpriced	181	4
Exide Industries Ltd.	0.052438385	0.052832997	Overpriced	175	5
N T P C Ltd.	0.071890726	0.050545282	Underpriced	159	6
Ambuja Cements Ltd.	0.014369881	0.036466161	Overpriced	158	7
Hindustan Petroleum Corpn. Ltd.	0.138312586	0.059492339	Underpriced	157	8
A B B India Ltd.	0.011742602	0.059476624	Overpriced	138	9
Bharat Forge Ltd.	0.034674064	0.050344322	Overpriced	137	10
Hindustan Zinc Ltd.	0.105932203	0.049573767	Underpriced	137	10
Larsen & Toubro Ltd.	0.045724737	0.050243757	Overpriced	128	12
Maruti Suzuki India Ltd.	0.039323634	0.05401091	Overpriced	118	13
Nestle India Ltd.	0.018301611	0.045017958	Overpriced	114	14
Dabur India Ltd.	0.021349274	0.054898517	Overpriced	113	15
Tata Steel Ltd.	0.159744409	0.048415347	Underpriced	94	16
Titan Company Ltd.	0.022810219	0.045529467	Overpriced	86	17
Power Grid Corpn. Of India Ltd.	0.081766149	0.054065846	Underpriced	79	18
Reliance Infrastructure Ltd.	0.113765643	0.055828769	Underpriced	74	19
N M D C Ltd.	0.080064051	0.03747892	Underpriced	64	20
Cummins India Ltd.	0.032041012	0.048660021	Overpriced	55	21
Zee Entertainment Enterprises Ltd.	0.022983222	0.058822929	Overpriced	46	22
Godrej Consumer Products Ltd.	0.01594642	0.052939772	Overpriced	45	23
Tata Chemicals Ltd.	0.059311981	0.048697287	Underpriced	45	23
Dr. Reddy'S Laboratories Ltd.	0.026315789	0.044940332	Overpriced	40	25
Mahindra & Mahindra Ltd.	0.042158516	0.050749188	Overpriced	34	26
Oil & Natural Gas Corpn. Ltd.	0.089206066	0.049257186	Underpriced	33	27
Adani Ports & Special Economic Zone Ltd.	0.055340343	0.057113853	Overpriced	28	28
Ultratech Cement Ltd.	0.023798191	0.051161797	Overpriced	28	28
Asian Paints Ltd.	0.01900057	0.05410087	Overpriced	18	30
H C L Technologies Ltd.	0.052493438	0.046669117	Underpriced	18	30
AurobindoPharma Ltd.	0.037174721	0.038524097	Overpriced	12	32
Housing Development & Infrastructure Ltd.	0.088573959	0.054201047	Underpriced	6	33
Divi'S Laboratories Ltd.	0.042337003	0.041396412	Underpriced	-5	34
Wipro Ltd.	0.057208238	0.049150874	Underpriced	-8	35
Tech Mahindra Ltd.	0.070175439	0.062861769	Underpriced	-10	36
BhartiAirtel Ltd.	0.057240985	0.040328433	Underpriced	-20	37

NAME OF THE COMPANY	ACTUAL E/P	ESTIMATED E/P	OVERPRICED/UNDERPRICED	RETURNS (%) (2016-2017)	RANK
Lupin Ltd.	0.042753313	0.054203695	Overpriced	-22	38
Hero Motocorp Ltd.	0.053734551	0.056923744	Overpriced	-24	39
Marico Ltd.	0.022172949	0.041191498	Overpriced	-44	40
Bajaj Auto Ltd.	0.051894136	0.053351008	Overpriced	-47	41
Tata Consultancy Services Ltd.	0.046210721	0.054596811	Overpriced	-52	42
Tata Power Co. Ltd.	0.038880249	0.043222211	Overpriced	-52	42
G A I L (India) Ltd.	0.048402711	0.043847669	Underpriced	-53	44
Glenmark Pharmaceuticals Ltd.	0.06557377	0.054250507	Underpriced	-72	45
I T C Ltd.	0.03742515	0.050092945	Overpriced	-76	46
D L F Ltd.	0.021829295	0.037138701	Overpriced	-77	47
Cipla Ltd.	0.033311126	0.053468465	Overpriced	-90	48
Colgate-Palmolive (India) Ltd.	0.025348542	0.037973838	Overpriced	-98	49
United Breweries Ltd.	0.012309207	0.051586006	Overpriced	-100	50
Hindustan Unilever Ltd.	0.021640338	0.052138183	Overpriced	-103	51
Idea Cellular Ltd.	0.065703022	0.047745861	Underpriced	-144	52
MothersonSumi Systems Ltd.	0.018875047	0.046751858	Overpriced	-161	53
Cadila Healthcare Ltd.	0.060938452	0.033296147	Underpriced	-164	54

The analysis shows that 20 stocks were undervalued and 34 stocks were overvalued in the year 2015-16.

Does the investor produce better returns by identifying undervalued and overvalued stocks based on E/P rate For answering this question, it was assumed that investor had purchase the sample stock on the first day of the accounting period subsequent to the year in which the valuation is done and hold it until the last trading day of that period.By taking the difference in the market values of the stocks on these two dates, plus any dividend declared and paid during the period, the return that he would have made from it, was computed. Such comparison was done only for one period—2015–2016. No significant relations could be established between earnings growth and E/P rate hence, no comparison was made in the subsequent years.

The analysis of Table 5 shows that in 2016–2017, the return profile of undervalued stocks was outstanding compared to its counter group of overvalued stocks. Among the top 20 stocks in terms of producing return during the year, 8 stocks came from the undervalued group of its preceding year, 2015–2016.Out of these 20 stocks, undervalued stock of Reliance Industries Ltd. Ranked as topper by delivering returns at an outstanding scale of 393 per cent. The four undervalued stocks were included among the best ten stocks (in the sample) of the year.

Table 7 displays the average returns on an annual basis produced by undervalued and overvalued stocks forits investors during the four assessment periods, along with the return produced by the broad-based Index S &P BSE SENSEX (market return).

TABLE 7: Checking the equality of Variances

YEAR	MARKET RETURN	MEAN VALUE OF UNDERVALUED STOCKS	MEAN VALUE OF OVERVALUED STOCKS	Levene's Test of Equality of Variances	
				F	SIG
2015-16	21.40	39.15	38.58	.043	.837

It is implicit from the analysis that during the periods of observation (2015–2016), undervalued stocks received returns (on average) at a rate which were much higher than the rate of return given by the market index. However, overvalued stocks were not able to beat the market. The *t*-test checked the statistical significance of the difference in returns of the two groups of stocks. The test procedure demands the checking of the equality of variances of the groups for having inferences that are more useful. The Levene's test of homogeneity of variance based on F statistic was used for this purpose, which accepted the null hypothesis that the variances of the groups under observation were same. The superior performance of undervalued stocks relative to the market, as well as overvalued stocks reinforce the validity of the argument of the investment strategists in the use of E/P ratio as the tool for earning excess returns from stock market investments.

6. CONCLUSION AND DISCUSSION

The quantum of research done on value and growth stocks is very large. Various scholars examined value and growth stocks in different settings. However, there are always some gaps to be discovered in order to contribute and extend the

research on this matter. The study contributes by identifying undervalued and overvalued stocks classified as value stock and growth stock by using E/P Rate. Undervalued stocks will provide higher returns than overvalued stocks if E/P Rate is interpreted properly.

The objective of this paper was to examine the superiority of Value strategy over growth strategy in India. Using data from Indian stock market from 2012 to 2016, the study found that the value stocks outperformed the growth stocks during 2015-16 as positive value premium during the period.

From a statistical point of view, Earnings Growth and E/P rate are the prime determinants of stock return. There is significant impact of earnings growth on E/P Rate and there is a difference in the mean return of value and growth stocks.

Similar evidences are found by, Saji (2014); Saji & Harikumar (2015)

7. LIMITATIONS AND FUTURE SCOPE

There are some limitations in this study. Stock returns were taken directly from the Prowess database which does not consider- impact costs‖ or transaction costs in the form of brokerage fees, account maintenance charges etc. Also study considered only one dimension –the E/P ratio to classify undervalued and overvalued stocks.

REFERENCES

[1] Athanassakos, G. (2009). Value versus growth stock returns and the value Premium: The Canadian experience 1985-2005. *Canadian Journal of Administrative Sciences*, 26,109-121

[2] Babson, D.L. (1951). The case of growth vs. income stocks on a yield basis. Babson and Company, Inc., *Weekly Staff Letter*, September 17, 1951

[3] Barberis, N. &Shleifer, A. (2003). Style investing, Journal of Financial Economics, 68 (2), 161-199.

[4] Basu, S. (1977). The investment performance of common stocks in relation to their price-earnings ratios: a test of the efficient market hypothesis, *Journal of Finance*, 32, 663-682.

[5] Black, A.J. & McMillan, D.G. (2004) Non-linear predictability of value and growth stocks and economic activity, *Journal of Business Finance & Accounting*, 31 (3), 439-474.

[6] Black, A.J. & McMillan, D.G. (2006). Asymmetric risk premium in value and growth stocks, *International Review of Financial Analysis*, 15, 237.

[7] Brown, S., Rhee, G.S. & Zhang, L. (2008). The return to value in Asian stock markets, *Emerging Markets Review*, 9 (2008), 194-205

[8] Capaul, C., Rowley, I. & Sharpe, W.F. (1993). International value and growth stock returns, *Financial Analysts Journal*, 1993, January-February, 27-36.

[9] Chan, L.K.C. &Lakonishok, J. (2004). Value & growth investing: Review and Update, *Financial Analysts Journal*, 60 (1), 71-86.

[10] Chan, L.K.C., Jegadeesh, N. &Lakonishok, J. (1995). Evaluating the performance of value versus glamour stocks – The impact of selection bias, *Journal of Financial Economics*, (38), 269-296.

[11] Chen, N. & Zhang, F. (1998). Risk and return of value stocks, *Journal of Business*, October 1998, 71-102.

[12] Deb, S. G. (2012). Value versus growth.*IUP Journal of Applied Finance*, 18(2), 48–62.

[13] Fama, E.F. (1970). Efficient capital markets - a review of theory and empirical work. *The Journal of Finance*, 25 (2), 383-417

[14] Fama, E. F. & K.R. French (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, Vol 3 (1993), 3-56

[15] Fama, E. F. & K.R. French (1998). Value versus growth: the international evidence, *Journal of Finance*, 53.

[16] Fama, E.F. & French, K.R. (2003). The CAPM: theory and evidence, Center for Research in Security Prices (CRSP), *University of Chicago, Working paper*, No: 550, 1-27.

[17] Fama, E.F. & French, K.R. (2007). The anatomy of value and growth stock returns, *Financial Analysts Journal*, 63 (6), 44-54.

[18] Graham, B. & Dodd, D.L. (1934). *Security Analysis*, McGraw-Hill, New York, NY, United States.

[19] Mullainathan, S., 2000.Thinking through categories. Unpublished working paper. MIT

[20] Kothari, S., Shanken, J., & Sloan, R. (1995). Another look at the cross-section of expected stock returns. *Journal of Finance*, 50(1), 185–224.

[21] Lakonishok, J., Shleifer, A., &Vishny, R. (1994). Contrarian investment, extrapolation, and risk. *Journal of Finance*, 49(5), 1541–1578.

[22] La Porta, R., Lakonishok, J. Shleifer, A. &Vishny, R.W. (1997). Good news for value stocks: further evidence on market efficiency, *Journal of Finance*, 52, 859-874.

[23] Rasul (2013). Value Versus Growth on the Dhaka Stock Exchange: Risk-Return Relationship, *International Journal of Economics*, Finance and Management,6.

[24] Saji, T. G. (2012). Does value outperform growth in a downturn? *IOSR Journal of Business and Management*, 4(6),11–17

[25] Saji, T.G., Harikumar, S. (2015). Earning Growth and Value Premium: The Indian Experience.*Vikalpa- The Journal for Decision Makers*. 40(4)444-454.

[26] Yen, J. Y., Sun, Q. & Yan, Y. (2004). Value versus growth stocks in Singapore, *Journal of Multinational Financial Management*, 14, 19-34.

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

Prospects of Modern Banking Practices in Rural Economy of India

-A Study Making a Way towards Reality of the Dream of Cashless Economy of India, With Special Reference to The Semi Hilly Districts of Lower Himachal Pradesh

Rohit Kanda[1], Harish Handa[2], G.S. Bhalla[3], Bharti Singh[4]

[1]Dr. Rohit Kanda, UGC Funded Research Fellow,
Department of Commerce, Guru Nanak Dev University, Amritsar (PB.)
Former HoD-MBA and Assistant Professor,
Department of Business Management,
Indus International University (IIU), Una (Himachal Pradesh)
[2]Dr. Harish Handa, Teacher in Charge (Head) and Associate Professor,
Department of Commerce, Shaheed Bhagat Singh College,
University of Delhi, New Delhi, India.
[3]Prof. (Dr.) G.S. Bhalla, Senior Professor, Department of Commerce,
Guru Nanak Dev University, Amritsar (PB.)
[4]Ms. Bharti Singh Head and Assistant Professor, Department of Business Management,
Indus International University (IIU), Una (Himachal Pradesh)

Abstract: ***India, on an edge of major change towards an unprecedented economic growth along with robust advancements in the nation's HDI, having a round 65% of its population aged below 35years and will add almost 10-12millionmore to it every year incoming two decades. Urban India has 137 million Internet users, whereas rural has 68million, growing by 58% each year. Increasing smart phones and 3G subscriptions are further strengthening it. The statistics motivates us towards the infusion of the idea of effective utilisation of modern banking practices especially associated with mobile and internet in rural India, marching towards the fulfilment of dream of a cashless India by Modi Government in near future. But there are many structural problems which needs to be considered and resurrected with very hard efforts. Only our youth is well versed or is learning the modern banking effectively. Apart the recent outcomes of the scenario in the recent demonetization, where only educated or at least mobile and smart technologies savvy retailers were able to offer the e-payment mode, such as Paytm and a large old aged and mid aged segment was unable to do so and reworked for other make to use alternatives, was not much answerable as a positive feedback. Further the facilities in the rural regions, especially remote ones is well away from even basic facilities and other such related problems. Hence a study has been conducted in the lower region of Himachal Pradesh, which is a rural area quite in cut from its even nearby metros, with a lack or a minimal facility of resources in general and least connectivity in particular. The area has hardly found to be touched with the help of a grass root study. 102 respondents (51 Young Aged and they referred 51 Middle Aged) have been taken as sample from the region of Lower Himachal Pradesh and Adjoining Districts of other adjacent States using Snowball Sampling Technique. As per the study interpretations, middle aged is more purported to use the modern banking measures for its personal as well as business usage, being them more involved in Handling of funds. The main problems faced by rural and remote region in using cash less transactions include Location and such other problems. Hence, Banking entities operating or planning to expand their business in the region, to offer its modern banking solutions need to enhance its branch network or may utilize the services of channel partners to better serve its remotely located customers. Further, they need to condition their employee base to the needs of locale. Network connectivity issues may be sorted by a mixed initiative by government and corporate, as it will enhance business as well.***

Keywords: Modern Banking and Connectivity Issues, The Cashless Economy and Reality.

1. INTRODUCTION

India having 137 million Internet users in Urban and 68 million in rural, is growing by 58% each year. This motivates us towards the infusion of modern banking practices especially associated with mobile and internet in rural India, marching towards the fulfillment of dream of a cashless India, subjecting to many structural problems it has. It is a general belief that our youth is well versed with the modern banking effectively. The recent outcomes of the scenario in the recent demonetization have many things to say. On 8 November 2016, the Government of India announced the demonetisation of all Rs. 500 (US$7.40) and Rs.1,000 (US$15) banknotes of the Mahatma Gandhi Series. [12] The government claimed that the action would curtail the shadow economy and crack

down on the use of illicit and counterfeit cash to fund illegal activity and terrorism.[13][14]. The sudden nature of the announcement and the prolonged cash shortages in the weeks that followed created a significant disruption throughout the economy. [15][16][17][18]. In the announcement, Modi declared that use of all Rs.500 and Rs.1000 banknotes would be invalid past midnight, and announced the issuance of new Rs.500 and Rs.2000 banknotes in exchange. SENSEX and NIFTY fell over 6 percent next day.[19]India faced severe cash shortages with severe detrimental effects across the economy.[20][21][22] People seeking to exchange their bank notes had to stand in lengthy queues, and several deaths were linked to the inconveniences caused due to the rush to exchange cash.[23][24]It was heavily criticised by members of the opposition parties, leading to debates in both houses of parliament.[25][26][27] The Indian Supreme Court while hearing one among a slew of cases filed against the sudden demonetization decision in various courts,[28] observed that it "appears to be carpet bombing and not surgical strike".[29] Amartya Sen, severely criticised the demonetisation move calling it a "despoticaction".[30][31] Former Sr. VP and Chief Economist - World Bank, Kaushik Basu, called it a 'major mistake'.[32][33][34] Pronab Sen, former Chief Statistician and Planning Commission India member, called it a "hollow move".[35] Prabhat Patnaik, a former professor JNU called the move' witless' and 'anti people'.[36]Noted economist and journalist, T. N. Ninan wrote in the Business Standard that demonetisation 'looks like a bad idea, badly executed on the basis of some half baked notions'.[37] Deepak Parekh (Chairman of HDFC) had initially appreciated the decision, but later said that the move had derailed the economy.[38][39]Industrialist Rajiv Bajaj criticised the demonetisation, saying that the concept of demonetisation was wrong in itself.[40]Chief Ministers of several Indian states[41][42][43]have criticised and led major protests against causing hardships to common.[44]A PIL filed in Madras High Court by GS Indian National League, got dismissed by HC stating that it could not interfere in monetary policies of the government.[45] Similar PILs were also filed in the Supreme Court.[46] Several government ministers had declared before the demonetisation that they were holding large amounts of cash.[47][48]Steve Forbes described the move as 'Sickening And Immoral'.[49] He stated that "What India has done is commit a massive theft of people's property without even the pretense of due process a shocking move for a democratically elected government."[49]Nobel laureate Paul Krugman said that there may be significant costs to it.[50]The demonetisation also came in for sharp criticism from media outside India,[51][52] with the New York Times saying that the demonetisation was "atrociously planned" and that it did not appear to have combatted blackmoney,[53][54] while an article in The Guardian stated that "Modi has brought havoc to India".[51]The Harvard Business Review called it "a case study in poor policy and even poorer execution"[55] The frequent change in the narrative on objectives of the demonetisation to its visible impact on the poorest of the poor made other critique scalling government's narrative as spins in view of the "pointless suffering on India's poorest."[56]Global analysts cut their forecasts of India's GDP growth rate due to demonetisation.[57][58] India's GDP in 2016 estimated to be US$2.25 trillion, hence, each 1 per cent reduction in growth rate represents a shortfall ofUS$22.5 billion (Rs. 1.54 lakh crores) for the Indian economy.[59] According to Societe Generale, India's quarterly GDP growth rates may drop below 7% for an entire year at a stretch for the first time since June 2011.[60]There was a reduction in industrial output as industries were hit by the cash crisis.[61]There was a slowdown in both manufacturing and services industries.[62] The PMI report showed that the reduction in inflation in November was due to shortage in money supply.[61]The growth in eight core sectors such as cement, steel and refinery products, was only to 4.9 percent in November as compared with 6.6 percent in October.[62][63]The recent outcomes of the scenario in the recent demonetization was not much answerable as a positive feedback. Further the rural regions, especially remote ones are well away from even basic facilities and other such related problems much drastically faced it. Hence a study is conducted in the lower region of Himachal Pradesh, which is a rural area quite in cut from its even nearby metros, with a minimal facility of resources in general and least connectivity in particular.

2. LITERATURE SURVEY

As per the literature cited, no exactly relevant Literature is available, but related studies that are relevant to the subject, are mentioned as follows:

Author (Year)	Title	Instrument	Technique	Conclusion	Recommendations	Further Scope
Sukanya (2016)	Trends, Implications and Prospects of Retail Banking in India	Secondary data Analysis, Time Series: 2004-2013	Comparative and Ratio Analysis,	Retail banking has the macro benefit of raising the level of economic activity in the country resulting in higher rates of economic growth of the country.	Sufficient precautions are taken to ensure that the retail loans lent by the banks are serviced and repaid according to schedule so not resulting in increasing bad debts and nonperforming assets.	Effective precautionary measures on retail loan processing and handling can be reached out.
Chatterjee & Banerji (2016)	The Impact of Demonetization in India	Secondary Data Analysis	Comparative Study: Pre and Post Availability	Sectors / Industries serving in rural and semi-urban regions, as well as tier 2 and tier 3 cities and	It is expected to enhance the liquidity position of banks, which can be leveraged for lending purposes.	Necessary tackling measures need to be taken by respective sectors on their own.

Author (Year)	Title	Instrument	Technique	Conclusion	Recommendations	Further Scope
			of various techniques.	towns whose markets primarily driven by cash transactions, are most adversely affected		
Mittal, Jadaun & Dash (2013)	Computerization in banks -some issues	Primary (79 litigants questionnaires) and Secondary Data	Comparative Study: Pre and Post Availability of various techniques.	Technology is the one which is subjected to and has balanced fundamental changes in the banks. We have initiated ourselves in the next course and touched new heights of brilliance in the working and efficiency of banks.	Firewalls, data interruption, digital certification are few security measures which must be rooted in the software used by banks. Regular quest for improvement to perform efficiently for gaining profit are some area of urgent attention.	Technical Studies may be conducted to enhance the betterment of the e-safety measures.
Chauhan & Choudhary (2015)	Internet Banking: Challenges and Opportunities in Indian Context	Secondary data Analysis, Time Series: 2010-2014	Comparative Study: Two Period Availability of various techniques.	Security risk, privacy risk, trust factor and less awareness among consumers about e-banking are acting as hurdle in the adoption of e-banking facilities.	Government of India along with various government agencies may make an effort to make e-banking more safe, secure and reliable.	Studies may be focused on factors which influence the consumer intention to adopt internet banking services.
Pahwa (2016)	Cash vs Digital Money	Secondary data, Timeline till 2019	Secondary Data Analysis	There is no parity between Cash and Digital Money.	Giving an indirect tax rebate for using cashless methods of payment may be helpful.	The kind of rebate to be given can be studied further.
Gorlamandala (2016)	Demonetisation is the tool but cashless economy is the goal of India	Secondary data, Timeline till 2019	Time Series / Comparative Analysis	Neither businesses, citizens of India are ready to move into cash less state nor the implementers and other fin tech operators are adequately resourced to deal with.	There is a expectation from the broader markets in India that the Indian government may come up with more relevant measures to reduce black money and also encourage digital transactions in the country.	Other effective measures to tackle black money can be suggested.
Basavarajappa (2012)	E-banking in India and its present scenario and future prospects	Secondary data, Timeline till 2019	Secondary data Analysis	E-banking has posed several challenges to the regulators and supervisors	With networking and inter connection, new problems are taking place related to security, privacy and confidentiality to e-banking transactions.	Technical research with regard to tackle such new technical problems can be taken for.
Biswal (2015)	Emerging Trends in the Indian Banking Sector-Challenges & Opportunities	Secondary Data, Timeline 2007-2012	study of 5 emerging trends of financial services in India, Time Series Analysis	The biggest opportunity for the Indian banking sector today is the Indian costumers. Demographic shifts in terms of income level and cultural shifts in terms of life style aspirations are changing the profile of the Indian customer.	Innovative Rural market strategy in terms of Innovative banking services is required in order to focus on the untapped population in the rural areas. Provision of better Telecommunications network facilities are of prime importance.	Wide coverage of Financial Literacy taking the mentality of the rural Indians into considerations should be customarily formulated.
HDFC Bank Investment Advisory Group (2016)	Demonetization and its impact - Event Update	Secondary data, Timeline till 2019	Secondary data analysis	The move would be positive for sectors like Banking and Infrastructure. It could be negative for sectors like Consumer Durables, Luxury items, Gems and Jewellery, Real Estate and allied sectors.	The government may also get enough headroom to reduce the income tax rates, which can lead to higher disposable income with people and can improve consumption demand in the medium to long term.	Other alternatives to increase the disposable income can be looked for.
Deloitte (2016)	Demystifyin	Secondary	Secondary	Real estate, retail, etc.	The bigger challenge would be	Other effective

Author (Year)	Title	Instrument	Technique	Conclusion	Recommendations	Further Scope
	g demonetizati on	data, Timeline till 2019	data analysis	getting negatively impacted. On the contrary, Banking and Financial Services, eCommerce, fintech, etc. are expected to have a positive impact.	to address the issue of black money in the long run.	measures to tackle black money can be suggested.
Jayachandran (2016)	Making India a cashless economy	Secondary data, Timeline till 2019	Secondary data analysis	A meaningful transition will depend on a number of things such as awareness, technological developments and cashless economy will depend on a number of factors, such as availability and quality of telecom network, improved security and ease of transaction and incentivize cashless transactions and discourage cash payments.	A shift away from cash will make it more difficult for tax evaders to hide their income, a substantial benefit in a country that is fiscally constrained.	Other stable and effective measure to tackle black money can be suggested.
Mattewos (2016)	Challenges and Prospect of E-Banking in Ethiopia	exploratory research design - primary and secondary qualitative data - E-banking Department of each bank.	The collected data was analyzed by using descriptive analysis such as tables and percentages.	From the View point of the bank Cost reduction, coverage of wide geographical area, customer satisfactions are some of the benefits of using E banking.	Commitment of the government to facilitate the expansion of ICT infrastructure and willingness among banks to cooperate in building infrastructure are the major opportunities for the adoption of the system in the banking industry.	Scope of banking entities to participate in such development can be worked out
Chakrabarty (2009)	Banking and finance in India – developments, issues and prospects	Secondary data, Timeline till 2019	Secondary data analysis	While the ratio of bank assets to GDP has increased significantly to a shade over 93 per cent in 2008-09 – a result of high credit growth in recent years – it is still lower than other emerging countries.	Retail banking in India is maturing with time; several products, which further could be customized are in the retails segments of housing loan, personal loan, education loan, vehicle loan, etc.	Exact categories of such customisedsolutions can be formulated.
Padmanabhan (2012)	Techno – banking – prospects and challenges	Secondary data, Timeline till date	Secondary data analysis	Present IT systems of banks are not able to manage unstructured data. It is but natural for banks to outsource their IT related activities including application development when the sector as a whole, is facing a shortage of skilled professionals.	Banks need to build systems to capture and analyze unstructured and semi-structured data. Use of local languages could facilitate easy understanding. Adoption of electronic banking would require moving the customers from being "assisted" initially to becoming "self-reliant".	Technical Studies may be conducted to enhance the betterment of the e-services delivery.
Deodhar (2017)	Black money and demonetizati on	Secondary data, Timeline till date	Secondary data analysis	There have been global initiatives to tackle "underground economy" or "shadow economy". Primarily, the principles remain the same.	Risk based monitoring mechanisms, coordination amongst revenue departments and education among other things is recommended.	A consistent estimation of the black economy need to be studied.
Sharma	Role of	Secondary	Secondary	Implementation is in	To facilitate successful	Specific efforts to

Author (Year)	Title	Instrument	Technique	Conclusion	Recommendations	Further Scope
&Sharma (2012)	Information Technology in Indian Banking Sector	data, Timeline till 2019	data analysis	process upon Centralization, Single Window System, Revised Account opening, Call centre for customers, CRM Application and Data Warehousing.	implementation, intensive efforts are to be undertaken on Completion of correct MIS details in all accounts and SRM's. Present slowdown in rollover must be put to full use to have concrete action.	MIS improvement can be formulated.

Research Gap: As per the above literature review, the area has hardly found to be touched with the help of a grass root study. Although many studies already held at national as well as international levels based on secondary input data, but a locale or regionally representing study based upon a primary survey on the subject particular, has been hardly found in context of problems of modern banking in rural India.

3. OBJECTIVES OF THE STUDY

1. To examine that whether the versatility of new systems & technologies has a positive impact on usage of modern banking facilities;
2. To prove that the youth is more probable to use modern banking solutions because of their being well versed with new systems and technology;
3. To explore the main problems faced by rural and remote regions going cash less preventing them to contribute towards the national goal of cashless India;
4. To prove that lack of facilities and other problems have a negative impact on use of cash less transactions, especially in rural and remote regions.

Need and Feasibility Study: As described in the research gap, the area has hardly found to be touched with the help of a grass root study and a locale or regionally representing study based upon a primary survey has been hardly found in context of problems of modern banking in rural India. The research is expected to part up a small component of this research grey area. The Study is well feasible to pursue, based on the premise that a snowball sampling based survey is well easy to conduct, and a primary survey has not been held here.

4. HYPOTHESIS TESTED

Hypothesis Statement 1: Youth is More Probable to Use Modern Banking, because of being well versed with new Systems & Technologies. i.e.,

H_{1o}: MEAN $_{usage.yn}$> MEAN $_{usage.ma}$
H_{1a}: MEAN $_{usage.\ yn}$ =/< MEAN $_{usage.ma}$

Hypothesis Statement 2: Rural / Remote Localities face more problems in making cash less transactions, due to lesser / lack of facilities / other technical and structural problems. i.e.,

H_{2o}: MEAN $_{prob.rur/rem}$> MEAN $_{prob.urb/semiurb}$
H_{2a}: MEAN $_{prob.rur/rem}$ =/< MEAN $_{prob.urb/semiurb}$

Research Methodology

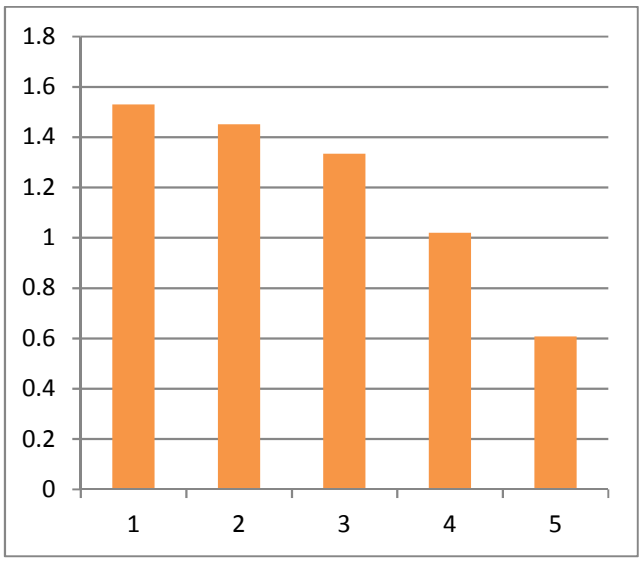
Sampling Technique and Sample Size: Snowball Sampling was used for the purpose, viz.51 young sampled as convenience in local educational institute(s), then they referred 51 Middle-Aged Samples from their references in ratio 1:1.

Study Usefulness and Limitations: The Study will be well useful for the Banking entities operating or planning to expand their business in the region, to offer such services. Being this Survey is done in Semi-Hilly Region of Himachal Pradesh & Adjoining States; the sample is not a direct representative of national or international population. Further, being a small sample of 102 Respondents only, collected based on convenience and snowball sampling, the results inference may not be an exact reference to the population of the region.

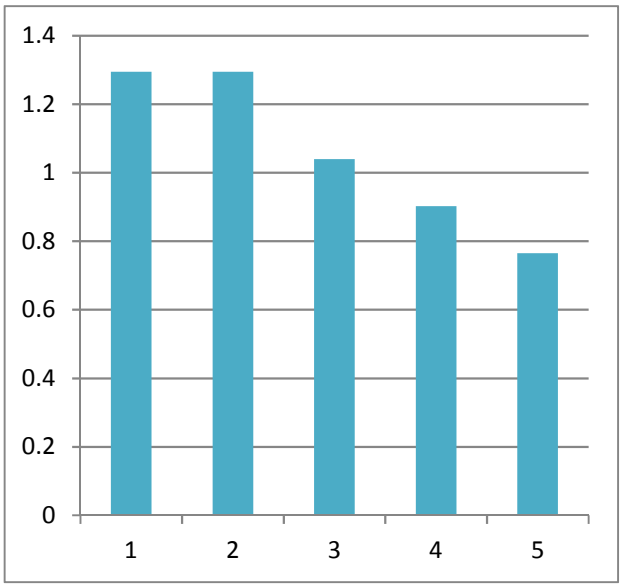
5. DATA INTERPRETATION AND ANALYSIS

1) Gadgets Owned, Used, Versatility, Internet and Measures used in Demonetization

Young



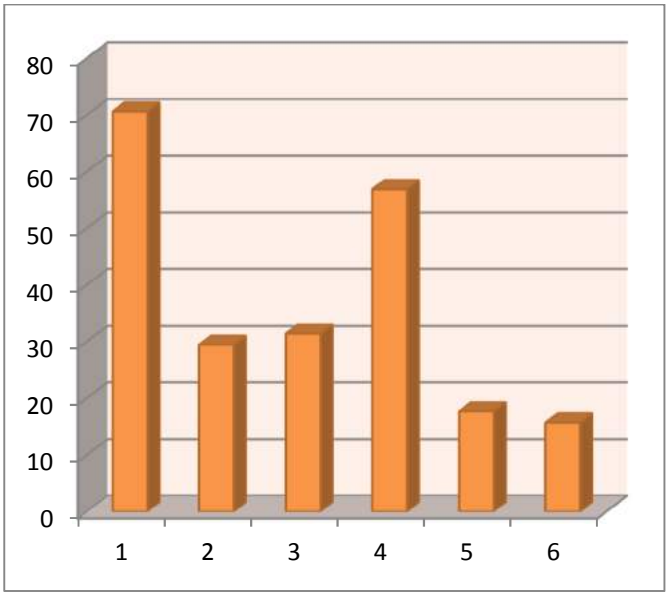
Middle Aged



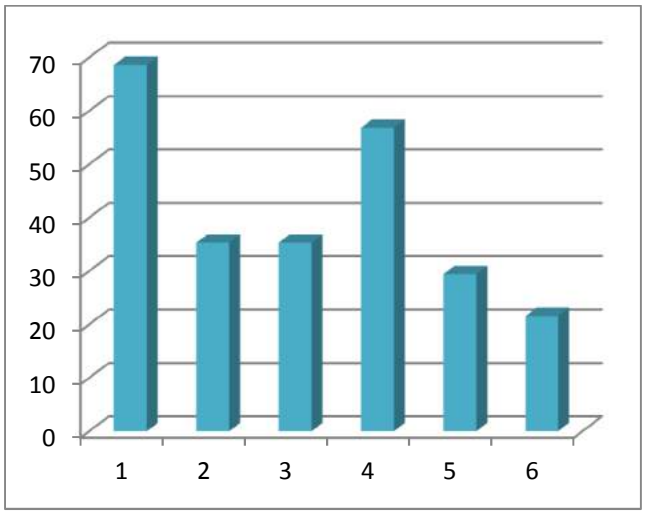
Description: 1 = Average Electronic Gadgets Owned; 2 = Average Gadgets Usage; 3 = Average Gadgets Versatility; 4 = Average Gadgets having Internet Facility; 5 = Average Measures Used in Demonetization.

Interpretation: For Young,the frequency of gadget owned with that of used, its versatility, internet and finally with measures used in demonetization has been observed well lesser and steeply falling, i.e., actual usage of modern banking in need is much more and highly associated with availability and versatility for middle aged.

2) Modern Banking Awareness and Its Usage Young

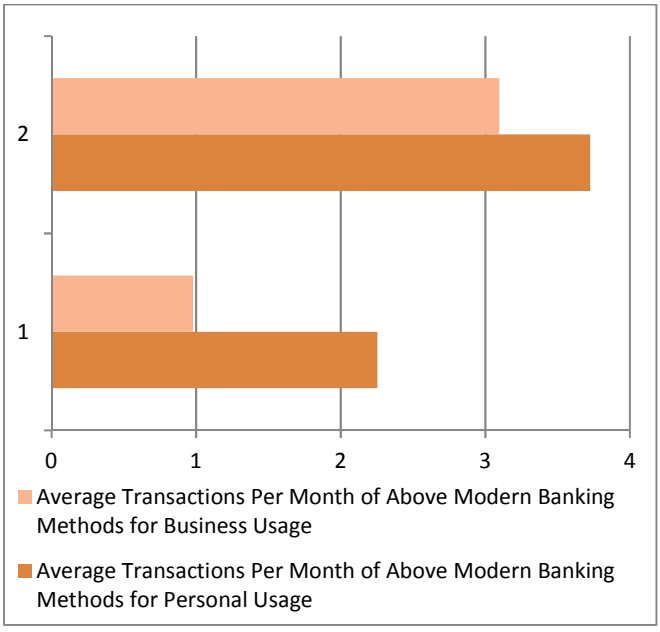


Middle Aged



Description: 1 = % Aware of Internet Banking; 2 = % Using Internet Banking; 3 = % Using Mobile Application (App) for Internet Banking (Including those who are not using it for Transacting); 4 = % Using ATM Banking Facility; 5 = % Using Teller Less Banking; 6 = % Using Green Panel based Banking.

Interpretation: As observed, Association between Percentage Aware of Internet Banking and percentage using Internet Banking, Mobile Application for Internet Banking, Teller Less Banking, and Green Panel based Banking is more again in case of middle aged. this interpret a high degree of association among awareness and usage of uncommon modes of modern banking in case of middle aged.

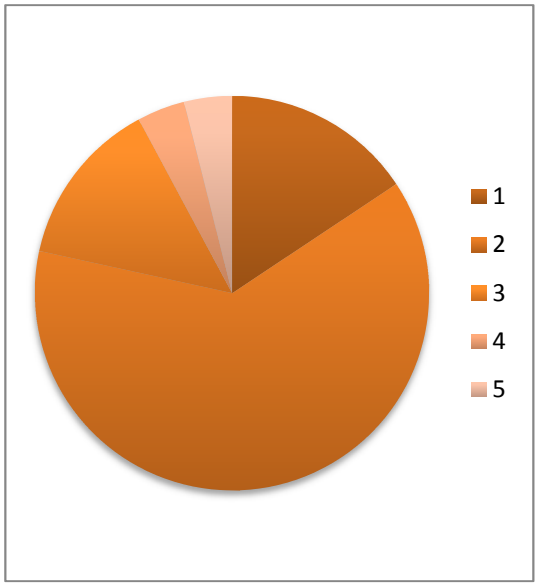


Description: 1 = Young; 2 = Middle Aged.

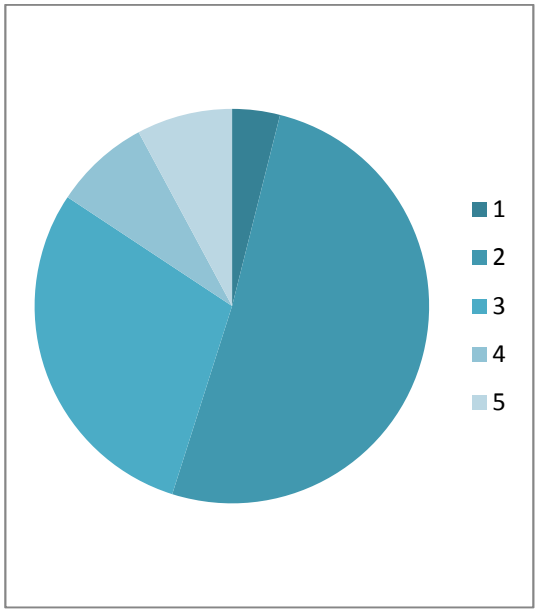
Interpretation: Interpreting Transactional Usage of modern banking, it high in case of both business and personal usage by middle aged and is more than twice in case of personal usage of modern banking measures for middle age, bearing their excessively involvement in managing the financial affairs of the family.

3) Ease in Cash less Transactions

Young



Middle Aged

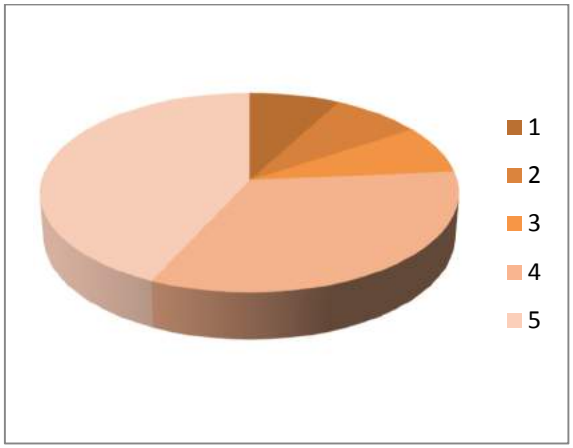


Description: 1 = Percentage who found cash less transactions Extremely Easy; 2 = Percentage who found cash less transactions Simple & Easy; 3 = Percentage who found cash less transactions Somewhat Complex; 4 = Percentage who found cash less transactions Extremely Complex; 5 = Percentage - NIL / NA.

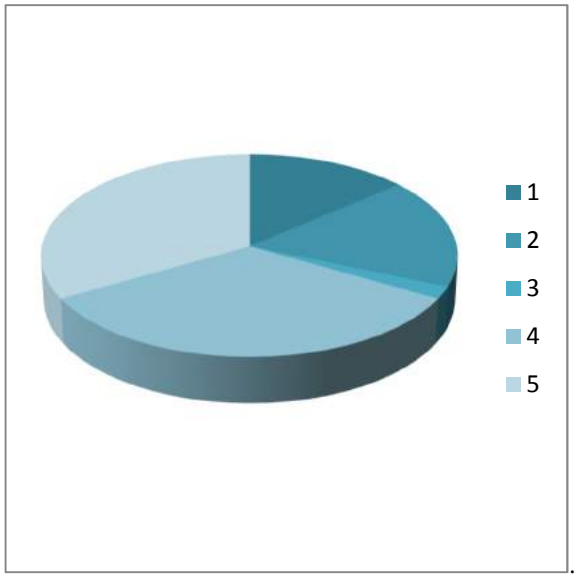
Interpretation: As it comes towards attitude averseness with the new technologies, youth is more adaptable to hence here the results interpret that irrespective of number of transactions carried, youth find cash less transaction much easier than the middle aged perceives and later, they are expected to use even more CLT.

4) Reason Behind Complexity

Young



Middle Aged

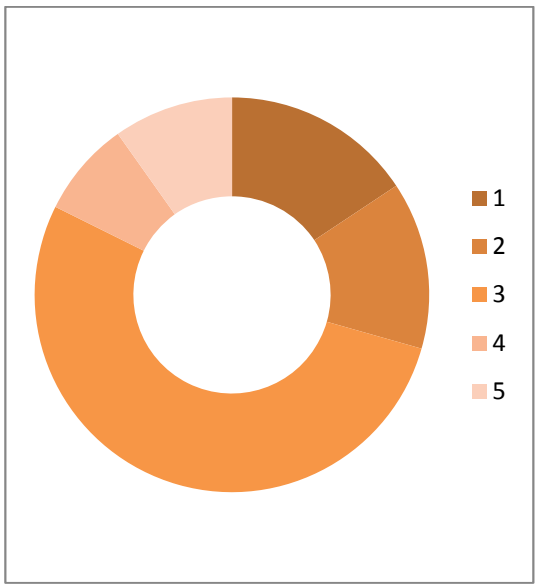


Description: 1 = Percentage found Banking Personnel's Non-response on Education and Redressal as the main reason; 2 = Percentage found Network Interface & Device Compatibility as the main reason; 3 = Percentage found Technical Illiteracy & Incompetency as the main reason; 4 = Percentage found Location & other problems as the main reason; 5 = Percentage - NIL / NA.

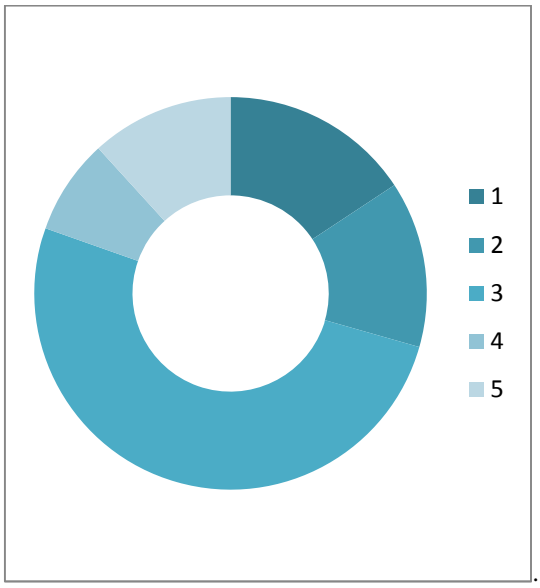
Interpretation:

5) Demonetization Impact

Young



Middle Aged



Description: 1 = Percentage Found Demonetization Extremely Hard; 2 = Percentage Found Demonetization Tough & Hard; 3 = Percentage Found Demonetization Somewhat Problematic, But Survivable; 4 = Percentage Found Demonetization Passive & Smooth; 5 = Percentage - NIL / NA.

6) Applied Data Analysis (Using relevant tests)

Middle Age	Young	Test Criterion
0.227593	0.242681	Correlation in use of electronic gadgets with internet facility
0.67635	0.66509	Correlation in Internet Facility with Internet Banking Awareness
0.410924	0.227778	Correlation in internet banking / tran. awareness with its use
0.229042	0.182574	Correlation in internet facility with internet banking / tran. Use
0.645905	0.513264	Covariance of internet banking / tran. Use with personal usage
0.357555	0.3391	Covariance of internet banking / tran. Use with business usage

6. CONCLUSION AND RECOMMENDATION

It has been observed from the study outcomes that irrespective of youth being more techno-savvy and gadget friendly, Middle aged segment covered in the region has shown its more averseness and usage for modern banking practices, being their more involved in Personal and Business Handling of funds. Majority of the sample covered Found Demonetization Somewhat Problematic, But Survivable. The results of scientific tests interpret that Hypothesis 1 is Rejected being Mean Usage of Young Lesser than that of Middle Aged, with Middle Aged having average transactions per month using the Modern Banking Methods, for personal usage equal to 3.72549 well higher to youth having 2.25490 transactions on average and equal to 3.09804 average transactions for business usage, excessively higher than youth having 0.98039 transactions on average, bearing the above reason. Hypothesis 2 is Accepted being Problems faced in Covered region considerably High at a Mean of 0.372549 compared to other Metro Regions. The data analysis of the tests applied shows us a more comprehensive picture, i.e., Correlation between the use of electronic gadgets and internet facility is higher in case of Young and Correlation between having Internet Facility with Internet Banking Awareness is more in case of Middle age, whereas Correlation between the internet banking or transaction awareness with the use of internet banking or transaction is around double in case of Middle age group and Correlation between having internet facility with internet banking use is again more in case of Middle age. Further, the Covariance of internet banking or transaction use with its

personal as well business usage is more in case of Middle age group with the personal usage being roughly near to double in figures that of business one. It interprets that irrespective of more electronic gadget availability and having the internet facility with that of youth, middle aged is more purported to use the modern banking measure for its personal as well as business usage with them being more averted towards using it for their personal needs, being them more involved in Handling of funds, on being considered more responsible for them. As was proposed in objectives, Versatility with new Systems & Technologies otherwise has a positive impact on Usage of modern Banking Facilities. The main problems faced by rural and remote region in using cash less transactions include Location & other problems, followed by problems such as Banking Personnel's Non-response, Network Interface and Device Compatibility, and Technical Illiteracy and Incompetency. Lesser availability or lack of facilities and other technical and structural problems have truly a negative impact on use of cash less transactions. Hence, the banking entities operating or planning to expand their business in the region, to offer its modern banking solutions need to take measures towards the technical literacy of its prospective consumer segments in consonance with the local bodies and government. Further, they may enhance their branch network or may utilize the services of their channel partners to better serve its remotely located customers. Researches ahead could be focused on formulating effective methods to enhance the technical literacy of the prospective consumer segments. New channels to explore the untapped segments for banking usage can be further augmented.

ACKNOWLEDGEMENTS

I like to thank Dr. Ampu Harikrishnan Nair (Registrar IIU-cum-Dean SBM IIU) and Ms. Bharti Singh (Head, Dept. of BM) for their humble support. -**RK**

REFERENCES:

Periodicals

[1] Biswal, K. C. (2015), Emerging Trends in the Indian Banking Sector- Challenges & Opportunities. International Journal of Advances in Arts, Sciences and Engineering.. Volume 3, Issue 6, Jan, pp. 8-17.

[2] Chauhan, V. & Choudhary, V. (2015) Internet Banking: Challenges and Opportunities in Indian Context. Apeejay Journal of Management Sciences and Technology. Volume 2, Issue 3, June, pp. 29-40.

[3] Mittal, P., Jadaun, S. S. & Dash, M. K. (2013), Computerization In Banks -Some Issues. IOSR Journal of Business and Management, www.iosrjournals.org. Volume 8, Issue 4, Mar - Apr, pp. 1-11.

[4] Sharma, M.C. & Sharma, A. (2012), Role of Information Technology in Indian Banking Sector. SHIV SHAKTI International Journal in Multidisciplinary and Academic Research, Volume 2, Issue 1, January-February, pp. 1-12.

[5] Sukanya, N. (2016), Trends, Implications and Prospects of Retail Banking in India. Acme Intellects International Journal of Research in Management, Social Sciences & Technology Volume 14, Issue 14, Apr, pp. 1-15.

Conference Proceedings

[6] Basavarajappa, M. T. (2012), E-Banking In India And Its Present Scenario And Future Prospects. UGC Sponsored National Conference on Information Technology and Its Implication on Banking Sector. January 1, pp. 1-9: Mangalore.

[7] Chakrabarty, K. C. (2009), Banking and finance in India – developments, issues and prospects. 62nd International Banking Summer School. August 31, pp. 1-12: New Delhi.

[8] Padmanabhan, G. (2012), Techno – banking – prospects and challenges. 6th ET Banking *Technology Conclave '12*, Mumbai. October 9, pp. 1-7.

Online Articles

[9] Deodhar, R. (2017), Black Money and Demonetization.30 January 2017. From: https://ssrn.com/abstract=2869172.

[10] Jayachandran, M. (2016), Making India a cashless economy.29 November 2016. From:http://www.livemint.com/Opinion/XGbavEnoeP7dZITeh21MRM/MakingIndiaacashlesseconomy.html?facet=print.

[11] Pahwa, N. (2016), Cash vs Digital Money: why going cashless is going to be tough in India.29 November 2016. From: http://www.medianama.com/2016/11/223-cashless-india/.

[12] "Withdrawal of Legal Tender Status for ₹ 500 and ₹ 1000 Notes: RBI Notice". Reserve Bank of India. 8 November 2016. Retrieved 8 November 2016. From: https://rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=38520

[13] "Here is what PM Modi said about the new Rs 500, Rs 2000 notes and black money". India Today. 8 November 2016. Retrieved 9 November 2016. From: http://indiatoday.intoday.in/story/live-pm-narendra-modi-addresses-nation/1/805755.html

[14] "Notes out of circulation".The Times of India. 8 November 2016. From: http://timesofindia.indiatimes.com/india/Rs-500-and-Rs-1000-notes-pulled-out-of-circulation-immediately-PM-Narendra-Modi/articleshow/55315473.cms

[15] Saikia, BijoySankar (18 Nov 2016). "Demonetisation may drag India behind China in GDP growth, rob fastest growing economy tag". The Economic Times.Retrieved 5 January 2017. From: http://economictimes.indiatimes.com/markets/stocks/news/demonetisation-to-drag-india-behind-china-in-gdp-growth-rob-fastest-growing-economy-tag/articleshow/55492970.cms

[16] "The dire consequences of India's demonetisation initiative".The Economist. 3 Dec 2016. Retrieved 20170105. From: http://www.economist.com/news/finance-and-economics/21711035-withdrawing-86-value-cash-circulation-india-was-bad-idea-badly

[17] Bhatt, Abhinav (8 November 2016). "Watch PM Modi's Entire Speech on Discontinuing 500, 1000 Rupee Notes". NDTV India.Retrieved 8 November 2016. From: http://www.ndtv.com/india-news/pm-modi-speaks-to-nation-tonight-at-8-pm-1622948

[18] "Demonetisation of Rs. 500 and Rs. 1000 notes: RBI explains". The Hindu. 8 November 2016. Retrieved 10 November 2016. From: http://www.thehindu.com/news/national/live-narendra-modis-address-to-nation/article9320548.ece

[19] "Sensex crashes 1,689 points on black money crackdown, U.S. election". The Hindu.Retrieved 9 November 2016. From: http://www.thehindu.com/business/markets/stock-market-news-november-9-2016/article9322930.ece

[20] "India demonetisation: Chaos as ATMs run dry". Al Jazeera. Retrieved 9 November 2016. From: http://www.aljazeera.com/news/2016/11/india-demonetisation-chaos-atms-run-dry-161109061403011.html

[21] "Demonetisation: Chaos grows, queues get longer at banks, ATMs on weekend". 12 November 2016. From: http://www.indianexpress.com/article/india/india-news-india/demonetisation-chaos-grows-queues-get-longer-at-banks-atms-on-weekend-4371373/

[22] "100 days of demonetisation: Stories of hardship". From: http://www.aljazeera.com/indepth/features/2017/02/100-days-demonetisation-stories-hardship-170215154335682.html

[23] "India: Demonetisation takes its toll on the poor". Al Jazeera. 16 November 2016. Retrieved 17 November 2016. From: http://www.aljazeera.com/news/2016/11/india-demonetisation-takes-toll-poor-161116172745225.html

[24] "Demonetisation Death Toll Rises To 25 And It's Only Been 6 Days". Huffington post. Retrieved 15 November 2016. From: http://www.huffingtonpost.in/2016/11/15/demonetisation-death-toll-rises-to-25-and-its-only-been-6-days/

[25] "Demonetisation: Opposition calls for countrywide protest on November 28". The Indian Express.Retrieved 23 November 2016. From: http://www.indianexpress.com/article/india/india-news-india/demonetisation-oppostion-parties-countrywide-protest-bandh-call-november-28-4391208/

[26] "Demonetisation: Opposition parties join hands, to hold 'protest day' on November 28". The Indian Express.Retrieved 24 November 2016. From: http://www.indianexpress.com/article/india/politics/demonetisation-opposition-parties-join-hands-to-hold-protest-day-on-november-28-4391937/

[27] " 'Demonetisation protest sure to succeed with people's support' ". The Economic Times. Retrieved 24 November 2016. From: http://economictimes.indiatimes.com/news/economy/policy/demonetisation-protest-sure-to-succeed-with-peoples-support/articleshow/55607966.cms

[28] "Petitions against demonetization; Centre files caveat in SC Latest News & Updates at Daily News & Analysis". 10 November 2016. From: http://www.dnaindia.com/money/report-petitions-against-demonetization-centre-files-caveat-in-sc-2272138

[29] "Currency ban no surgical strike, it's carpet bombing: SC to Modi". From: http://newsable.asianetnews.tv/money/sc-currency-ban-affidavit

[30] PTI. "AmartyaSen terms demonetisation a despotic action". From: http://www.thehindu.com/news/national/Amartya-Sen-terms-demonetisation-a-despotic-action/article16730675.ece

[31] Desk, India.com News (26 November 2016). "AmartyaSencriticisesdemonetisation drive, says Narendra Modi declared all Indians 'crook' ". From: http://www.india.com/news/india/amartya-sen-criticises-demonetisation-drive-says-narendra-modi-declared-all-indians-crook-1665167/

[32] "Demonetisation damage greater than its benefits, says Kaushik Basu". Business Standard. 12 November 2016. Retrieved 12 November 2016. From: http://www.business-standard.com/article/economy-policy/demonetisation-damage-greater-than-its-benefits-says-kaushik-basu-116111101733_1.html

[33] PTI (11 November 2016). "GST good economics; demonetisation is not: Kaushik Basu". The Economic Times.Retrieved 12 November 2016. From: http://economictimes.indiatimes.com/news/economy/policy/gst-good-economics-demonetisation-is-not-kaushik-basu/articleshow/55375545.cms

[34] "In India, Black Money Makes for Bad Policy". The New York Times. 27 November 2016. From: http://www.nytimes.com/2016/11/27/opinion/in-india-black-money-makes-for-bad-policy.html

[35] Sen, Pronab (14 November 2016). "Demonetization is a hollow move". From: http://www.livemint.com/Opinion/uzvIE84KGXy1xvp06pTazM/Demonetization-is-a-hollow-move.html

[36] Patnaik, Prabhat (9 November 2016). "Demonetization: Witless and Anti People".The Citizen.Retrieved 13 November 2016. From: http://www.thecitizen.in/index.php/NewsDetail/index/1/9151/Demonetization-Witless-and-Anti-People

[37] Ninan, T. N. (2 December 2016). "T N Ninan: Four weeks later" – via Business Standard. From: http://www.business-standard.com/article/opinion/t-n-ninan-four-weeks-later-116120201131_1.html

[38] "HDFC Chairman Deepak Parekh hits out at demonetisation drive, says it derailed economy". 8 December 2016. From: http://www.financialexpress.com/economy/hdfc-chairman-deepak-parekh-hits-out-at-demonetisation-drive-says-it-derailed-economy/467791/

[39] "HDFC's Deepak Parekh says economy has derailed in short term due to demonetisation". 8 December 2016. From: http://www.firstpost.com/business/hdfcs-deepak-parekh-says-economy-has-derailed-in-short-term-due-to-demonetisation-3145486.html

[40] "Demonetisation idea wrong, don't blame its execution: Rajiv Bajaj". 17 February 2017. From: http://www.indianexpress.com/article/business/economy/demonetisation-idea-wrong-dont-blame-its-execution-rajiv-bajaj-4529180/

[41] "One Month Of Pain And Harrassment, PM Must Clarify: Mamata Banerjee". From: http://www.ndtv.com/india-news/one-month-of-pain-and-harrassment-pm-must-clarify-mamata-banerjee-1635504

[42] ANI (12 November 2016). "Demonetization is nothing but a big BJP scam: Kejriwal" – via Business Standard. From: http://www.business-standard.com/article/news-ani/demonetization-is-nothing-but-a-big-bjp-scam-kejriwal-116111200849_1.html

[43] "Kerala CM PinarayiVijayan, ministers stage dharna outside RBI office Latest News & Updates at Daily News & Analysis". 18 November 2016. From: http://www.dnaindia.com/india/report-kerala-cm-pinarayi-

vijayan-ministers-on-dharna-say-demonetisation-destroying-cooperative-sector-2274629

[44] Raghav Bahl (8 November 2016). "Dear PM Modi, Demonetisation 'Brahmastra' Could Have Spared The Poor". Bloomberg Quint. Retrieved 12 November 2016. From: http://www.bloombergquint.com/opinion/2016/11/11/dear-pm-modi-demonetisation-brahmastra-could-have-spared-the-poor

[45] "Govt's demonetisation move fit for country's security, development: HC". The Economic Times. 10 November 2016. Retrieved 10 November 2016. From: http://economictimes.indiatimes.com/articleshow/55353472.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

[46] "PILs in Supreme Court against making Rs 500, Rs 1000 notes illegal".India Today. 10 November 2016. Retrieved 10 November 2016. From: http://indiatoday.intoday.in/story/pils-supreme-court-rs-500-rs-1000-notes-illegal/1/807124.html

[47] "Months before demonetisation, many ministers had large amount of cash in hand: Report". 2 December 2016. From: http://www.indianexpress.com/article/india/demonetisation-ministers-cash-jaitley-modi/

[48] Bhatnagar, Gaurav Vivek. "Did Ministers Queue Up To Exchange Their Currency Notes, Asks RTI Activist". From: http://www.thewire.in/83783/ministers-queue-exchange-currency-notes-asks-rti-activist/

[49] Forbes, Steve. "What India Has Done To Its Money Is Sickening And Immoral". From: http://www.forbes.com/sites/steveforbes/2016/12/22/what-india-has-done-to-its-money-is-sickening-and-immoral/

[50] "HTLS 2016: Demonetisation gains uncertain, says Nobel laureate Paul Krugman". 2 December 2016. From: http://www.hindustantimes.com/india-news/htls-2016-demonetisation-gains-uncertain-says-noble-laureate-paul-krugman/story-dFszJMERsydirqemQXcZ7L.html

[51] "Modi's demonetisation move a reckless bungle: Foreign media". The Times of India. 28 December 2016. From: http://timesofindia.indiatimes.com/india/modis-demonetisation-move-a-reckless-bungle-foreign-media/articleshow/56210502.cms

[52] Singh, gayeti."Worst Mistake of PM Modi". From: http://www.thecitizen.in/index.php/OldNewsPage/?Id=9260

[53] "Demonetisation atrociously planned, little evidence it combatted black money: New York Times". From: http://indiatoday.intoday.in/story/demonetisation-atrociously-planned-and-executed-nyt/1/854314.html

[54] "Little evidence that demonetisation has succeeded in combating corruption: New York Times". 10 January 2017. From: http://www.indianexpress.com/article/india/indians-suffering-after-atrociously-planned-note-ban-nyt-4468403/

[55] "India's Botched War on Cash". From: https://hbr.org/2016/12/indias-botched-war-on-cash

[56] Goswami, Ranjit (25 November 2016). "Modi's bank note ban has inflicted pointless suffering on India's poorest". The Conversation.Retrieved 25 January 2017. From: https://theconversation.com/modis-bank-note-ban-has-inflicted-pointless-suffering-on-indias-poorest-69157

[57] Livemint (24 November 2016). "Cash crunch: Analysts cut India GDP growth forecast". From: http://www.livemint.com/Politics/gG3pF45hFU53GyXE1BwIuJ/Cash-crunch-Analysts-cut-India-GDP-growth-forecast.html

[58] "Demonetisation a big blow! GDP growth may dip below 6% in FY17". 26 December 2016. From: http://www.financialexpress.com/economy/economists-bearish-on-the-india-growth-story-predicts-sub-6-per-cent-for-fy-2017/486381/

[59] "World Economic Outlook Database".International Monetary Fund. October 2016. From: http://www.imf.org/external/pubs/ft/weo/2016/02/weodata/weorept.aspx?sy=2014&ey=2021&scsm=1&ssd=1&sort=country&ds=.&br=1&pr1.x=26&pr1.y=13&c=534&s=NGDPD&grp=0&a=

[60] Choudhury, Saheli Roy (17 January 2017). "India set for slowest growth period as demonetization dents economy". From: http://www.cnbc.com/2017/01/17/india-demonetisation-news-india-could-see-four-consecutive-quarters-of-below-7-percent-growth.html

[61] Seth, Dilasha (6 December 2016). "Slowdown due to demonetisation: PMI services shrinks in November after 17 months" – via Business Standard. From: http://www.business-standard.com/article/economy-policy/slowdown-due-to-demonetisation-pmi-services-shrinks-in-november-after-17-months-116120501411_1.html

[62] "5 Bleak Numbers That Show Demonetisation Impact On The Economy". From: http://www.huffingtonpost.in/2017/01/03/five-worrying-numbers-that-show-demonetisation-impact-on-economy/

[63] "Demonetisation impact: Three sets of numbers tell us how Modi's gamble has slowed the economy". 3 January 2017. From: http://www.firstpost.com/business/demonetisation-impact-three-sets-of-numbers-tell-us-how-modis-gamble-has-slowed-the-economy-3185066.html

Other References

[64] Chatterjee, B. &Banerji, A. (2016), The Impact of Demonetization in India. squirepattonboggs.com. 25405/12/16, pp. 1-2.

[65] Deloitte (2016), Demystifying demonetization. pp. 1-9.

[66] Gorlamandala, R. (2016), Demonetisation is the tool but cashless economy is the goal of India. www.tat.capital.com. December 31, pp. 1-14: Tat Capital - Corporate Finance & FX Advisory, Sydney.

[67] HDFC Bank Investment Advisory Group (2016), Demonetization and its impact - Event Update. November 11, pp. 1-3.

[68] Mattewos, K. (2016), Challenges and Prospect of E-Banking in Ethiopia. January 22, pp. 1-70: Addis Ababa University, Ethiopia.

[69] Sabnavis, M. & Sawarkar, A. (2016), Economic consequences of demonetization of 500 and 1000 Rupee Notes. CARE Ratings Professional Risk Opinion. www.careratings.com, November 09, pp. 1-4.

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

Empirical Study on Interaction between Foreign Exchange Rate and Stock Market Indices Using Econometrics

Thilak Venkatesan[1], Amrutha Ananya B.R.[2]

[1]Asst. Professor, PG- Commerce Department, Presidency College
v.thilak@gmail.com
[2]Student, PG- Commerce Department, Presidency College
amrutha.ananya@gmail.com

Abstract: ***India is one of the most prominent emerging country, sought to lead the globe in terms of growth. The leading indicators of the country namely the Sensex and the Nifty prove the very fact, by gaining new highs in the recent times. The policy implementation by the current government & the RBI, focuses more to ensure sustainable growth with lesser volatility. The foreign exchange rate seems to have stabilized from dropping to a low of Dollar-Rupee of Rs. 70. The measures taken by RBI justify the current move backed by the Government's policy of demonetization and attracting higher inflows. The various studies indicate that there is interaction among these macroeconomic variables. In this context, the study attempts to understand the linkages between the foreign flows and the Nifty in the Indian context. The relevant data was collected from secondary sources for a period of 15 years. The tools used for the analysis were Vector auto regression, Granger Causality and ARDL model. The findings suggest that the Pound inflows are highly significant in influencing the Nifty. It was observed that the Euro and the Yen as well influence the Nifty at 10% significance level.***

Keywords: ***Macro economic variables, Econometric Model, Stationarity, Vector auto regression, ARDL Model, Granger Causality.***

JEL Classification: B22, E44, E47, F31, G15, O11

1. INTRODUCTION

Stock exchange is a reliable barometer which helps to measure the economic condition of a country. Stock market is also known as mirror which reflects the economic condition of country. The volatility in stock exchange has an impact on the economy. Understanding the origin of stock market volatility is a topic of considerable interest to policy makers and financial analyst. Policy makers are interested in main determinants of volatility and its spill-over effects on real activities of the economy. On the other hand, financial analysts are interested in the direct effects, the volatility that exerts on pricing of securities and appropriate hedging in terms of derivatives. The most intimidating characteristics of the stock market is volatility, because it presents the most important opportunity for advantageous investing for those who understand it and have the patience and optimistic to take advantage of it. There are various macro-economic factors that cause the volatility in the stocks viz. the interest rate, inflation rate, economic policies, foreign and domestic institutional investments, foreign trade etc.

The economy of India had undergone significant policy shifts from the beginning of 1990's. The globalisation has led many Indian companies to expand their business in many foreign countries and many foreign companies to trade with India. The most vital liberalisation policy was lesser restrictions on foreign capital control. So, all the above reasons have made foreign institutional investments and foreign trade important factors to influence the economy. These have heightened the interest of MNCs in developing techniques and strategies for foreign exchange exposure management. The barometer of the economy, the Nifty has more influence by the foreign flows and the study focuses to understand the interaction between the foreign exchange rates and the Nifty.

2. REVIEW OF LITERATURE

Md. Lutfur Rahman and Jashim Uddin (2009) investigated the interactions between stock prices and exchange rates in three emerging countries such as Bangladesh, India and Pakistan. The empirical results of their study showed that there was no co integrating relationship between stock prices and exchange rates and then there was no way causal relationship between stock prices and exchange rates in the countries. They have concluded stating that stock prices do not influence exchange rates and past values of stock prices cannot be used to improve the forecast of future exchange rates

Maheenjamil and Naeem Ullah (2013) analysed the impact of US Dollar to Pakistan Rupee exchange rate on the stock market return in Pakistan by taking the monthly data of KSE 100 index data for a time period of 1998 to 2009. They have found that exchange rate had significant impact on stock market return by conducting VECM analysis which had shown that a relationship between the two variables exists in the short run in Pakistan. They had concluded by stating that in short run, market corrects itself to the changes in exchange rate to be in equilibrium

Abdul Rasheed Zubair (2013) estimated the causal relationship between stock market index and monetary indicators like exchange rate and money supply before and during the global financial crisis for Nigeria, using monthly data for the period 2001–2011. The results indicated absence of long-run relationship before and during the crisis and then presence of uni-directional causality before the crisis, while during the period of the crisis there was absence of causality between the variables. So he concluded stating that there is no existence of link between the exchange rate and stock market index for both the period in Nigeria during the period under study.

Rabia Najaf and Khakan Najaf (2016) analysed the relationship between Indian rupee-US dollar exchange rate and Nifty returns. By taking the data from period of October 2008, to march 2010, they had proved that exchange rate and Nifty returns are non-normally disturbed and there was negative relationship between Exchange rate and Nifty returns. Then they had done Granger causality test which had shown that there is unidirectional relationship between Indian rupee-US dollar exchange rate and Nifty returns. They had concluded by stating that if there was increase in the nifty returns then exchange rate will decline.

Oguzhan Ozcelebi and Nurtac Yildirim (2016) examined how exchange rate and stock prices interact in Eastern Europe? Their empirical findings imply that for all cases, the fluctuations in exchange rates may have a considerable role in the variation in stock markets, while variations in stock prices may have macroeconomic consequences by leading to changes in real exchange rates. They also found that the relationship between real exchange rates and stock prices in these countries may be induced by the monetary policy decisions and other domestic and foreign factors.

3. STATEMENT OF PROBLEM

Stock market plays a crucial role in development of a country and the stock market index is an economic barometer. There are various factors that influence stock market index of a country such as economic policies, political forces, performance of top most companies, major industries growth rate, foreign and domestic institutional investments, foreign trade. So the paper attempts to model the foreign exchange rates influences on the stock market index.

4. OBJECTIVES OF STUDY

- To identify the nature of movement between the Exchange rate and the stock market Indices.
- To explain the relationship between the Nifty & exchange rates
- To construct a model on the relationship Nifty & exchange rates
- To appraise the model in terms of causal relationship among the variables.

5. METHODOLOGY

The data for the research was collected through secondary sources. The monthly average of Rupee-US dollar exchange rate, Rupee- Euro exchange rate, Rupee- Pound exchange rate, Rupee-Yen exchange rates, the Nifty and Sensex were collected from January 2000 to July 2016.

6. STATIONARITY TEST

Stationarity means a statisticalproperty of time series whosemean, variance, autocorrelation, etc. are all constant over time. Stationarity can be defined in precise mathematical terms, but for our purpose we mean a flat looking series, without trend, constant variance over time, a constant autocorrelation structure over time and no periodic fluctuations. A stationary series is relatively easy to predict as you can simply predict that its statistical properties will be the same in the future as they have been in the past, so we can use this stationary series to predict future using past which is an important criterion to conduct further analysis.

A series is said to be (weakly or covariance) stationary if the mean and auto-covariance's of the series do not depend on time. ADF test can be specified with no drift and no trend; with trend and no drift; lastly with both trend and drift as follows.

$\Delta Yt = \delta\ Yt-1 + \sum \alpha i\ \Delta Yt-1 + Ut$ — No drift, no intercept

$\Delta Yt = \beta\ 0 + \delta\ Yt-1 + \sum \alpha i\ \Delta Yt-1 + Ut$ — Intercept, no drift term

$\Delta Yt = \beta\ 0 + \beta 1t + \delta\ Yt-1 + \sum \alpha i\ \Delta Yt-1 + Ut$ — With intercept and trend

Furthermore, Phillips-Perron unit root tests are used to reinforce the ADF. One advantage that the Phillips-Perron (PP) test has over the ADF test is that it is robust with respect

to unspecified autocorrelation and heteroscedasticity in the disturbance process of the test regression, Brooks (2000). Therefore, the PP test works well with financial time series. The two tests specify the Null hypothesis (H0) as that the time series has unit root, thus the time series is non-stationary against the Alternative Hypothesis (H1) that the time series has no unit root, thus a stationary time series:

H0: Time series has a unit root ($\delta = 1$)

H1: Time series has no unit root ($\delta \neq 1$)

7. CO INTEGRATION TEST

Co integrationis astatisticalproperty of a collection oftime seriesvariables. First, all of the series must be integrated of order 1. Next, if a linear combination of this collection is integrated of order zero, then the collection is said to be co-integrated. Co integration has become an important property in contemporary time series analysis as unit root processes have non-standard statistical properties, so that conventional econometric theory methods do not apply to them For instance, astock market indexand the price of its exchange ratesmove through time, each roughly following arandom walk. Testing the hypothesis that there is astatistically significantconnection between the stock market index and the exchange rate could now be done by testing for the existence of a co integrated combination of the two series.

8. LAG LENGTH CRITERIA TEST

This test was conducted to select the appropriate number of lags to be taken to create the Vector Auto regression model.

9. VECTOR AUTO REGRESSION(VAR)

Vector auto regression(VAR) is aneconometric modelused to capture the linear interdependencies among multipletime series. VAR models generalize the univariateautoregressive model(AR model) by allowing for more than one evolving variable. All variables in a VAR enter the model in the same way, each variable has an equation explaining its evolution based on its ownlagged values, the lagged values of the other model variables, and anerror term.

10. HETEROSKEDASTICITY TEST

Heteroskedasticity is the circumstance in which the variability of a variable is unequal across the range of values of a second variable that predicts it. Breusch-Pagan-Godfrey Test is used for heteroskedasticity for a linear regression model. According to this test estimated variance of the residuals from a regression are dependent on the values of the independent variables then there is heteroskedasticity.

11. NORMALITY TEST

Normality Test is used to determine whether sample data has been drawn from a normally distributed population or not.

Stability test (Cusum test) :

The CUSUM test is based on the cumulative sum of the recursive residuals. This option plots the cumulative sum together with the 5% critical lines. The test finds parameter instability if the cumulative sum goes outside the area between the two critical lines.

12. GRANGER CAUSALITY TEST

A correlation betweenvariables, however, does not automatically mean that the change in onevariableis the cause of the change in the values of the other variable.Causationindicates that one event is the result of the occurrence of the other event; i.e. there is acausalrelationship between the two events. So, causality means that the change in onevariableis the cause of the change in the values of the other variable.

13. DATA ANALYSIS AND INTERPRETATION:

Augmented Dickey Fuller test was used to test the stationarity of the variables. The results of ADF demonstrated the variables stationary at first difference. In case of the variables at level, the null hypothesis cannot be rejected as the p-values are greater than 5%. The Null is rejected in case of Ist difference.

Variables	P- values at Level	P- values at I st difference
Nifty	0.9508	0.0000
US dollar	0.9532	0.0000
Euro	0.5949	0.0000
Pound	0.3671	0.0000
Yen	0.7466	0.0000

14. TEST FOR COINTEGRATION

Date: 07/19/17 Time: 23:35				
Sample (adjusted): 2000M06 2016M07				
Included observations: 194 after adjustments				
Trend assumption: Linear deterministic trend				
Series: EURO NIFTY POUND USD YEN SENSEX				
Lags interval (in first differences): 1 to 4				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.106894	69.17755	95.75366	0.7493
At most 1	0.089466	47.24575	69.81889	0.7516
At most 2	0.068414	29.06322	47.85613	0.7653
At most 3	0.044400	15.31504	29.79707	0.7593
At most 4	0.025103	6.504446	15.49471	0.6359
At most 5	0.008072	1.572312	3.841466	0.2099
Trace test indicates no cointegration at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.106894	21.93180	40.07757	0.9194
At most 1	0.089466	18.18253	33.87687	0.8683
At most 2	0.068414	13.74818	27.58434	0.8396
At most 3	0.044400	8.810591	21.13162	0.8474
At most 4	0.025103	4.932134	14.26460	0.7504
At most 5	0.008072	1.572312	3.841466	0.2099
Max-eigenvalue test indicates no cointegration at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

The Johansen co-integration test was used to check the co-integration of the variables at level, and it proved that, there is no-cointegration among the variables in both Trace statistics and the Max-Eigen value. The P-values of the variables were not significant to observe cointegration. Hence, we conclude that the variables are not cointegrated and Vector auto regression was used to find the relationship between the variables.

15. VECTOR AUTO REGRESSION

The estimation of VAR was done using stationary Ist difference of Nifty, USD, Euro, Pound, and, Yen. The results are as shown below.

System: UNTITLED				
Estimation Method: Least Squares				
Date: 07/18/17 Time: 11:32				
Sample: 2000M04 2016M07				
Included observations: 196				
Total system (balanced) observations 980				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.201356	0.090308	2.229652	0.0260
C(2)	-0.130575	0.095370	-1.369139	0.1713
C(3)	-45.74593	29.15567	-1.569023	0.1170
C(4)	-21.89090	29.14510	-0.751100	0.4528
C(5)	4.708243	16.52121	0.284982	0.7757
C(6)	-16.07997	16.68581	-0.963691	0.3355
C(7)	3.658148	14.26241	0.256489	0.7976
C(8)	33.87471	13.62868	2.485545	0.0131
C(9)	20.65342	15.80482	1.306780	0.1916
C(10)	-9.624298	15.89719	-0.605409	0.5451
C(11)	36.13540	17.22924	2.097330	0.0362
Observations: 196				
R-squared	0.101281	Mean dependent var		35.20383
Adjusted R-squared	0.052702	S.D. dependent var		228.8302
S.E. of regression	222.7187	Sum squared resid		9176670.
Durbin-Watson stat	1.933963			

Equation: DNIFTY = C(1)*DNIFTY(-1) + C(2)*DNIFTY(-2) + C(3)*DUSD(-1) + C(4)*DUSD(-2) + C(5)*DEURO(-1) + C(6)*DEURO(-2) + C(7)*DPOUND(-1) + C(8)*DPOUND(-2) + C(9)*DYEN(-1) + C(10)*DYEN(-2) + C(11)

The VAR estimates were significant with lagged values of Nifty & the Pound. The probability of C(1) and C(8) are less than 0.05 or 5% which infers that;

- DNIFTY(-1) i.e. previous period differenced nifty values and

- DPOUND (-2) i.e. differenced pound values of two lagged periods were significant in influencing the current nifty values. So, the model was created using these two variables.

ARDL Model:

DNIFTY c 0.20135550888*DNIFTY (-1) 33.8747095949*DPOUND(-2)

Dependent Variable: DNIFTY				
Method: Least Squares				
Date: 07/18/17 Time: 11:58				
Sample (adjusted): 2000M04 2016M07				
Included observations: 196 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25.53674	16.04736	1.591335	0.1132
0.20135550888*DNIFTY(-1)	1.077336	0.345795	3.115530	0.0021
33.8747095949*DPOUND(-2)	0.553110	0.245882	2.249490	0.0256
R-squared	0.070415	Mean dependent var		35.20383
Adjusted R-squared	0.060782	S.D. dependent var		228.8302
S.E. of regression	221.7668	Akaike info criterion		13.65632
Sum squared resid	9491837.	Schwarz criterion		13.70649
Log likelihood	-1335.319	Hannan-Quinn criter.		13.67663
F-statistic	7.309795	Durbin-Watson stat		1.963003
Prob(F-statistic)	0.000871			

The model was observed significant from the P-value of the F-statistic (0.000871), No autocorrelation with DW Stat. of 1.96 and an R-squared value of 7%. The current value can be predicted by past Nifty value and the pound value with an co-efficient of determination of 7%.

The model was tested for Auto-correlation, heteroskedasticity, normality, and Stability.

Correlation test:

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.556876	Prob. F(2,191)	0.5739
Obs*R-squared	1.136282	Prob. Chi-Square(2)	0.5666

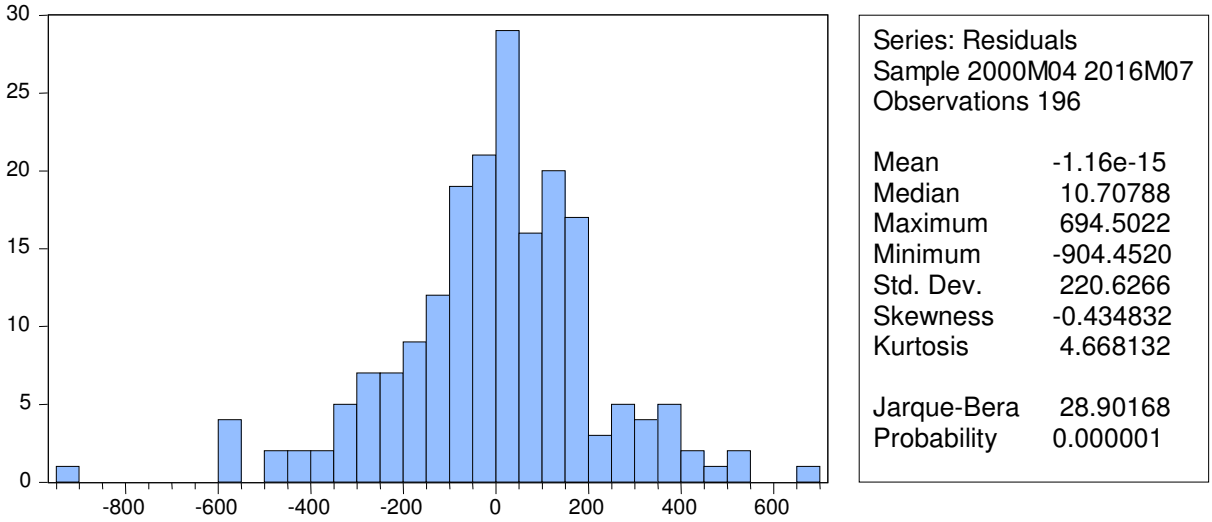
From the above result of the serial correlation test, the p-value of the chi square is more than 0.05 or 5% which is 56.66% and therefore we cannot reject the null hypothesis that there is no serial correlation in the residuals.

Heteroskedasticity test:

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.917739	Prob. F(2,193)	0.4012
Obs*R-squared	1.846449	Prob. Chi-Square(2)	0.3972
Scaled explained SS	3.283634	Prob. Chi-Square(2)	0.1936

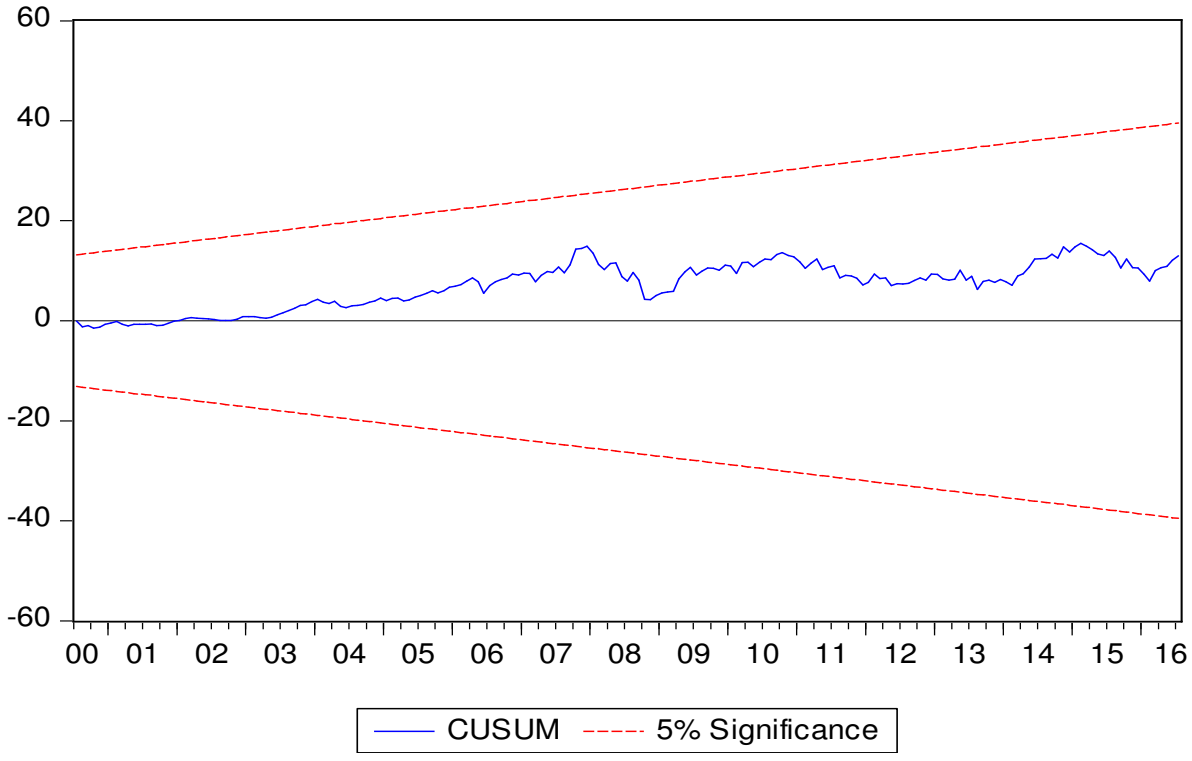
From the above, the p-value of the chi square with the observed R square is more than 0.05 or 5% that is 0.1936 or 19.36% thus the residuals are homoscedastic.

Normality test:



From the above, it was inferred from the P-value that the residuals are not normally distributed.

Stability test:



From the above graph, the blue line of the data is within the 5% significance lines. This infers that the model is stable.

Granger Causality test:

Pairwise Granger Causality Tests			
Date: 07/18/17 Time: 13:04			
Sample: 2000M01 2016M07			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
DUSD does not Granger Cause DNIFTY	196	0.32303	0.7243
DNIFTY does not Granger Cause DUSD		1.16432	0.3143
DEURO does not Granger Cause DNIFTY	196	0.47021	0.6256
DNIFTY does not Granger Cause DEURO		2.75480	0.0662
DPOUND does not Granger Cause DNIFTY	196	2.14945	0.1194
DNIFTY does not Granger Cause DPOUND		6.35075	0.0021
DYEN does not Granger Cause DNIFTY	196	0.23580	0.7902
DNIFTY does not Granger Cause DYEN		0.19229	0.8252
DEURO does not Granger Cause DUSD	196	1.51757	0.2219
DUSD does not Granger Cause DEURO		0.19571	0.8224
DPOUND does not Granger Cause DUSD	196	0.75407	0.4718
DUSD does not Granger Cause DPOUND		0.50302	0.6055
DYEN does not Granger Cause DUSD	196	1.59824	0.2049
DUSD does not Granger Cause DYEN		1.74848	0.1768
DPOUND does not Granger Cause DEURO	196	0.45742	0.6336
DEURO does not Granger Cause DPOUND		0.18850	0.8284
DYEN does not Granger Cause DEURO	196	2.50317	0.0845
DEURO does not Granger Cause DYEN		0.61956	0.5393
DYEN does not Granger Cause DPOUND	196	2.55921	0.08
DPOUND does not Granger Cause DYEN		0.57925	0.5613

The results of pairwise Granger causality, suggests that Yen Granger causes the Euro & the Pound at 10% significance level, the Nifty Granger causes the Pound at 5% and the Euro at 10% level of significance respectively. The causality was observed to be unidirectional.

16. CONCLUSION

From the analysis, it can be concluded that nifty was influenced by its past values and pound values of two lagged periods and the other exchange rates were not significant in influencing the nifty value. The model which was created using the nifty past value and pound value was stable and the residuals were homoscedastic and not normally distributed. From the granger causality test it was found that the relationship that exists between nifty and pound was unidirectional.

17. LIMITATIONS

The secondary data collected for analysis is limited to 16years from 2000 to 2016. There was no information about exchange rates other than USD, Euro, Pound, and Yen. So, it was unable to see the impact of other country's currency exchange rate on Indian stock market. It was found that only pound was significant in influencing nifty, so the model was created using that exchange rate.

REFERENCES

[1] Rahman, M. L., & Uddin, J. (2009). Dynamic relationship between stock prices and exchange rates: evidence from three south Asian countries.*International Business Research*, 2 (2), 167.

[2] Jamil, M., & Ullah, N. (2013). Impact of foreign exchange rate on stock prices. *Journal of Business and Management*, 7 (3), 45-51.

[3] Zubair, A. (2013). Causal relationship between stock market index and exchange rate: Evidence from Nigeria.*CBN Journal of Applied Statistics*, 4(2), 87-110.

[4] Najaf, R., & Najaf, K. (2016).A Study of Exchange Rates Movement and Stock Market Volatility. Retrieved from: *http://www.crsdindia. com/ajmecs. html*,1(1), 32-38.

[5] Ozcelebi, O., & Yildirim, N. (2016). Exchange Rates and Stock Prices: How Do They Interact in Eastern Europe?. Argumenta *Oeconomica*, (1 (36)), 31-65.

[6] Gary Koop (2007), *Analysis of Economic Data*. Second edition, John Wiley & sons

[7] Damodar. N. Gujarati (2012), *Basic Econometrics*, Fifth edition, Tata Mcgraw Hill.

[8] Apte P. G. (2014). *International Financial Management*, Tata Mcgraw Hill

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

A Conceptual Study of "Skill India" Mission Bridge to "Make in India" Program

Ashutosh D. Gaur[1], Dr. Jasmin Padiya[2]

[1]Doctoral Scholar, School of Doctoral Research and Innovation, GLS University, Ahmedabad
me@ahutoshgaur.co.in
[2]Associate Professor, GLS University, Ahmedabad
jasmin.padiya@glsuniversity.co.in

Abstract: **This paper examines Skill India mission and its relevance to Make in India programme. It explained disconnects of skill India program in terms of demand and supply of work force and highlights the challenges in Make in India. The government of India has taken various initiatives to bridge the gap between employment linked skill development of labour for the domestic and international market.**

National policy for skill development and entrepreneurship was announced to skill, reskill and upskill the youth of the country under Skill India mission and Make in India Program was announced to make India a manufacturing hub. The main objective of both program is development of infrastructure, invite foreign direct investment, improvement in standard of living of the people and to eradicate the unemployment by creating more jobs opportunities.

This research paper has made a literature review analysis regarding its challenges, prospects of skill India and Make in India. Secondary data collected from various websites, journals, etc.

Keywords: **Skill India, Make in India, Employment, Economic growth and Entrepreneurship**

"I call upon the nation to take a pledge to make India the Skill Capital of the world"
Seekho Hunar. Bano Honhaar!
Mr. Narendra Modi Prime Minister of India

1. INTRODUCTION

Prime minister of India has announced Make in India programme from the ram pass of Red fort on his maiden speech on Independence Day. The core massage was the to create India a manufacturing hub. The aim of this initiative was to make manufacturing sector to contribute 25% of GDP of the country. To make this programme more effective government of India has started other programs and missions such as Digital India, Skill India, Start-up India and Stand-up India etc.

National Skill Development Mission was launched by the Hon'ble Prime Minister on 15/7/2015 on world youth skills Day. The mission has been developed to create convergence across sectors and state in terms of skill training activities.

Ministry of Skill Development & Entrepreneurship (MSDE) (Labor and Employment Department Government of Gujarat, 2016)

- Governing council policy guidance at apex level.
- A steering Committee
- A Mission Directorate (along with an Executive Committee)

Mission Directorate (Labor and Employment Department Government of Gujarat, 2016)

- National Skill Development Corporation (NSDC)
- National Skill Development Agency (NSDA)
- Directorate General of Training (DGT)

National Skill Development Corporation (NSDC) (Labor and Employment Department Government of Gujarat, 2016)

It acts as a catalyst in skill development by providing funding to enterprises, companies and organizations that provide skill training. Its mandate is also to enable support system such as quality assurance, information system and train the trainer academies either directly or through partnerships. It also develops appropriate models to enhance, support and coordinate private sector initiative.

National Skill Development Fund (NSDF) (Labor and Employment Department Government of Gujarat, 2016)

The National skill development Fund was set up in 2009 by the government of India. The fund is contributed by various Government sources, and donors/ contributors to enhance, stimulate and develop the skills of Indian youth by various sector specific programs. The trust accepts donation, contribution in cash or kind from the contributors for furtherance of objectives of the fund.

Fig. 1: Building Blocks of the Mission (Labor and Employment Department Government of Gujarat, 2016)

National Skill Development Agency (NSDA) (Labor and Employment Department Government of Gujarat, 2016)

An autonomous body under the Ministry of Skill Development and Entrepreneurship, Government of India, to achieve the skilling targets of the 12th plan document and beyond. The NSDA plays a pivotal role in bridging the social, regional, gender and economic divide by ensuring that the skilling needs of the disadvantaged and marginalized groups like SCs, STs, OBCs, minorities, women and differently -abled persons are taken care of through the various skill development programs.

Directorate General of Training (DGT) (Labor and Employment Department Government of Gujarat, 2016)

The Directorate General of training consists of the Directorate of Apprentice training. This includes a network of Industrial Training Institutes (ITIs) in States; Advance Training institute (ATIs), Regional Vocational Training Institute (RVTIs) and other central institutes. Several training programmes catering to students, trainers and industry requirements are being run through this network. The building blocks for vocational training in the country Industrial Training Institutes- play a vital role in the economy by providing skilled manpower in different sectors with varying levels of expertise. ITIs are affiliated by National Council for Vocational Training (NCVT). DGT also operationalizes the amended Apprentices Act, 1961.

National Career Services: NCS Portal (Labor and Employment Department Government of Gujarat, 2016)

Hon'ble Prime Minister Narender Modi has Launched the National career service portal on July 20, 2015 which is the employment exchange new site IT is ICT based portal is developed primarily to connect opportunities with the aspirants of youth. The new site provides the list of Employment offices, and the information of vacancies in the departments in every state. To avoid misuse, the labour ministry will ask job hunters to link Aadhaar card number and companies or Organization need to submit Company registration copies.

2. OBJECTIVE

1. To study initiative in Skill India mission.
2. To understand effective ness of skill India.

3. RESEARCH METHODOLOGY

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources. Based on the secondary data and review, the researcher has reported on various emerging trends and issues and challenges in digital India.

Research report, journal and newspaper articles from eminent writers have been reviewed.

4. LITERATURE REVIEW

(Ingle, 2016)Dr DV Ingle analyse the potential of NGO's in mission skill India, in this journal he conceptually highlights role of NGO's in skill development and making work force global competitive. He also focused on challenges and strengths of NGO in skill India.(Dr Neeta Sahu, 2016)Dr Neeta Shau focus on the importance of skill India for Make in India programme and draw attention in education system which poses difficulty in goal of skill India and provide some genuine suggestions to deal with the problems. These problems are like: no coordination between education system and labour market, absence of proper training of vocation, lack of guidance and counselling programs, lack of systematic approach etc.(Kaur, 2016). Harpreet Kaur intends to study the future demand of skilled labour in the manufacturing sector of

India and its corresponding supply. It also studies various obstacles in providing the requisite skills to the people of India and various initiatives taken by the government so far.(Dr. Sudhansu Sekhar Nayak, 2016)Dr Sudhansu Sekhar Nayak in this study argued that, the policy makers might advocate the implementation of PPP model for the expansion of education, but the ground reality is this that private institutions, established with sole motto of 'profit maximization' have little of no concern with the quality of education. The net result is the mushrooming growth of the labour force without adequate skill. The recent initiative of NDA government for skill development is a step in right direction. It will certainly produce fruitful results. The success of skill will ultimate depends on the creation of job opportunities. The talent must not go waste. Scams like Vyapam should be dealt with a tough and impartial stick.(Shetty, 2015)Prof V. Pushpa Shetty focus this conceptual study analyses the origin of the concept "business ecosystem' and analyses the ecosystem structure in the changing context of the economy from the industrial period to the knowledge based economy. Exploring the gaps and challenges posed in execution of ambitious programs of Make in India, Skill India and Digital India to transform India into a knowledge based economy.(Jaiswal, 2016)Prof Kripa Shankar Jaiswal expose the readers to the present scenario of Indian higher education and how by focusing on "Teach in India" the country can tread on the path of "Make in India".(Aggarwal, 2016)the present paper attempts to study the present skill capacity, challenges in front of skill development initiatives in India along with their solutions.(Koundal, 2016)Dr Virender Koundal in the conceptual study focus on the critical success factors of Make in India and argued that skilling, reskilling and upskilling the labour force is important for overall economic growth.(Dr.Sonia Singhal, 2016)Dr Sonia Singhal in this journal highlights the challenges & opportunities of Make in India programme and suggested technology driven process with minimum human intervention will guarantee manufacture excellence. Author also emphasis importance of ease of doing business & conducive environment of business will boost manufacture sector.(Chaugule, 2016)Dr. Suryakant Ratan Chaugule explain Pradhan Mantri Kaushal Vikas Yojana in detail which include outlay, features and benefits of the scheme. Author also focused on National Skill development and Skill India program and analyse the importance in entrepreneurship development. (S.Soundhariya, 2015)S. Soundhariya in this paper discusses about Make in India scheme, its opportunities, challenges, changes needed and some examples of different investors, invested so far. Make in India campaign surely makes India an investment destination and global hub for manufacturing and innovation.(Mathur, 2016)Prof Ajeet N. Mathur examines whether "Make in India" policies are constrained by over-regulation or under-regulation in the Indian labour market. Specific labour law provisions and the scope of circumventing them as evidenced from strategy-as-practised are analysed. Author suggested labour market, among other challenges, also needs attention if the "Make in India" programme is to succeed.(Chandra, 2016)Dr Lal Chandra analyse the skill development mission in India and discussed its relevance in present time. (S. N. Misra, 2016)S.N. Mishra analyse the manufacturing policy and explain the challenges that come across in Make in India. It highlights disconnects that manifest in our education policy both at the primary and tertiary level where GER and inclusivity have become the buzzword; clearly discounting the quality dimension. (Dr.Susmita Priyadarshini, 2016)Dr Susmita Priyadarshini analyse the performance ongoing initiatives of skill development by multiple stakeholders with in the provision of NSDC with the help of certain case studies it seems reality has belied the expectation.

5. RESULT & DISCUSSION

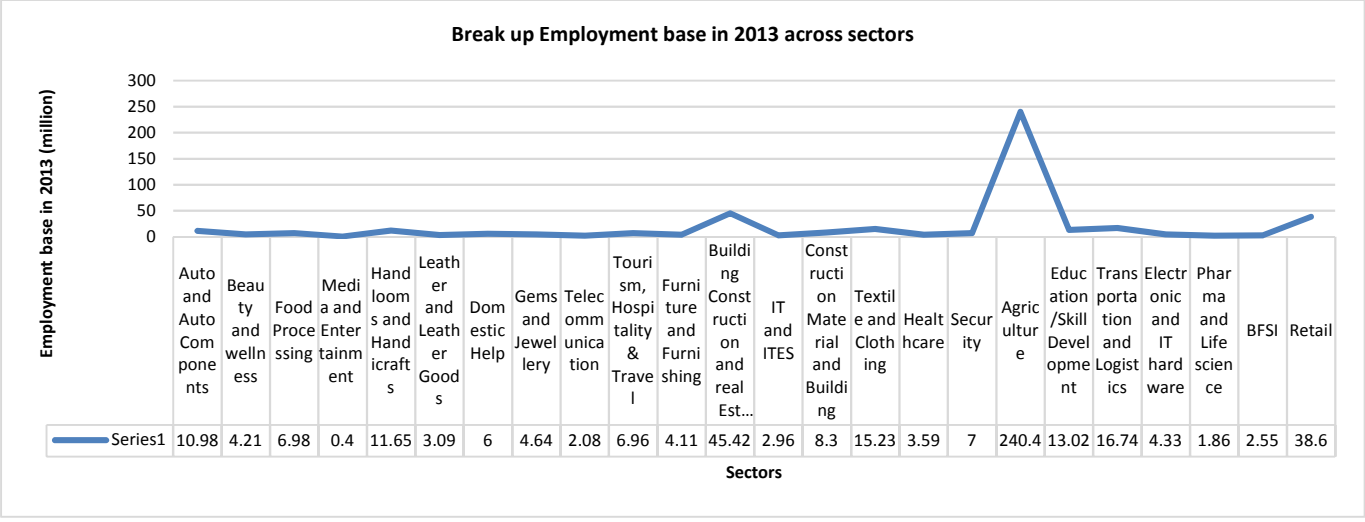


Fig. 2. Break Up Employment Base in 2013 Across sectors (Government of India Ministry of Skill Development & Enterpreneurship , 2015)

Above figure shows employment base in 2013 across all sectors agriculture sector has contributed maximum. The graph below shows projected requirement by 2022 across all sectors

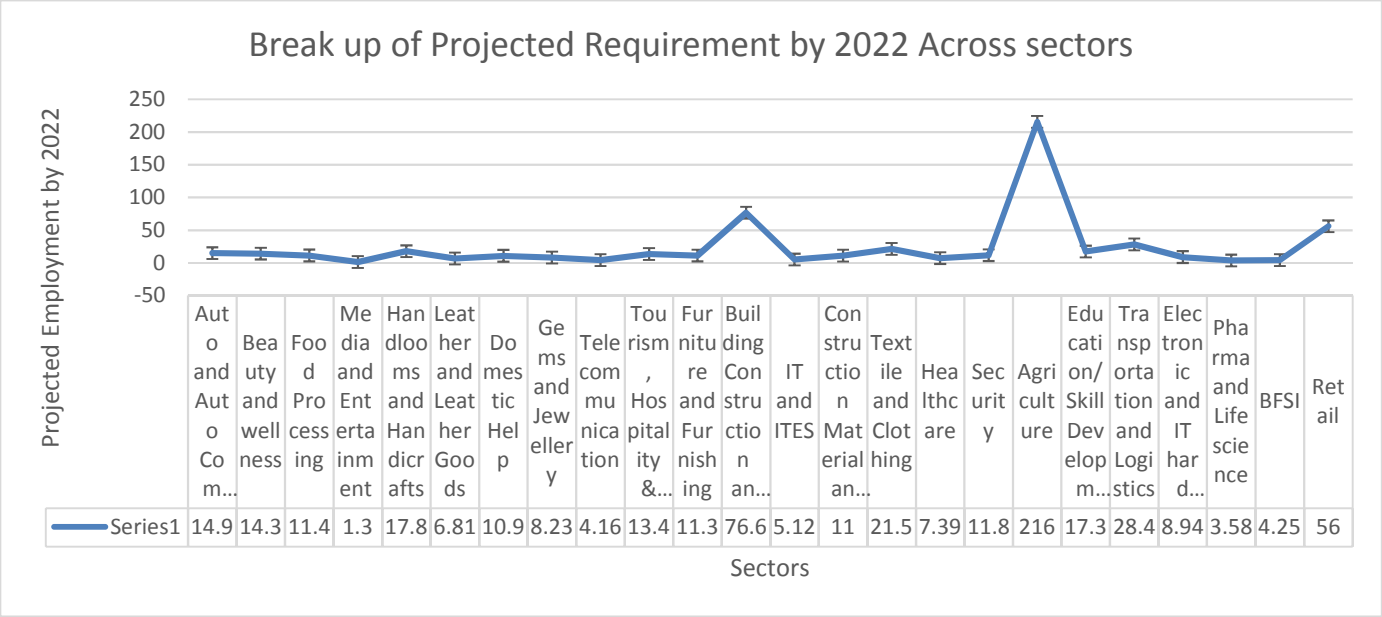


Fig. 3. Break up Projected Requirement by 2022Across Sectors (Government of India Ministry of Skill Development & Enterpreneurship , 2015)

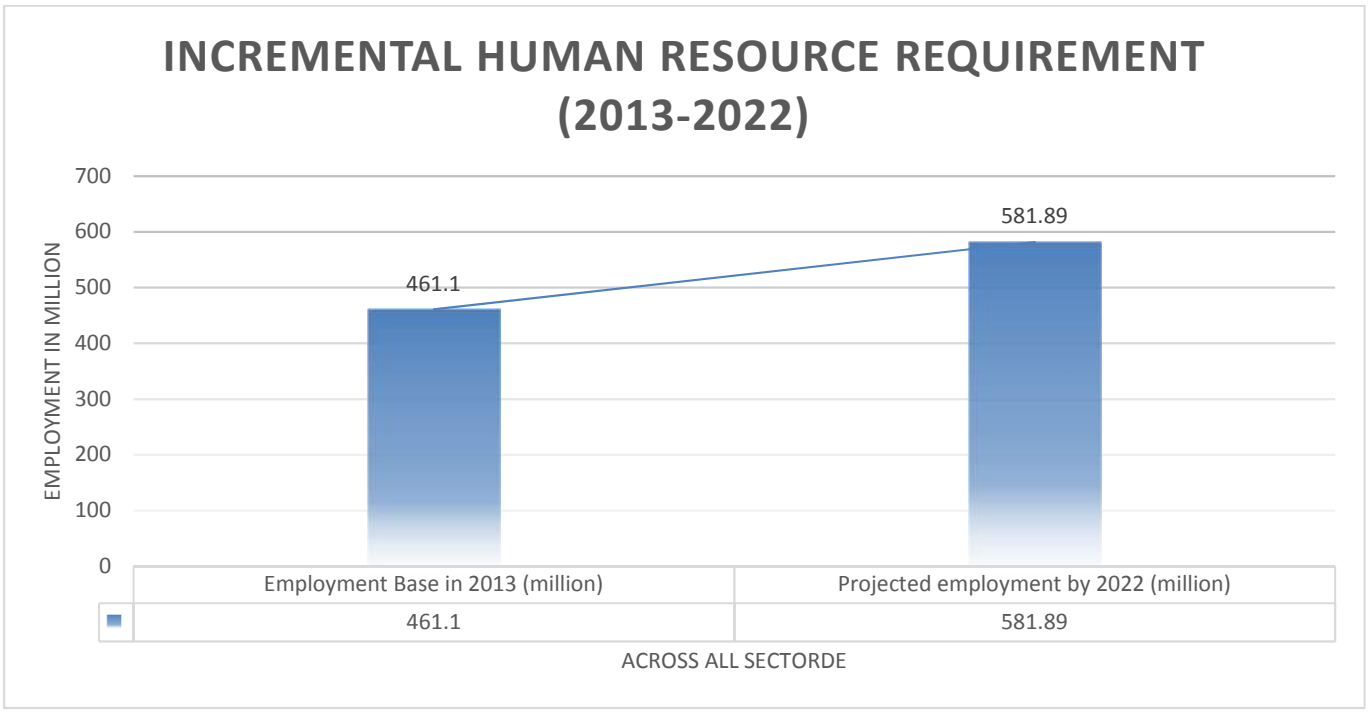


Fig. 4. Incremental Human Resource Requirement (2013-2022) (Government of India Ministry of Skill Development & Enterpreneurship, 2015)

Above graph shows incremental human resource requirement (2013-2022) across all sectors. The graph shown below exhibit employment base in retail sector in 2013.

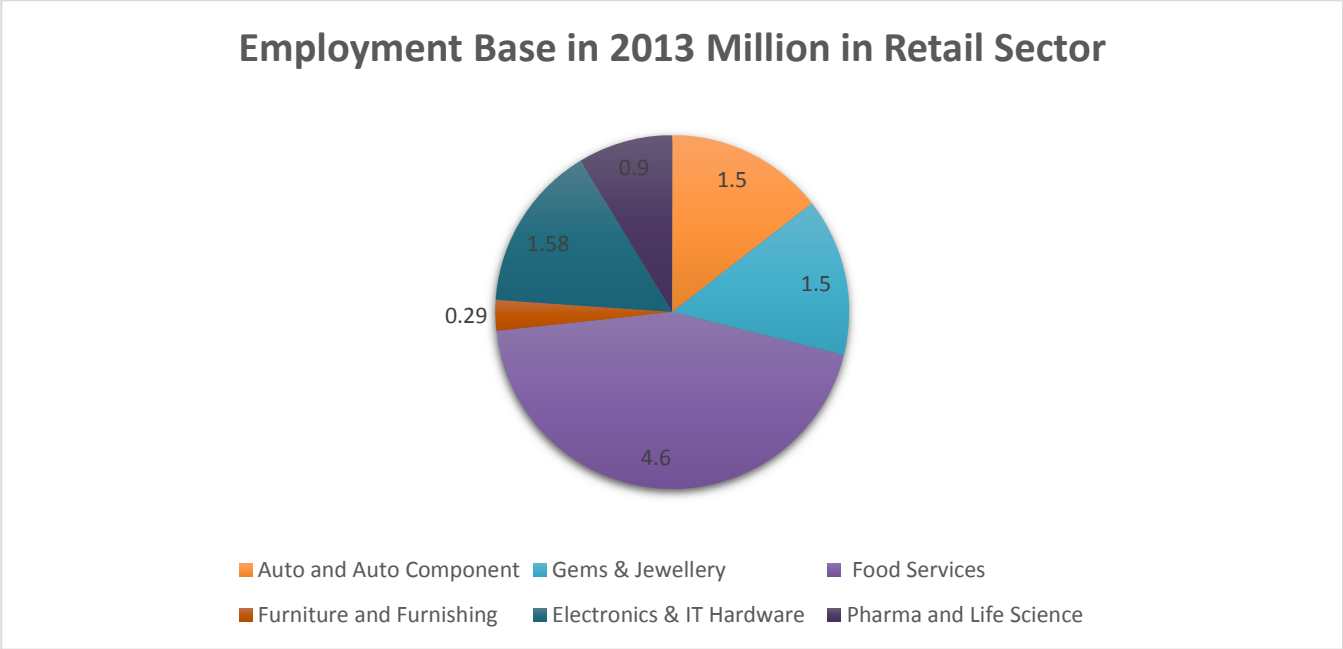


Fig. 5. Employment base in 2013 million in Retail sector(Government of India Ministry of Skill Development & Enterpreneurship , 2015)

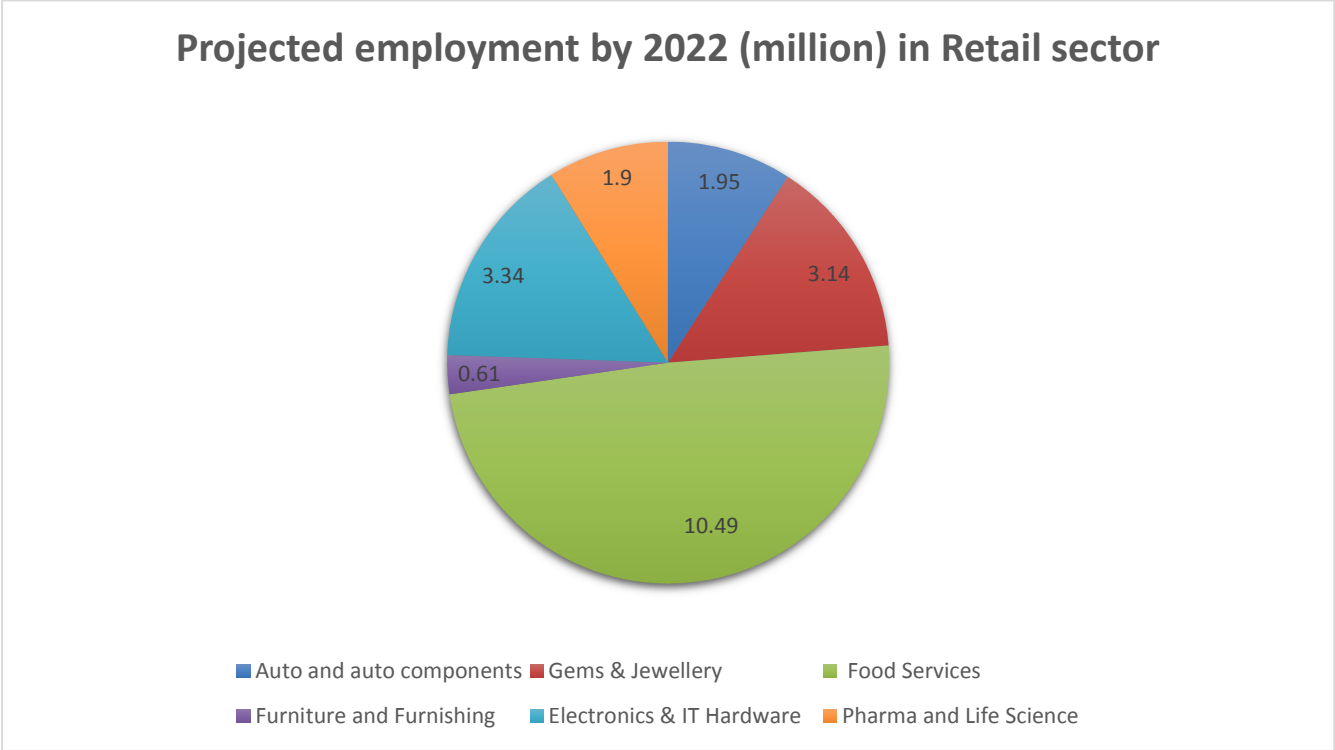


Fig. 6. Projected employment by 2022 million in Retail sector (Government of India Ministry of Skill Development &Enterpreneurship , 2015)

Above figure shows projected employment by 2022 in retail sector. The figure shown below has high light incremental human resource requirement across retail sector.

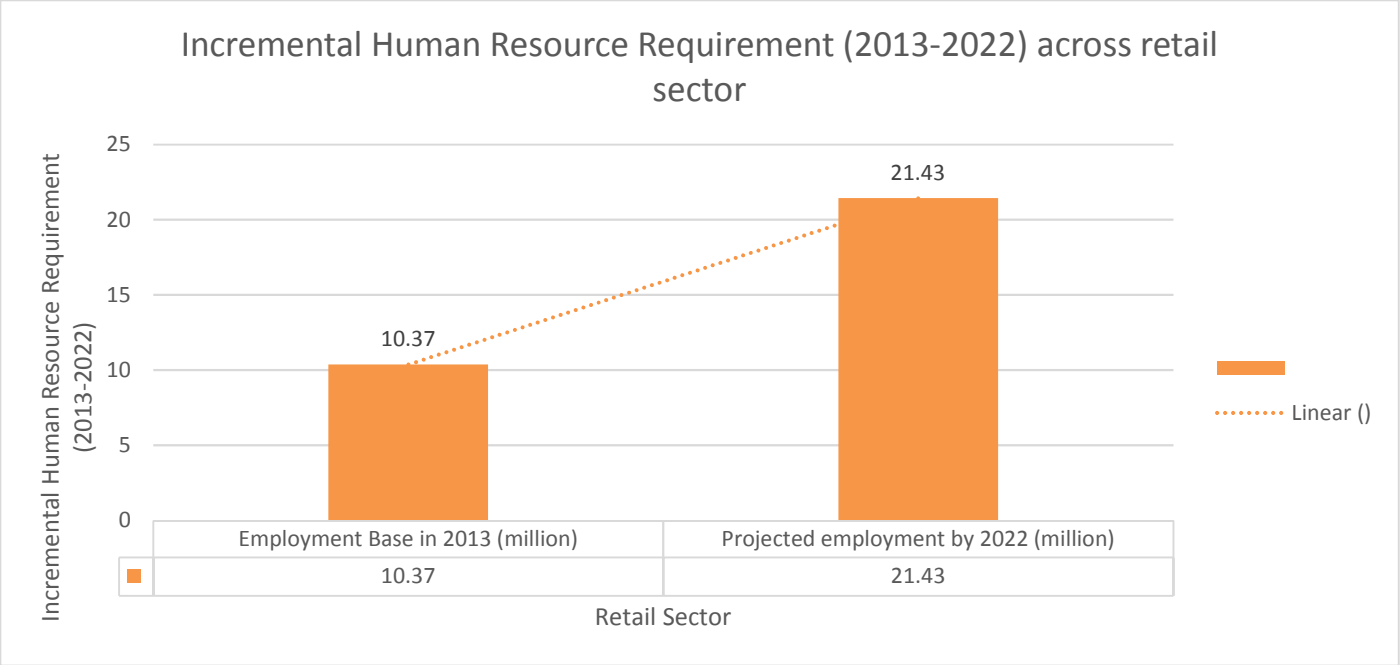


Fig. 7. Incremental Human Resource requirement (2013-2022) across retail sector (Government of India Ministry of Skill Development & Enterpreneurship , 2015)

6. CONCLUSION

Make in India has made India favourite destination for foreign investors. It has happened because of number of steps initiated on ease of doing business and attracting foreign investors by developing infrastructure. Growth of manufacturing sector will always depend on the skilled labour.

The economies and business across the world have become very dynamic leading to an environment which can be defined as VUCA (Volatile, Uncertain, Complex, Ambiguous). The environment requires strengthening of the work base. This makes skill development, imperative across globe. Develop countries have large base of talented and skilled manpower but developing countries are still in the process of making the required institutional arrangements to ensure the availability of skilled manpower on a consistent basis. There are various statistics which indicate that the world will face a shortage of skilled workers by 2020.

Centre and state government must address this jointly to address demand and supply gap of skilled labour. Make in India program will be successful only by the people who are skilled there for Skill India Mission is Imperative for Make in India.

"And the demographic dividend India is proud of,

Its guarantee lies with skill and trained manpower".

Shri Narender Modi Hon'ble Prime Minister

ACKNOWLEDGEMENT

Researchers are grateful to the Indian Institute of Management – Ahmedabad (IIM-A) library officials for providing access to library resources. Researchers are grateful to all previous researchers who have carried out significant work and paved foundation for this research work**.**

REFERENES

[1] Aggarwal, P. S. (2016). Central Pillar Of Employability: Skill Development . *Imperial Journal of Interdisciplinary*, 386-389.

[2] Chandra, D. L. (2016). Skill Development Mission for Promoting India's Strength and Competitiveness in the Global Economy. *International Journal of Higher Education Research & Development*, 112-119.

[3] Chaugule, D. S. (2016). Pradhan Mantri Kaushal Vikas Yojana (Pmkvy): Through Skill Development & Business Education in Entrepreneurship Development. *Indian Journal of Applied Research*, 157-159.

[4] Dr Neeta Sahu, D. R. (2016). Skill Development: Imperatives and the Challenges Ahead. *Global Journal of Multidisciplinary studies* , 70-73.

[5] Dr. Sudhansu Sekhar Nayak, D. A. (2016). Education, Skill Development and Economic Growth in India. *Global Journal for Research Analysis* , 38-41.

[6] Dr.Sonia Singhal, D. S. (2016). Make in India: Objective is to Produce in India and Sell all Over the World. *Global Journal for Research AnalysiS*, 63-64.

[7] Dr.Susmita Priyadarshini, D. R. (2016). Skill Development Initiatives in India: Fails to Bridge the Skill Deficits despite Big Promises. *International Journal of Innovative Research & Development*, 165-168.

[8] Ingle, D. D. (2016). Potential of NGO's in mission skill India: A conceptual study. *International Journal of Applied Research* , 284-286.

[9] Jaiswal, K. S. (2016). Make in India vs. Teach in India: A Case study of Higher Education in India. *The Indian Journal of Commerce* , 132-137.

[10] Kaur, H. (2016). "Skill India" Programme: A Compliment to "Make In India" Campaign. *Global Journal for Research Analysis*, 84-86. Koundal, D. V. (2016). Employment Opportunities through Make in Indian: An Analysis. *Indian Journal of Applied Research*, 269-270.

[11] Mathur, A. N. (2016). *Is "Make in India" Constrained by Indian Labour Market Regulations?* Ahmedabad: Indian Institute of Management Ahmedabad-380 015 India .

[12] S. N. Misra, S. S. (2016). Manufacturing And Missing Links In Education Policy. *Europeon Journal of Alternative Education studies*, 27-35.

[13] S.Soundhariya. (2015). Make in India – Scheme For Transforming India. *Global Journal for Research Analysis*, 77-78.

[14] Shetty, P. V. (2015). Indian Business Ecosystem – Challenges in the Knowledge Economy. *International Journal of Scientific Research*, 497-499.

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

Growth and Performance of the Education and Economy Sector in Haryana

Niyati Chaudhary

Senior Research Fellow, IMSAR, M.D.U.

Abstract: **Haryana has seen a remarkable change in last few decades. Government of India has done so many efforts in this field so that the aim of inclusive growth and more access to education can be achieved very soon by it. In India, Literacy rate raised from 18.3% in 1950-51 to 74.04% in 2010-11, it is a great success of the government. Haryana has shown a diverse image when compared with its neighboring states and India as a whole. The main objective of this paper is to study the developments in Haryana in context of growth of literacy rate, education, state economy, primary, secondary sector and territory sector. This research article is descriptive in nature. It is primarily based on secondary data collected from various sources like national reports and economic surveys, websites etc. Descriptive statistical tools like bar graphs, linear charts, etc. have been used for interpretation of the data.**

Keywords: **Education, Haryana, Economy sector, Literacy Rate.**

1. INTRODUCTION

After the reorganization of the Punjab state, on 1st November 1966 Haryana came into existence as a new state. Haryana is one of the few states in the country where males are more than females. As per 2011 census Haryana's population was about 2.53 crores, literacy rate was 76.6 %, sex ratio of 877 females per 1000 males. 71% of its population lives in Villages. The State has 21 administrative districts. In Haryana literacy rate increased considerably. Haryana had finished tremendous development in economy. State government wants more revenue for economic development. Many agendas and planning were done in this regard. Tourism forms a part of such agendas. Surajkund, Kartik and Geeta Jayanti festivals, development of Kurukshetra and Morni Hills are contribute considerably to the State's economy. Government of Haryana did many efforts for the growth and development of the economy. A great success for the Indian government in the literacy rate from 18.3% in 1950-51 to 74.04% in 2010-11. By enhancing education status the standard of living of people will improve and also solve the problem of poverty and unemployment, social equality, equal income distribution. Education adds to the individual development as well as economy development. Haryana GDP's shown higher growth in comparison to the national GDP's growth. Haryana economy is shifting from the primary to secondary and territory sector.

2. GOVERNMENT INITIATIVES

In the area of education, government of India has been taken many steps for improving the quality of education and more capacity in higher and technical education. Engagement of private sector in education by taking part as formal and informal mode o education system is great initiative of the government. Initiatives taken by government for improvement of education in Haryana as follows:

- **Enactment of Law University**: In 2012 there was amendment in The National Law University, Haryana Act. Many universities were proposed to establish in various cities of Haryana.
- **Enactment of Anti Ragging Act, 2012:** THE HARYANA PROHIBITION OF RAGGING IN EDUCATIONAL INSTITUTION ACT, 2012 is mandatory to follow. Various rules has been mode for sopping ragging. Anti ragging committee need to establish in each college, university and school for safety of students. Strict punishment is applicable for the culprit.
- **Establishment of Private Universities: In Haryana 14 universities have been set up.** University, AMITY university, O.P Jindal Global University, Baba Mast Nath University, Ansal University, Manav Rachna University, Jagganath University, GD Goenka etc. These universities will help the Haryana government to achieve their objective of improving quality of education and envelopment of education level.
- **EDUSAT PROJECT:** This project has objective of development education by providing education through satellite. In Haryana, 63 government colleges and 3 private aided colleges has been implemented this project. Many students get benefit of this project.

3. REVIEW OF LITERATURE

Kalirajan (2004) analyzed the pattern of the 15 major states in India for getting facts of economic growth. He found different

growth pattern among all these states. Only seven states which are industry-oriented states showed a consistent increase in growth. He found a significant relationship with the GDP growth rates and increase in investment and growth in the secondary sector. Diaz-Bautista (2003) examined the relationship between industrial growth and overall economic performance in the Mexican economy by using technique of co-integration and Granger causality. He found a long run relationship between industrial sector and overall economy. He concluded that industries are engines of growth. Laitner (2000) analyzed the economy and its sector. He mentioned that economy consist of mainly two sectors which are agricultural and manufacturing sector. land is vital determinant for the agricultural sector while capital is important factor for the manufacturing sector. He found the, the share of agriculture in total GDP tends to zero and the share of manufacturing touches to unity

Linden and Mahmood (2007) studied the relationship of between sector shares (agriculture, manufacturing and services) and economic growth of the 15 Schengen countries for the time period 1970 to 2004. He stated that there is bi-directional relationship between services-share growth and the growth rate of real per capita GDP. He confirmed that there is impact exist between the growth rate of real per capita GDP and service sector. Fisher (1939) conducted a study in which division of sectors were done. He divided the sectors as per the hierarchy of needs. In primary sector those goods which satisfy basic needs are included, in secondary sector standardized products such as manufacturing and in the tertiary sector new products are embraced. Fisher (1952) studied that these three sectors are associated with an rising income elasticity of demand for their particular products. Wang and Li (2010) conducted a study to find the relationship between services industry and economic growth in China. They found a Granger causality and long-term stable equilibrium relationship between the services industry and economic growth. They stated that the development of the service sector plays an significant position in economic growth in China.

Zakaria & Yusoff, (2011) mentioned that the quality of the educations depends on the good infrastructure, the syllabus, resources and teaching process. The found six factors which effects students' satisfaction for their education such as lecture and ancillary factors, facilitating process, and explicit and implicit services. Ashraf & Ibrahim, (2009) stated that by changing the method of teaching and learning and assessment methods, upgrading the professional knowledge and skills, improving the broader educational, administrative and resource environments , the quality of education in universities will be improved.Faruky et. al, (2012) investigated the factors which are affecting the quality education in the private universities. They mentioned faculty credentials, students' personal development and safety measurement', academic and supportive facilities, and social status are the important determinant .Sass (2003) stated that a main hitch are the methods of training of higher education's are not up to the mark and workforce are not having appropriate level of education.

4. OBJECTIVES AND RESEARCH METHODOLOGY:

The main objective of this paper is to study the developments in Haryana in context of growth of literacy rate, education, state economy, primary, secondary sector and territory sector. This research article is descriptive in nature. It is primarily based on secondary data collected from various sources like national reports and economic surveys, websites etc.. Descriptive statistical tools like bar graphs, linear charts, etc. have been used for interpretation of the data.

5. ANALYSIS AND FINDINGS

In this section, literacy rate and education level has been analyzed. Growth in number of institutions in state has been studied.

TABLE 1: Growth of Literacy rate in Haryana

Year	National	Haryana	Haryana Males	Haryana females
1981	43.57	37.13	48.2	22.3
1991	52.21	55.85	67.85	40.94
2001	64.84	67.91	78.5	55.7
2011	74.2	72.99	80.89	64.64

Source: Census of India, 2011

Literacy rate in Haryana showed a tremendous growth. Haryana's males are more educated than Haryana's females. The 2001 census evidenced literacy rates of 67.91 per cent, as compared to 55.85 per cent in 1991 and it increase to 72.99% in 2011. In 2001, the male literacy rate was 78.5per cent which was 48.2 per cent in 1981 as against it, the female literacy rate was 55.7per

cent which was just 22.3 per cent in 1981 but it rose to64.64 % in 2011. The female literacy in Haryana has developed at more rapidly rate than male literacy over the last three decades (chart 1and table 1).

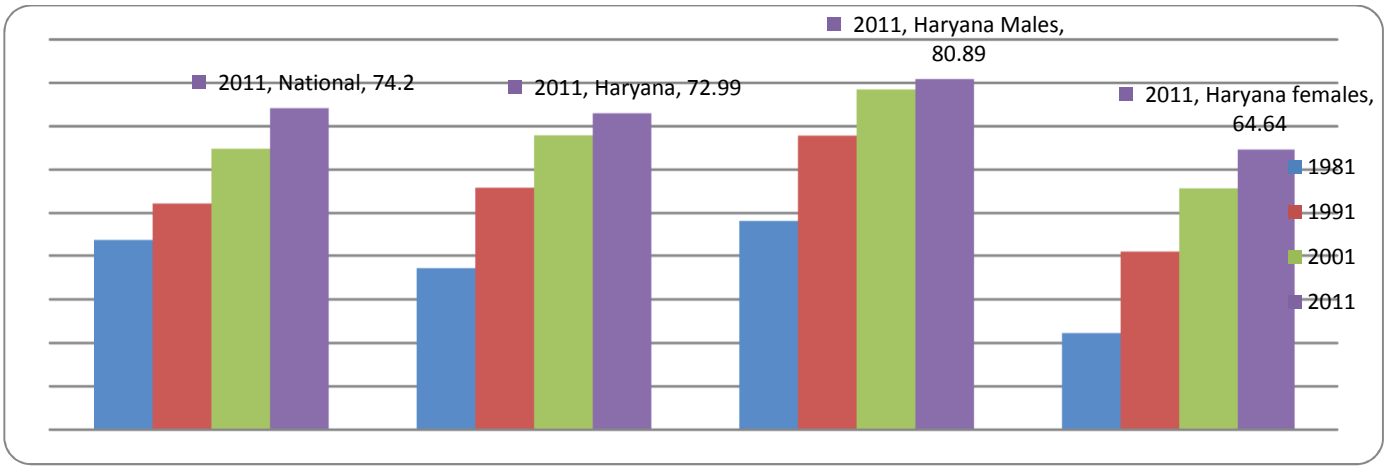


Chart No. 1. Growth of Literacy rate in Haryana

TABLE 2: Progression of Education at various levels in Haryana

Levels	***Number in Lakhs.***
Primary	22.0
Middle	12.4
High/ Senior secondary	9.7
Higher education	3.5

Source: Haryana Statistical Abstract 2011-12

Table 2 showed more progress at primary level. Approx. 22 lakhs institutions were opened. Higher education is at low level. More outlet of students in higher level of education due to limited access in rural areas and poor quality of colleges in Haryana. There was demand supply gap in the number of institutions at higher level education.

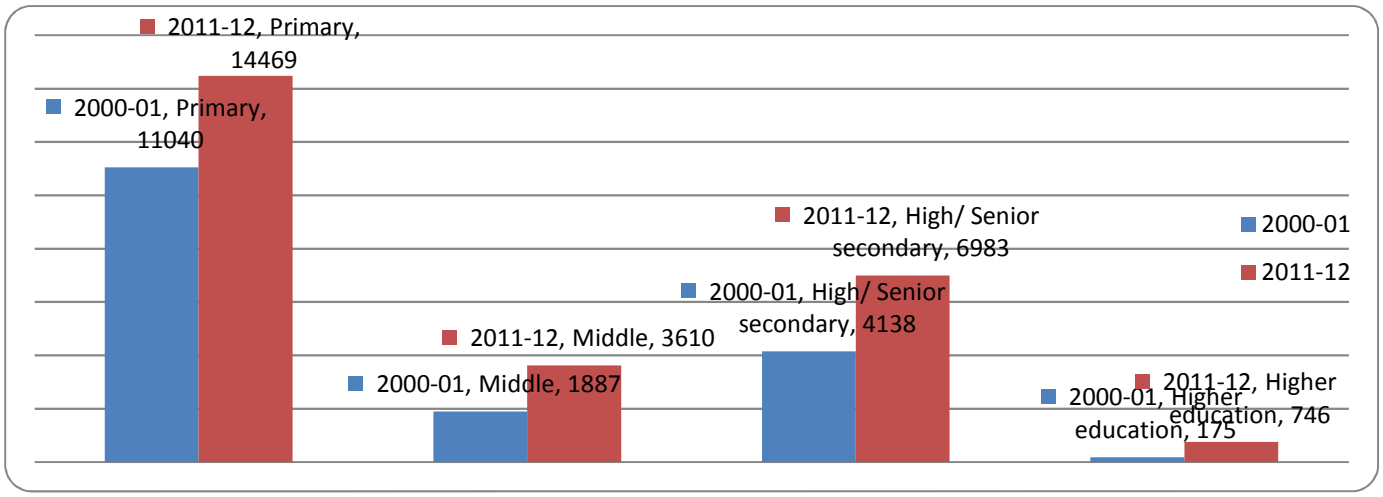


Chart No 2. Growth of Educational Institutes in Haryana

Source: Haryana Statistical Abstract 2011-12

Chart 2 depicted in 2011-12 there was 3400 approx. primary institutions was increased. Middle school was double in 2011-12. There was tremendous growth in higher education. In 2011-12, number of higher education enhanced 4 times in comparison to 2000-01. This is due to many initiatives have been taken by government in the area of higher education. many private and government universities have been established.

TABLE 3: Number of institutions in various categories

Category of Institutions	*Number of Institutions*
Engineering Degree	159
Diploma	187
MBA	171
Degree Pharmacy	33

http://techeduhry.nic.in/present_status.pdf

There are many MBA and diploma colleges while pharmacy degree colleges was less. This shows students are having first choice towards commerce and less preference towards pharmacy (table no 3). Engineering colleges are 159 predicts students are willing to get more technical knowledge and government of Haryana also taking so many steps for improving technical skills in students.

TABLE 4: Number of institutions in various universities and colleges

Category	Number of Institutions
Universities, Research Institutes, Institutes of National Importance	24 (IIM-Rohtak, NIT Kurukshetra)
Arts and Science Colleges	192
Teacher Training Colleges	472
Other	1

Source: Haryana Higher education Commission

Haryana at present has about 24 universities out of which 9 universities are public. Haryana is home to a number of renowned private universities in the country like Amity University, O.P. Jindal Global University, K. Mangalam University and G.D. Goenka University. Many teaching training colleges are in Haryana approx. 500. Government had been set up many training institutions for developing better teaching skills in students. Many well established research institutions were set up for promoting more research development in state.

TABLE 5: Growth of the Haryana Economic Performance

Year	Primary sector	Secondary sector	Tertiary sector
2006-07	22	32	47
2007-08	20	31	49
2008-09	20	30	50
2009-10	17	30	53
2010-11	17	30	54
2011-12	17	29	55

Source: Haryana Economic Survey

Territory sector has performed very well in all over the period. Its share in economic growth has been increased year by year. In Haryana, primary and secondary sector contributed less in the overall growth. After 2008-2009, territory sector was contributed

more than 50% in economic growth. Gradually contribution of primary and secondary sector was declined in over the period. Almost in all period contribution of primary sector was less than 20 % in the overall economic growth.(Table no 5.)

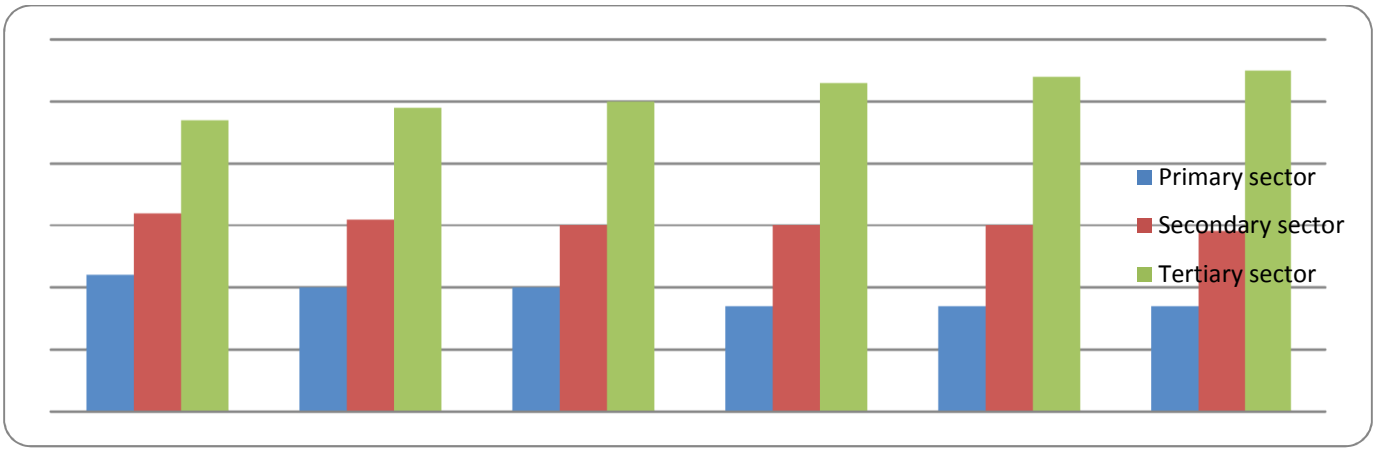


Chart No. 3. Growth of the Haryana Economic Performance

TABLE 6: Economic performance of key districts in Haryana

Districts	Primary sector%	Secondary sector	Tertiary sector	GDDP
Ambala	16	18	66	5,52,846
Karnal	33	25	42	5,53,750
Hisar	26	41	33	6,21,994
Panipat	11	26	62	7,23,461
Fariabad	9	38	53	13,12,893
Gurgaon	3	42	55	20,03,146

Source: Planning Commission, State wise District Domestic Product Report

Table 6 conveys that Ambala district contribute 66% in territory sector which is highest among all districts. Among all districts Karnal contribute more than 30 percent in primary sector. Gurgaon district had more than 50 percent contribution in territory sector while it had only 3% in primary sector. This indicates agriculture are very less developed on the other side Auto and IT industries are very much in numbers in this area and also it had highest GDDP in comparison to other districts. Panipat had 62% in territory sector which shows more textile and refinery industries contributes to the territory sector.

TABLE 7: Key industrial activity in both large scale industries segment and small scale segment for major industrial districts of Haryana

District	Contribution of District contribution to overall state manufacturing output (in %)	Potential Sectors for large scale industrial Growth
Gurgaon	34.61	Food, Auto, Textile, IT,
Faridabad	17.62	Auto, footwear, machinery
Rewari	7.88	Auto industry, electronics, food processing, mineral processing, pharmaceuticals, metal based
Hisar	7.09	Textile, metal, food processing
Sonipat	4.15	Food processing, books, leather, metal, auto and dairy
Jhajjar	4.11	Leather, ceramics, paper, metal
Panipat	3.95	Oil, fertilizers, textiles

Source: Development Commissioner Ministry of Micro, Small and Medium Enterprises

Faridabad and Gurgaon districts contribution by mostly auto industries.oil and Refineries are mainly contributed industries in Panipat growth while Rewari, Hisar and Sonipat had mainly contribution of food processing industries.

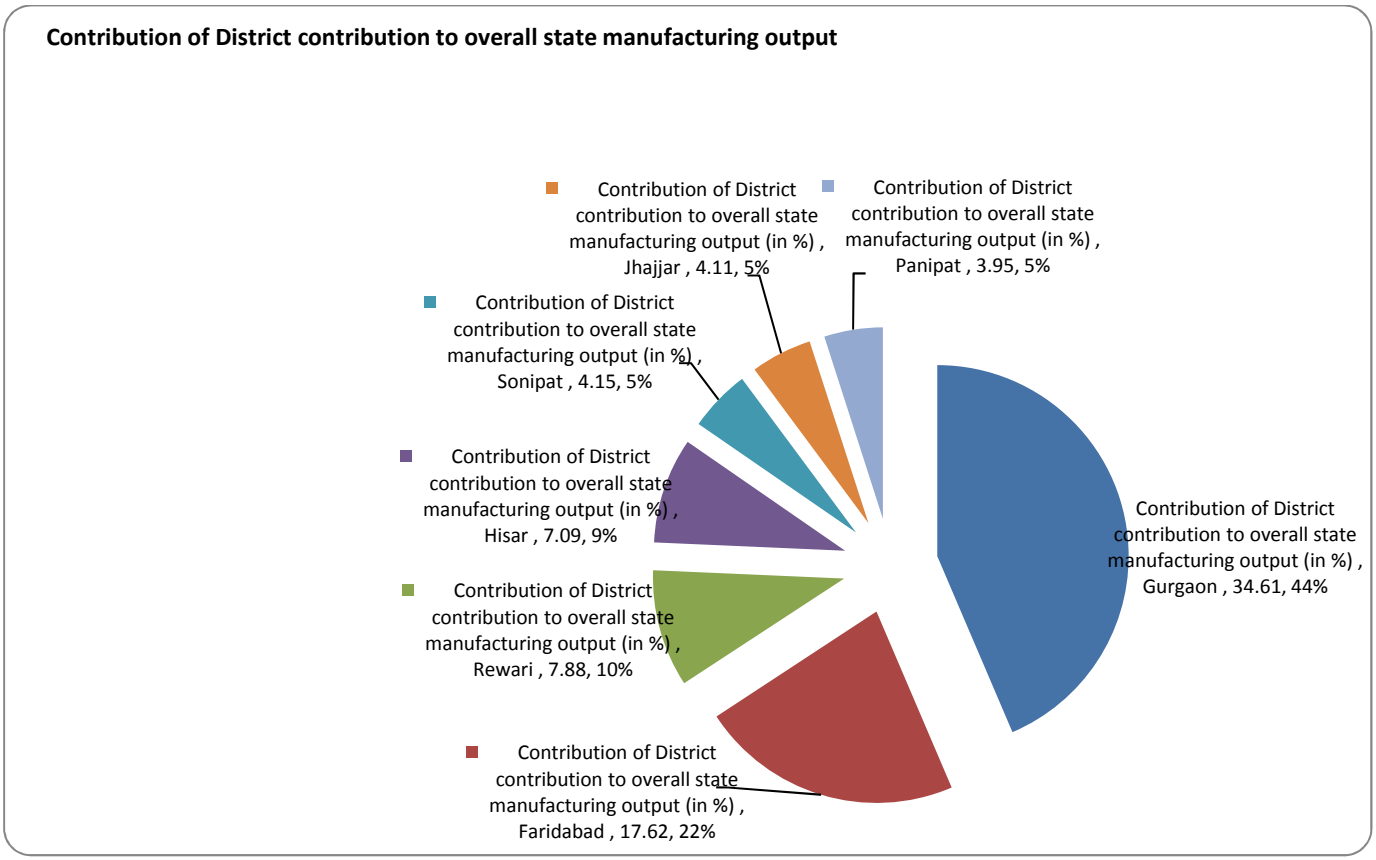


Chart No. 4. Contribution of districts in state manufacturing output

Gurgaon contributes more than 30 percent in the state manufacturing growth and followed by Faridabad. Sonipat, Jhajjar and Panipat contributed less than 5 percent in the state manufacturing growth(chart 4).

6. CONCLUSIONS

- Haryana's males are more educated than Haryana's females while the female literacy in Haryana has developed at more rapidly rate than male literacy over the last three decades. The government needs to adopt a focused approach to carry the female literacy levels at par with the male literacy.
- Higher education is at low level. There was demand supply gap in the number of institutions at higher level education.
- There was tremendous growth in higher education .In 2011-12, number of higher education enhanced 4 times in comparison to 2000-01.
- There are many MBA and diploma colleges while pharmacy degree colleges are less. This shows students are having first choice towards commerce and less preference towards pharmacy.
- Haryana at present has about 24 universities out of which 9 universities are public. Many well established research institutions were set up for promoting more research development in state.
- Territory sector has performed very well in all over the period. Its share in economic growth has been increased year by year. Almost in all period contribution of primary sector was less than 20 % in the overall economic growth.
- Gurgaon had 55 % and Panipat had 62% contribution in territory sector.

REFERENCES

[1] Ashraf, M.A, Ibrahim, Y & Joarder, M.H.R. (2009), Quality Education Management at Private Universities in Bangladesh:

An Exploratory Study *Journal Pendidik dan Pendidikan*, Vol 24, pp17–32.

[2] Diaz-Bautista, Alejandro. (2003). Mexico's industrial engine of growth: Cointegration and causality. *Revista Momento Economico*, 126, 34 - 41.

[3] Faruky, K. N. B., Uddin, A. & Hossain, T. (2012), "Students' satisfaction: A study among private university students of Bangladesh", *World journal of social sciences*, 2(4), 138-149.

[4] Fisher, A.G.B. (1939) Production, primary, secondary and tertiary. *The Economic Record*, 15: 24–38.

[5] Fisher, A.G.B. (1952) A note on tertiary production. *Economic Journal*, 62: 820–834.

[6] Kalirajan, K. (2004). Economic reform and the transmission of growth impulses across Indian states. *International Journal of Social Economics*, 31(5/6), 623-636. http://dx.doi.org/10.1108/03068290410529434

[7] Linden, M., & Tahir Mahmood. (2007). Long run relationships between sector shares and economic growth – A Panel Data Analysis of the Schengen Region. *Keskustelualoitteita*, 50, 1-36.

[8] Laitner, J. (2000) Structural change and economic growth. *Review of Economic Studies*, 67: 545–561.

[9] Sass, M. (2003). Competitiveness and Economic Policies Related to Foreign Direct Investment. Ministry of Finance.

[10] Wang, S., & Li, D. (2010). A empirical analysis on the relationship between service industry and economic growth. Proceedings of 2010 International Conference on Industry Engineering and Management. ISBN: 978-0-9806854-3-5.

[11] Zakaria, S. and Yusoff, W.F. Wan (2011). Teaching Management and Its Contribution Student Satisfaction in Private Higher Institutions of Learning, *International Journal of Trade, Economics and Finance*, Vol. 2(5).

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

A Study of Effectiveness of Online Marketing Strategies and Customer Satisfaction in Metro Cities

Dr. Rajeshwari Malik

Associate Professor, Maharaja Surajmal Institute (GGSIPU), New Delhi
rajmalik2007@gmail.com

Abstract: **The IT revolution has changed the whole world. Internet has made tremendous contributions for business transformation witnessed nowadays all over the world. This had given birth to e-Commerce which encompasses several pre-purchase and post-purchase activities leading to exchange of products or service or information over electronic systems such as the internet and the other Telecommunication networks. Most of the consumers are using the online marketing not only to buy the product but also to compare prices and features of product. It is essential for the online marketers to understand the customer perception towards the online marketing. Today many organizations provide online marketing for the shopping purpose. This article highlights the customer perception and response towards online marketing by measuring their satisfaction on various parameters important to online shopping. This is an attempt to understand what 'clicks' and what do not impress the customers, so as to design more diverse and fruitful strategies in future. The data collected is from metros, and hence is highly relevant to the target customers.**

Keywords: **Customer perception, Internet marketing, e-Marketing, Online marketing, customer satisfaction, marketing strategy**

1. INTRODUCTION: INTERNET MARKETING

Internet marketing is also referred to as e-Marketing, i-Marketing, online marketing or web-marketing. E-Marketing refers to the use of the Internet and digital media capabilities to help sell your products or services. These digital technologies are a valuable addition to traditional marketing approaches regardless of the size and type of your business. As with conventional marketing, e-marketing is creating a strategy that helps businesses deliver the right messages and product/services to the right audience. It consists of all activities and processes with the purpose of finding, attracting, winning and retaining customers. What has changed is its wider scope and options compared to conventional marketing methods.

E-marketing is deemed to be broad in scope, because it not only refers to marketing and promotions over the Internet, but also includes marketing done via e-mail and wireless media. E-marketing also embraces the management of digital customer data and electronic customer relationship management (ECRM) and several other business management functions.

E-marketing joins creative and technical aspects of the Internet, including: design, development, advertising and sales. It includes the use of a website in combination with online promotional techniques such as search engine marketing (SEM), social medial marketing, interactive online ads, online directories, e-mail marketing affiliate marketing, viral marketing and so on. The digital technologies used as delivery and communication mediums within the scope of e-marketing include:

- Internet media such as websites and e-mail
- Digital media such as wireless, mobile, cable and satellite.

Internet markers uses advertising and marketing efforts that use the Web and e-mail to drive direct sales via e-commerce as well as sales leads from Web sites or emails. Internet marketing and online advertising efforts are typically used in conjunction with traditional types of advertising like radio, television, newspapers and magazines. Marketing efforts done solely over the internet. This type of marketing uses various online advertisements to drive traffic to an advertiser's website. Banner advertisements, pay per click (PPC), and targeted email lists are often methods used in Internet marketing to bring the most value to the advertiser. Internet marketing is a growing business mainly because more and more people use the internet every day. Popular search engines such as Google and Yahoo have been able to capitalize on this new wave of advertising.

Online Marketing is the art and science of selling products and/or services over digital networks, such as the Internet and cellular phone networks. The art of online marketing involves finding the right online marketing mix of strategies that appeals to your target market and will actually translate into sales.

The science of online marketing is the research and analysis that goes into both choosing the online marketing strategies to use and measuring the success of those online marketing strategies.

Online marketing is becoming increasingly important to small businesses of all types. In the past, marketing online was something that local bricks-and-mortar businesses could justifiably ignore. It didn't make sense to waste time and money on online marketing when all your business was local. Now with increasing local search and people's new habit of searching on the Internet first, it matters. I would go so far as to say that all businesses should include some online marketing in their marketing mix. Internet Marketing is an all-inclusive term for marketing products and/or services online – and like many all-inclusive terms, Internet marketing means different things to different people.

Essentially, though, Internet marketing refers to the strategies that are used to market a product or service online, marketing strategies that include search engine optimization and search engine submission, copywriting that encourages site visitors to take action, web site design strategies, online promotions, reciprocal linking, and email marketing – and that's just hitting the highlights.

Online marketers are constantly devising new Internet marketing strategies in the hopes of driving more traffic to their Web sites and making more sales; witness the increasing use of blogs as marketing tools for business, for instance.

2. CRITICAL SUCCESS FACTORS IN E-MARKETING

Having observed the evolving paradigms of business in the Internet era, there are five critical success factors that the E-Marketer has to keep in mind.

- **Attracting the Right Customer** is the first crucial step. Rising digital penetration would mean that the number of customer visiting particular siteswould inevitably go up. While the number of eyeballs or page views has so farbeen conveniently used as a satisfactory measure by most web sites, it wouldbe foolish to cater to the whole spectrum of digital visitors. Content has to bevery target specific. The digital company has to select its target segment byfinding out which section of customers are the most profitable in terms ofrevenue transactions and who are the customers who generate the maximumnumber of referrals. Here again it is important to note that the majority ofonline customers are not seeking the lowest price. Rather they are seeking convenience above everything else. The power of customer referrals has neverbeen so enormous, since word of the mouse spreads faster than word of themouth. E-Bay attracts more than half of its customers through referrals. Notonly do referred customers cost less to acquire than those brought in byadvertising or other marketing tools, they also cost less to support since theyuse their friends who referred them for advice rather than using thecompanies' own technical desk.
- **Delivering Content Value to engage the user's interest** is the criticalimportance in retaining customer participation. This is because content servesas a powerful differentiator. Content would include Product enhancements (Software patches for glitches), personalized interactions (through customizednavigation paths as seen on the web sites of GM and Toyota) and ProblemResolution (updates of delivery schedules and e-mail responses). Integral tothe concept of delivering proper content value is innovation. The retailfinancial services industry, for example, is changing rapidly with multipleplayers jockeying for position. Product innovation serves as a key tool toattract new customers.

  Priceline.com, for example, has revolutionized the travel and related servicesbusiness by letting in a form of "buyer driven commerce"----Customers specifytheir desired prices and competing companies then bid for customer requirements.Delivering proper content to make existing customers in the traditional "brick"business switch to Web-enabled transactions makes a lot of sense because inevery conceivable case, the cost of Web-Based transactions is an order ofmagnitude less than the traditional ways and is decreasing at a faster rate. The costof an Internet based banking transaction is less than one-tenth the cost of a humanteller -transaction. It is keeping this aspect in mind that Indian Banks have startedtoying with the idea of setting up Internet kiosks to let their low-value customerssettle their banking transactions at the kiosk nearest to their place.
- **Ensuring E-Loyalty** is vital to the success of any online venture. This isbecause acquiring customers on the Internet is enormously expensive andunless those customers stick round and make lots of repeat purchases over theyears, profits will remain elusive. Contrary to the general view that Webcustomers are notoriously fickle, they in fact follow the old rules of customerloyalty. Web customers stick to sites that they trust and with time consolidatetheir purchases with one primary supplier to the extent that purchasing fromthe supplier's site becomes part of their daily routine. The issue of trust isintegral to the issues of privacy and security. Companies like Amazon.com, which command amazing levels of consumer trust, have used a variety ofencryption tools ad simple ethical decisions like not accepting money forpublishers for independent book reviews to maintain the trust of its customers.
- **E-Learning to facilitate personalized interactions** with customers has beenthe biggest contribution of the Web to

the marketing strategists. Customers intraditional bricks-and-mortar stores leave no record of their behavior unlessthey buy something—and even then the date might be sketchy. In the digitalmarketplace, however technology has made the entire shopping experience atransparent process. For example, if the customer exits the web-site when theprice screen appears, he is a price sensitive consumer. Such minute tracking ofcustomer behavior has major implications for the world of advertising. TheInternet may soon be used as a test bed for testing prototypes of marketing andadvertising campaigns. By monitoring pages selected, click through, responsesgenerated, and other indicators, the company would be able to discover whichparts of a prospective campaign would work, thus reducing the risk of a potentialflop. This would make it possible for the company to modify its product offeringsmuch earlier than usual in the product life cycle.

- **Providing Digital value to the evolving consumer through his life cycle** hasbecome possible because of customized interactions and emerging business models. These models have often disturbed the traditional status quo andcreated new rules of business. The sectors where new business models willemerge or have emerged are the music industry, the financial servicesindustry, the travel industry, the relating segment and the publishing segment.Digital value is delivered to the consumer by promising him convenience,allowing the customer to feel his ownership of the Web experience, and givingthe customer a sense of belonging that traverses the physical boundaries.

3. BENEFITS OF INTERNET MARKETING TO CUSTOMERS

Customer perception is a marketing concept that encompasses a customer's impression, awareness and/or consciousness about a company or its offerings. Customer perception is typically affected by advertising, reviews, public relations, social media, personal experiences and other channels.

The reason why internet marketing has become so popular is because it provides many benefits to potential buyers:

1. **Convenience:** Customers can order products 24 hours a day wherever they are. They don't have to sit in traffic, and a parking space, and walk through countless shops to find and examine goods.
2. **Information:** Customers can find reams of comparative information about companies, products, competitors, and prices without leaving their office or home.
3. **Fewer hassles:** Customers don't have to face salespeople or open themselves up to persuasion and emotional factors; they also don't have to wait in line.
4. **Updates:** The internet keeps customers constantly updated through websites, emails, online adverts and social networking sites. Customers can access the internet on the move through smart phones and tablets. Manufacturers and retailers can instantly update their customers through the internet.

4. BENEFITS OF INTERNET MARKETING TO MARKETERS

1. **Quick adjustments to market conditions:** Companies can quickly add products to their offering and change prices and descriptions.
2. **Lower costs:** On-line marketers avoid the expense of maintaining a store and the costs of rent, insurance, and utilities. They can produce digital catalogs for much less than the cost of printing and mailing paper catalogs.
3. **Relationship building:** On-line marketers can exchange the ideas with consumers and learn from them. Internet marketing is considered to have a broader scope because it not only refers to digital media such as the Internet, e-mail, and wireless media but Internet marketing also includes management of digital customer data and electronic customer relationship management (ECRM) systems.
4. **Audience sizing:** Marketers can learn how many people visited their site and how many stopped at particular places on the site. This information can help improve offers and ads. Clearly, marketers are adding on-line channels to reach, communicate, and sell to the customers.
5. **No real limit on advertising space:** In contrast to print and broadcast media where marketers have to pay per inch and per second respectively, internet marketing has no such restriction on the size of the ad so marketers can have flexibility in choosing the content of ad as there is no space limit for internet marketing.

5. REVIEW OF LITERATURE

According to the Internet competencies, Internet marketing strategies can be divided into five categories: Transactional, Profile, Customer-oriented, Relationship, and Knowledge strategies. Choosing and implementing any category of strategies depends on the degree of internet competencies (informational and relational) that a firm has. When both are high, proper internet marketing strategy seems to be knowledge strategies; and when both are low, transactional

internet Keywords: Internet marketing strategies, Relational competency and Informational competency. The Internet and Information Revolution has created fundamental shifts in business and consumer behavior similar to the changes made by Industrial Revolution. The emergence of the Internet seems to be analogous to the advent of the printing press or the railroads, which changed monetary, communication and exchange platforms. Similar evolutions took place with the introduction of automobiles and telephones that reduced the need for channel immediacy.

The use of Internet has become increasingly popular in recent years, where the cost of accessing and building on Internet and web site is relatively low [Ranchhod et.al, 2000]. Companies employ the World Wide Web to gather and disseminate information to and from actual and potential customers and increasingly for end-consumer business transactions through electronic commerce [Romano, 2002]. As McFarlane (1984), Porter and Millar (1985) and Cash and Konsynski (1985) explained; Since the beginnings of the computing era, Information Technology [IT] has suggested that the implementation of computing technologies would have a serious positive effect on the enterprise. These authors assert that Internet technology may serve as a strategic tool, which has a potential effect in any of porter's competitive strategies [Obra, et.al, 2002]. Some of the research results do not entirely support the academic literature which assumes to be a net positive effect of the Internet on the competitive advantage of the enterprise [Obra, et.al, 2002].

According to resource-based Theory, Internet technology could not be as a source of sustainable competitive advantage, because Internet is imitable and it is not rare. Therefore, companies must identify their competitive advantage and then develop an Internet marketing strategy for success in the Internet markets. The authors believe that companies should understand their core competencies in the Internet markets then develop their Internet marketing strategies. Internet is a tool for marketing and creating competencies, and it could not be a competency or source of sustaining competitive advantage itself becoming increasingly critical to the success of business firms. The Internet is becoming such a pervasive tool that every company will be using it in some way or another in a few years. It is a powerful tool that a business can use to obtain a competitive advantage. It offers many opportunities for businesses to grow in sales and reduce costs. According to the American City Business Journal, small businesses that use the Internet have grown 46 percent faster than those that do not (Howard, 2002).

Some of the major changes brought about by the Internet can be seen in the way we purchase products and services, obtain information, and conduct our banking. Customers can quickly find product and price information and obtain advice from a wide variety of sellers. Online visitors can check product availability, place an order, check the status of an order, and pay electronically. The use of the Internet empowers customers because they can go on the Web and quickly find out where to get the lowest prices for a particular product or service. Consumers benefit from the Internet because it reduces search costs for products and product-related information. E-tailing increases competition by pitting local against national and international competitors (Quelch and Klein, 1996). Business organizations will not survive the Internet era unless they change the ways in which they conduct their business. However, there has been a tremendous amount of hype about ecommerce. The truth is that despite the changes brought about by the Internet, e-commerce is based on the same fundamental principles that have governed businesses for thousands of years (Howard, 2002). Yet a lot of businesspeople view it as something completely new that requires a new way of doing business. Success in the Internet age is about learning the new rules of business while not giving up on the basic business principles. Many Internet-based companies fail because they were built on business models that had no chance of ever making a profit (Howard, 2002). While the Internet has become an indispensable tool in marketing, many marketing managers do not understand how to integrate the Internet in their marketing strategy.

6. RESEARCH METHODOLOGY

This research paper is based on the responses obtained by respondents who shop online.The primary data was collected, using a structured questionnaire with an objective to understand the perception, of the respondents towards online shopping. The questionnaire was served to 400 respondents which serve the primary data conducted during July-September 2017 in metros. The secondary data was gathered through various online sources**.**

DATA INTERPRETATION AND RESULT ANALYSIS

TABLE 1.1: Analysis of favorite information sources internet marketing available to consumers

Quality	Worst	Not good	Natural	Very good	Best
Direct communication from E-com Websites	3.0	1.5	9.0	31.3	39.0
Ads and Banner marketing	3.8	21.0	23.8	24.0	17.8
Email marketing	4.0	9.0	47.3	19.3	14.8
Social Media Marketing	9.0	6.5	53.0	18.3	10.8
Referred by Friends and family	6.5	3.0	52.3	30.3	5.8

Fig. 1.1: Analysis of Favorite Information Sources Internet Marketing Available to Consumers

As we already know that the internet marketers are using different strategies to attract consumers, through table and figure 1.1 we can clearly identify the favorite or most convenient source of information on different products and services available on internet or digital space. Most of the consumers (70%) preferred going direct to respective website know their offerings, which they felt the most convenient way of knowing all the offers to compare them; Second preference the consumers were giving to Ads and banner marketing (42%) then email marketing (34%) and thenreferenced of friends and family (36%) and Social media marketing (29%); that means consumers were trying to use all the available sources to get information on their preferred product or services.

TABLE 1.2: Respondents Satisfaction Measurement about Online Purchased Product Quality

Satisfaction	Miserable	Somewhat Satisfied	Satisfied	Very Satisfied	Delighted	No response
Overall product quality	12	68	74	69	96	81
Variety of products	26	56	69	86	92	71
Price of the products	112	96	22	77	56	37
Other added costs like shipping or delivery charges etc.	123	96	26	56	63	36
Automated Search and information presentation	23	32	36	82	65	162
Installation or First use experience	10	6	78	12	11	283
Usage Experience	26	12	20	6	12	324
After purchased Services (like: - warranty, repair, return, replace exchange etc.)	68	34	75	12	5	206

Measuring the satisfaction of consumer can give us the clear idea about their perception whether they feel that internet marketing is improving their life and helping them to overcome the challenges of modern life style; so the researcher first asked about overall product quality there was no big variation in answer except miserable status i.e. only 12 people says but rest of 388 people were in category of somewhere satisfied, satisfied, very satisfied, delightful and not comments. Researcher assumed that if respondents arenot in negative like miserable are consider positive if they do not give any answer like no comment category in minimum variation but if variation increasing a huge range may consider in negative. Moreover in variety of product; Automated Search and information presentation; Installation or First use

experience; Usage Experience; 26, 23 and 10 people said the miserable category about online purchase product quality. When researcher asked about Price of the products; other added costs like shipping or delivery charges etc.; maximum 112 and 123 people said that miserable condition.. Automated Search and information presentation; Installation or First use experience; Usage Experience; after purchased Services (like: - warranty, repair, return, replace exchange etc.) the maximum 162, 283, 324 and 206 people no commented about after purchase product quality and its services. That showed that 40% minimum and 80% maximum people not responding any comment about online purchase uses experience and after purchase services etc. table 1.2 and figure 1.2 explain same respectively.

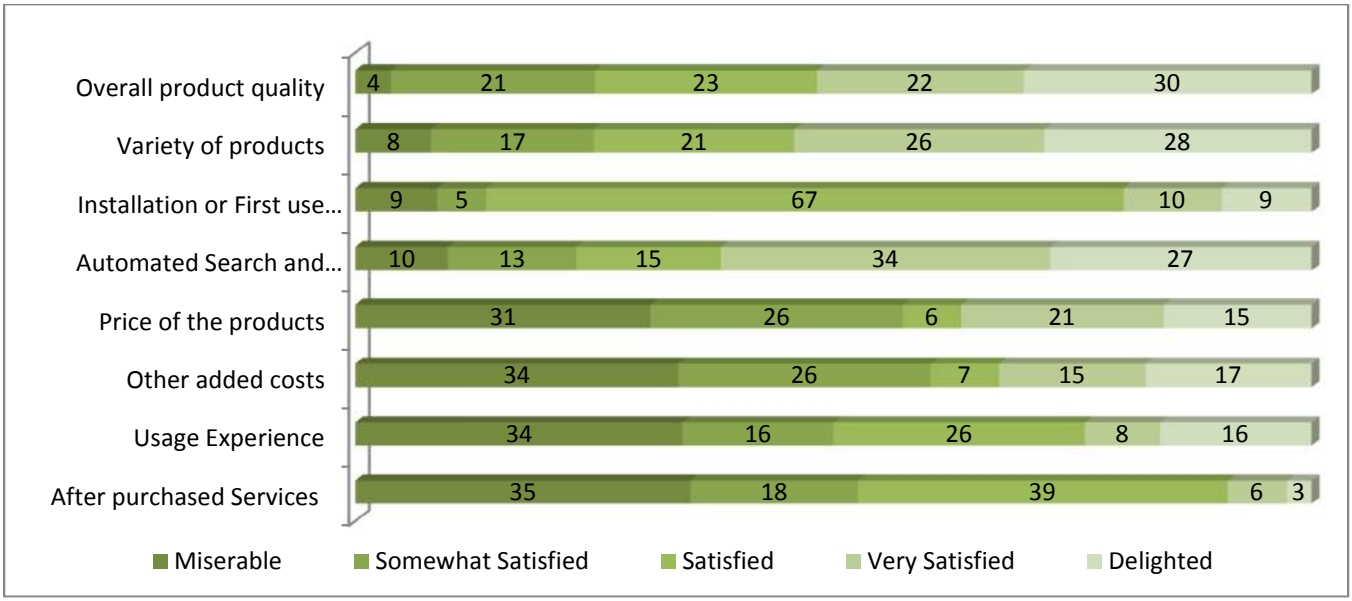


Fig. 1.2: Percentage of Respondent's Satisfaction Measurement about Online Purchased Product Quality

TABLE 1.3: The Measurement of Attributes Linked with Product Performance are important

Importance	Not Imp.	Not so imp.	Somewhat Imp.	Imp.	Most Imp.	Cannot say
Overall product quality	12	17	40	109*	216*	6
Variety of products	36	75	56	112*	114*	7
Price of the products	89	96	113*	56	26	20
other added costs like shipping or delivery charges etc.	189*	102*	35	36	35	3
Automated Search and information presentation	221*	56	39	46	36	2
Installation or First use experience	30	26	49	181*	109*	5
Usage Experience	53	61	85	97	99	5
After purchased Services (like: - warranty, repair, return, replace exchange etc.)	12	26	97	132*	131*	2

The table 1.3 explains the reality check of product performance is important or not. Here researcher had asked various points like not important not so important; somewhat important; important and most important. We had a category like cannot say for those respondents are confused or not need to give any comments. The table explains that Overall product quality; Variety of products; Installation or first uses experience; after purchased services (like: - warranty, repair, return, replace exchange etc.) are important and most important for the respondents but price of the products; other added costs like shipping or delivery charges etc.; automated search and information presentation are somewhat important; not important; and not so important category respectively.

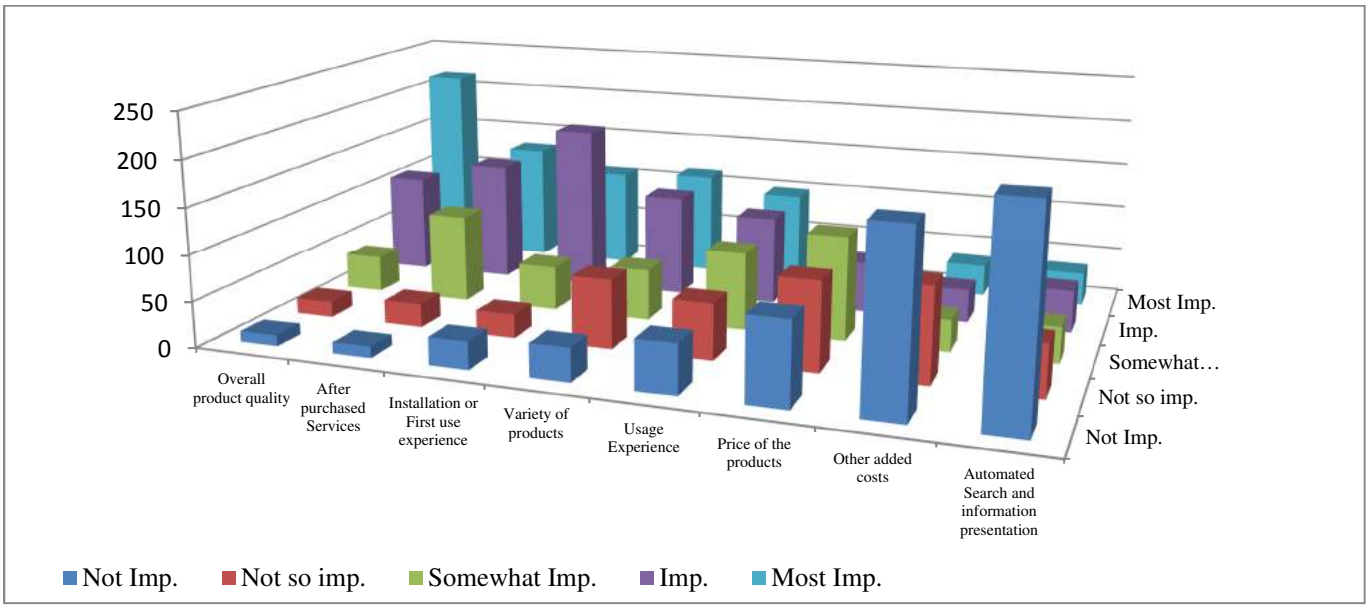


Fig. 1.3: The Measurement of Attributes Linked with Product Performance is Important

To get the very-very clear idea of consumer perception on internet marketing researcher had compared the two tables thatwere the factors table which explained percentage of the importance in consumer mind and second table that mapped the percentage of satisfaction on those factors.Refer to figure 1.4, it clearly showed that internet marketers had passed the consumer test in all there expectation except three these are "After purchase services" where the importance meter is showed that it is 66% important to consumer but consumer were only 9% satisfied, "Installation or first use experience" where the importance meter is showed that it is 73% important to consumer but they were only 20% satisfied and "Usage experience" where the importance meter is showed that it is 50% important to consumer but they were only 24% satisfied; where the new age consumers were finding themselves hesitant in using the internet marketing media to satisfy their day to day needs this is the main reason where the consumers were not able to shift themselves over internet completely but researcher was sure that internet marketer will definitely solve these problems by altering their new strategies for marketing their products.

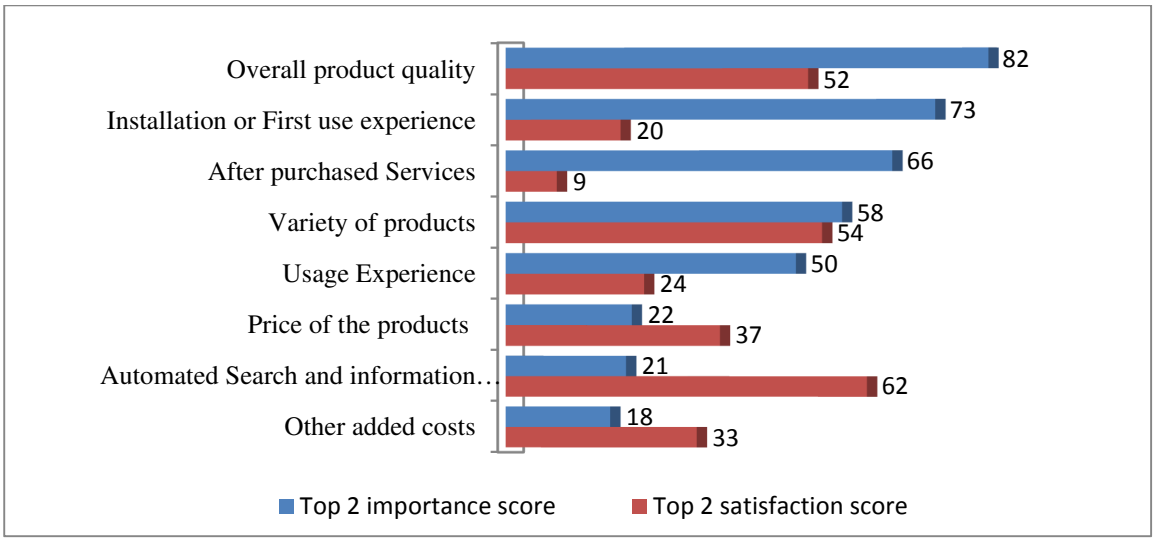


Fig. 1.4: Comparison of Percentages of Satisfaction Factors and Factors of Importance

7. CONCLUSION

The present study concluded that, internet marketing is making its strong way in the consumer's lives and innovating many strategies to attract consumers; Most of the consumers are use the online marketing not only to buy the product but also to compare prices and features of product. It is essential for the online marketers to understand the customer perception towards the online marketing. This study throws light on the customer perception which is very positive and consumer are adopting internet marketing as a daily needs but still there are areas which could be improved in the current scenario of internet marketing.

REFERENCES

[1] http://www.businessdictionary.com/definition/customer-perception.html

[2] Chaffey, D. 2006. Internet marketing: strategy, implementation and practice, Financial Times Prentice Hall.

[3] Ryan, D. & Jones, C. 2009.Understanding digital marketing: marketing strategies for engaging the digital generation, Kogan Page.

[4] Chaffey, D. 2009. E-business and e-commerce management: strategy, implementation and practice, GB, Pearson Education.

[5] Kaplan, A. M. & Haenlein, M. 2010. Users of the world, unite! The challenges and opportunities of Social Media.*Business horizons*, 53, 59-68

[6] Tulsi Raval, (2015) Evaluation of the Effectiveness of Internet Marketing. *International Journal of Management and Social Sciences Research* (IJMSSR) ISSN: 2319-4421 Volume 4, No. 5, May 2015. Retrieved from http://www.irjcjou0rnals.org /ijmssr/May2015/16.pdf

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

Performance of Government Spending on India's Economic Growth

Waseem Ahmad Khan[1], Aditi Agrawal[2]

Department of Economics, AMU, Aligarh
[1]wkhan312@gmail.com; [2]aditiagrawal5@gmail.com

Abstract: ***Economic growth refers to increase in a country's potential GDP, although this differs depending on how national product has been measured. Economic growth must be sustained for a developing economy to break the circle of poverty. Countries usually pursue loose fiscal policy to achieve accelerated economic growth. Perhaps, the aspect of public finance that has received much attention in the literature, debate and empirical analysis is the economic effects of public expenditures. Many scholars support a large public expenditure on the ground that it puts money into circulation, increased investment and employment and reduces tax averseness. For decades, public expenditures have been expanding in India, as in any other country of the world; increases in the finances of the Federal Government have led to a number of theoretical and empirical investigations of the sources of such increases. Researchers have particularly questioned whether increases in the size of the federal budget tend to be initiated by changes in expenditures followed by revenue adjustments or by the reverse sequence, or both. The objective of this paper is to investigate the effect of public expenditures on economic growth using a time series data of India for the period 1990-91-2014-15. This paper works on three main objectives. First, we have tried to show the trend and growth pattern of public expenditure and GDP in India. Secondly, we have tested causal relationship between the above two variables to judge whether there exist any kind of directional relationship between them or not and if yes then uni-directional or bi-directional. Lastly our paper aims to analyze whether government spending causes economic growth in India. The study is completely based on secondary data.***

Keywords: Government expenditure, impact, GDP, analysis

1. INTRODUCTION

Economic growth refers to increase in a country's potential GDP, although this differs depending on how national product has been measured. Economic growth must be sustained for a developing economy to break the circle of poverty. Countries usually pursue fiscal policy to achieve accelerated economic growth. The aspect of public finance that has received much attention in the literature, debate and empirical analysis is the economic effects of public expenditures. Expenses incurred by the public authorities- central, state and local self-governments are called public expenditure. Such expenditures are made for the maintenance of the governments as well as for the benefit of the society as whole. There was a continuous debate in the academic circles in the nineteenth century that public expenditures were wasteful. Public expenditures must be kept low as far as practicable. This conservative thinking died down in the twentieth century, especially after the Second World War. As a modern state is termed a**'welfare state'**, the horizon of activities of the government has expanded in length and breadth. Now we can point out the reasons for enormous increase in public expenditure throughout the world even in the capitalist countries where laissez-faire principle operates. Many support a large public expenditure on the ground that it puts money into circulation, increased investment and employment and reduces tax averseness. However, public expenditure has some obvious economic consequences. Public expenditure plays a significant role in the functions of economy at almost all stages of economic development. It counteracts inflationary pressures and helps to stabilize the economy by formulating suitable fiscal policies such as drawing up the budget, providing surpluses in deficit and boom in recessions by accelerating the rate of development expenditure in the public sector steadily. The attainment of these goals of the state governments depends on the fiscal policy of the central government and the autonomy of the state governments in raising revenue and spending it. The public expenditure can be used as a lever to raise aggregate demand and thereby to get the economy out of recession. On the other hand, through variation in public expenditure, aggregate demand can be managed to check inflation in the economy. Public expenditure can also be used to improve income distribution, to direct the allocation of resources in the desired lines and to influence the composition of national product. In the developing countries also, the role of public expenditure is highly significant. In the developing countries, the variation in public expenditure is not only to ensure economic stability but also to generate and accelerate economic growth and to promote employment opportunities. The public expenditure policy in developing countries also plays a useful role in alleviating mass poverty existing in them and to reduce inequalities in income distribution. In what follows, we shall study the causes of growth of public expenditure.

2. CAUSES OF INCREASE INPUBLIC EXPENDITURE

- **Size of the Country and Population:** We see an expansion of geographical area of almost all countries. Even in no-man's land one finds the activities of the modern government. Assuming a fixed size of a country, developing world has seen an enormous increase in population growth. Consequently, the expansion in administrative activities of the government (like defence, police, and judiciary) has resulted in a growth of public expenditures in these areas.
- **Defence Expenditure:** The tremendous growth of public expenditure can be attributed to threats of war. No great war has been conducted in the second half of the twentieth century. But the threats of war have not vanished; rather it looms large. Thus, mere sovereignty, demands a larger allocation of financial sources for defence preparedness.
- **Welfare State:** The 19th century state was a**'police state'**while, in 20th and 21st centuries modern state is a**'welfare state'**. Even in a capitalist framework, socialistic principles are not altogether discarded. Since socialistic principles are respected here, modern governments have come out openly for socio-economic uplift of the masses. Various socio-economic programmes are undertaken to promote people's welfare. Modern governments spend huge money for the purpose of economic development. It plays an active role in the production of goods and services. Such investment is financed by the government. Besides development activities, welfare activities have grown tremendously. It spends money for providing various social security benefits. Social sectors like health, education, etc., receive a special treatment under the government patronage. It builds up not only social infrastructure but also economic infrastructure in the form of transport, electricity, etc. Provision of all these require huge finance. Since a hefty sum is required for financing these activities, modern governments are the only providers of money. However, various welfare activities of the government are largely shaped and influenced by the political leaders (Ministers, MPs, and MLAs to have a political mileage, as well as by the bureaucrats (MPLAD)).
- **Economic Development:** Modern government has a great role to play in shaping an economy. Private capitalists are utterly incapable of financing economic development of a country. This incapacity of the private sector has prompted modern governments to invest in various sectors so that economic development occurs. Economic development is largely conditioned by the availability of economic infrastructure. Only by building up economic infrastructure, road, transport, electricity, etc., the structure of an economy can be made to improve. Obviously, for financing these activities, government spends money.

OBJECTIVES

This paper aims to detect the impact of Total Public Expenditure on economic growth of India. For this purpose we have set three main objectives which are as follows:

1. To study the trend and growth pattern of public expenditure and GDP in India.
2. To identify the directional relationship between the two variables.
3. To detect the impact of public spending on GDP of the country.

Hypotheses

For fulfilling the above objectives, we have set two null hypotheses:

1. H_0: There is no directional relationship between public expenditure and GDP.
2. H_0: There is no significant impact of Public spending on country's GDP.

3. TREND AND PATTERN OF PUBLIC EXPENDITURE AND GDP IN INDIA

The relationship between public expenditure and national income has been an enduring issue in economics and public finance literatures both at theoretical and empirical levels. The focus has been mainly on two approaches, first, Wagner's law approach (Keynes, 1883), which states that national income causes public expenditure and second, Keynesian approach (Keynes, 1936), which states that public expenditure causes national income. These theories prescribe for government interventions in the economy through the fiscal policies as this plays a crucial role in the development process. According to Keynes, government could alter economic downturns by borrowing money from the private sector and then returning the money to the private sector through various spending programs. Keynesian approach pointed out that public expenditure is an exogenous factor and a policy instrument for mounting national income. Therefore, it posits that the causal relationship between public expenditure and national income runs from expenditure to income.

TABLE 1: Total Public expenditure and Gross domestic Product in India.

YEARS	TOTAL EXPENDITURE (In Billion)	AGR (TE)	GDP (In Billion)	AGR (GDP)
1990-91	1079.94	-	5686.70	-
1991-92	1144.83	0.060087	6531.20	0.148504
1992-93	1260.63	0.10115	7483.70	0.145838
1993-94	1460.50	0.158548	8592.20	0.148122
1994-95	1652.05	0.131154	10127.70	0.178709
1995-96	1830.59	0.108072	11918.13	0.176785
1996-97	2064.14	0.127582	13786.17	0.156739
1997-98	2388.14	0.156966	15271.58	0.107746
1998-99	2875.55	0.204096	17511.99	0.146705
1999-00	3070.79	0.067897	19520.36	0.114685
2000-01	3368.56	0.096969	21023.14	0.076985
2001-02	3748.20	0.112701	23483.30	0.117022
2002-03	4269.46	0.139069	25306.63	0.077644
2003-04	4387.26	0.027591	28379.00	0.121406
2004-05	4778.60	0.089199	32422.09	0.142468
2005-06	5197.37	0.087634	36933.69	0.139152
2006-07	5969.96	0.14865	42947.06	0.162815
2007-08	7263.98	0.216755	49870.90	0.161218
2008-09	8995.44	0.238362	56300.63	0.128927
2009-10	10423.43	0.158746	64778.27	0.150578
2010-11	12175.40	0.16808	77841.15	0.201655
2011-12	13323.96	0.094334	87360.39	0.122291
2012-13	14352.73	0.077212	99513.44	0.139114
2013-14	15875.74	0.106113	112727.64	0.132788
2014-15	17137.29	0.079464	124882.05	0.107821
CAGR	11.69%		13.15%	

Source: Reserve Bank of India and IMF Statistics

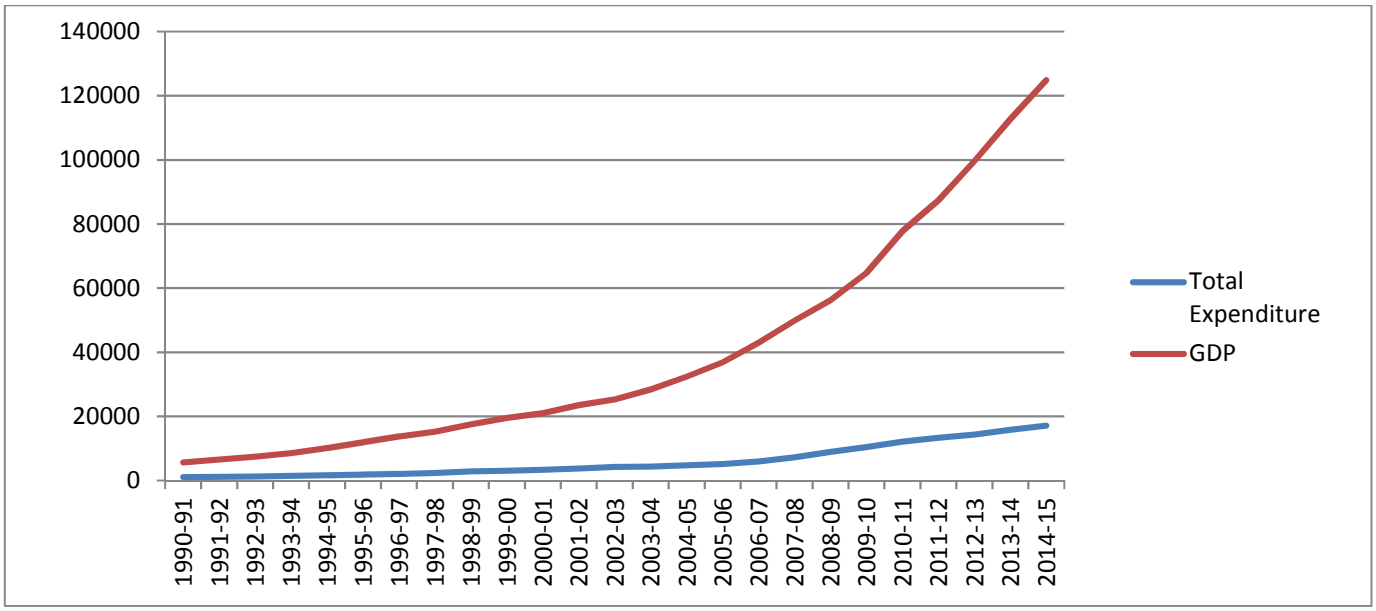


Chart 1: Trend and Growth Pattern of Total Expenditure and GDP

Our first and foremost objective here is to study the trend and growth pattern of public expenditure and gross domestic product. If we have a look at the table and the chart shown above, both the variables have marked a positive growth in our 25 years period of study. While GDP has grown to almost 21 folds from about 5686 billion in 1990-91to 124882 billion in 2014-15, public expenditure grew around 16 folds from 1079 billion in 1990-91 to 17000 billion in 2014-15. This clearly suggests that there has been an increasing trend, but in the initial years, the growth has been minimal in both the cases. Especially, if we have a look at our expenditure chart, it registered a negligible growth almost touching the horizontal axis. It was only after a decade and a half since the reforms had been undertaken that the expenditure shown a 0.2% of Annual Growth Rate.

So we may say that the growth pattern of expenditure has been quite slow but if we look at the overall figure i.e. the CAGR which came out to be 11.69%, we may conclude that it has shown satisfactory growth not much though. Coming to the next variable, GDP has grown at a Compound Annual Growth Rate of 13.15% which again can be considered a decent growth keeping in mind that we were at 5686 billion in 1990-91. Focusing on the chart, we can clearly see that GDP growth has been sluggish giving more or less a flatter curve till 1999-2000 after which it has rise at a faster pace thereby giving a steeper curve as can be seen in the above diagram. The gap between the two variables has gradually increased with time so much so that public expenditure remained below the 20,000 mark whereas GDP has shown a massive rise above 120000 billion in 2014-15.

4. A CAUSAL RELATIONSHIP BETWEEN THE VARIABLES

There are different types of variables that inter connectedly shows the impact on the Indian economy. Some of the variable has the bilateral relationship whereas some shows the single directional relationship. In this study we are here to find out that the directional relationship between the public expenditure and GDP exist or not and either they have the single directional relationship or bilateral. In this part of the paper, we are trying to find out the causal relationship between Total Public Expenditure and Economic Growth using pair wise granger causality test. After knowing the direction of the relationship, we will try to show the impact of public Expenditure on gross domestic product with the help of regression analysis which will fulfill the main objective of this paper.

5. PAIR-WISE GRANGER CAUSALITY TEST

Granger Causality test has been used to see whether the time series i.e. variable X is useful for forecasting another variable Y. This Paper will help us to see the causality relationship between public Expenditure with GDP. Enders suggests granger causality and mentions that it is tested in order to understand that whether the lag value of one variable cause another variable or not. If there are two equation models X and Y having p lags, x is granger cause y if the whole co efficient are not equal to zero. Generally the pair wise granger causality test model in the form of X and Y are:

$$X_t = \beta_0 + \beta_1 Y_{t-i} + \beta_2 X_{t-j} + u_{1t}$$
$$Y_t = \beta_0 + \beta_1 Y_{t-I} + \beta_2 X_{t-j} + u_{2t}$$

Here we assume that X and Y variables are stationary and we also suppose that the disturbance of u_{1t} and u_{2t} are uncorrelated. The null hypothesis of Granger causality can be expressed as:

H_0: Y does not Granger Cause X and vice versa.

TABLE 2: Result From Pair-Wise Granger Causality Test with Lag 1

Null Hypothesis:	Obs	F-Statistic	P-value
GDP does not Granger Cause TE TE does not Granger Cause GDP	24	0.01471 4.96318	0.9046 0.0370

TABLE 3: Result From Pair-Wise Granger Causality Test with Lag 2

Null Hypothesis:	Obs	F-Statistic	P-value
GDP does not Granger Cause TE TE does not Granger Cause GDP	23	1.26131 2.04458	0.3072 0.1584

TABLE 4: Result From Pair-Wise Granger Causality Test with Lag 3

Null Hypothesis:	Obs	F-Statistic	P-value
GDP does not Granger Cause TE TE does not Granger Cause GDP	22	6.76277 4.62801	0.0042 0.0370

Result of the granger causality test has been judged under the 5% level of significance, it means that if the result is less than the 5% level of significance we reject the null hypothesis whereas the result greater than 5% will accept the null hypothesis. Now, we have three results of granger causality test that is for one lag, two lags and three lags. Actually we have an opportunity to perform the test up to four lags as Akaike Information Criterion and Schwartz Information Criterion allow us to perform the test within four lags. As can be seen above, two of our results are correct but to perform the regression test we have to choose one and which one is best for our analysis depends on how much relationship we have found to be significant.

The result from the lags 1 shows that one null hypothesis seems to be accepted or we can also say that p-value is not significant with 5% level of significance that's why we are not considering this result. Similarly the result from the lag 2 also seems to be accepting the null hypothesis in both the direction. Now considering the result from lags three, both the null hypothesis are rejected that means we are having a bi-directional relationship between the variables, so we are choosing the lags 3 model according to the SIC and AIC and the result are as follows:

- GDP (Gross Domestic Product) P-value is 0.0042 which is less than significant value so null hypothesis is rejected and conclude that GDP affects Total Public Expenditure.
- TE (Total Expenditure) P-value is 0.0370 which is less than significant value so again our null hypothesis is rejected and can be concluded that Total Public Expenditure affect the GDP. If Total Public Expenditure increases it will have an impact on GDP causing an increase or decrease in the GDP.
- The final result from the pair wise granger causality test shows that there is the bi directional relationship between the Public Expenditure and GDP and also shows that there is impact of Total Public expenditure on India's GDP within 5% level of significance.

6. IMPACT OF TOTAL PUBLIC EXPENDITURE ON GDP IN INDIA

With the result from the Pair wise granger Causality test we can say that there is a bidirectional relationship between the variables under study. We will now perform the Multiple regression to show the impact of TE on GDP.

Model,

$\ln GDP = \beta_0 + \beta_1 \ln TE + u_1$

Where,

lnTE = Natural Log of Total Expenditure

lnGDP = Natural Log of Gross Domestic Product

U_1 = Error terms

And Coefficient of variable is β_0 and β_1

7. RESULT OF THE REGRESSION

TABLE 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.918[a]	.916	.916	.05794	.916	6175.401	1	23	.000
a. Predictors: (Constant), TE									

TABLE 6: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.344	.113		11.857	.000
	TE	1.061	.014	.998	78.584	.000
a. Dependent Variable: GDP						

In this study we have used regression analysis to know if there is any significant impact of Public expenditure on India's GDP. The time series data that we have used in this regression model have been converted into natural log so as to make the series comparable in growth form. Coming to the results, we can see our model is a good fit keeping in mind the value of R^2 (91.6%)in table 5 given above. Further, in table 6 we can see that with 1% change in Total Public Expenditure, a 1.061% change in GDP is taking place i.e. whatever changes in the public expenditure are taking place are leading to more or less equal changes in country's GDP. Here, it is important to point out the fact that Total Public Expenditure have a significant impact on country's GDP in the sense that a single percent rise in Public Expenditure will lead to even greater changes in country's GDP.

8. CONCLUSION

After working on the set objectives, it can be concluded that both our variables, Public Expenditure and GDP in India has shown an upward trend with a Compound Annual Growth Rate of about 11% and 13% respectively. We achieved our second objective using Pair wise Granger Causality test to show the directional relationship between the variables and proved that both the variables are having causal relationship with significant p value. Thirdly, we run the regression analysis to show the significant impact of public expenditure on the GDP of the country. Both our null hypothesis got rejected. This paper clearly depicts that public expenditure has a positive influence on India's economic growth in the sense that if government decides to raise the level of its spending, it will definitely lead to an upward swing in the GDP statistics.

REFERENCES

[1] Afzal, M. and Abbas, Q. (2010) Wagners law in Pakistan: Another look, *Journal of Economics and International Finance*, 2(1), 12-19.

[2] Ahsan, S. M., Andy C. K. and Balbir S. S. (1992) Public Expenditure and National Income Causality: Further Evidence on the Role of Omitted Variables, *Southern Economic Journal*, 58(3), 623-634.

[3] Al-Faris, A. F. (2002) Public Expenditure and Economic Growth in the Gulf Cooperation Council Countries, *Applied Economics*, 34(9), 1187-1195.

[4] Ansari, M., Gordon, D. V. and Akuamoah, C. (1997) Keynes versus Wagner: Public Expenditure and National Income for Three African Countries, *Applied Economics*, 29(3), 543-550.

[5] Aregbeyen, O. (2006) Cointegration, Causality and Wagners Law: A Test for Nigeria, *Economic and Financial Review*, 44(2), 1-18. Ayo, O. S., Ifeakachukwu,

[6] N. P. and Ditimi, A. (2011) A Trivariate Causality Test among Economic Growth, Government Expenditure and Inflation Rate: Evidence from Nigeria, *The Journal of World Economic Review*, 6(2), 189-199. Babatunde,

[7] M. A. (2008) A bound testing analysis of Wagners law in Nigeria: 1970-2006, Conference Paper presented at African Econometric Society, 13th Annual conference on econometric modeling in Africa 9-11 July 2008, University of Pretoria, South Africa.

[8] Bagdigen, M. and Cetintas, H. (2003) Causality between Public Expenditure and Economic Growth: The Turkish Case, *Journal of Economic and Social Research*, 6(1), 53-72.

[9] Bohl M. T. (1996) Some International Evidence on Wagners Law. *Public Finance*, 51(2), 185-200.

[10] Chang, T. (2002) An Econometric Test of Wagners Law for Six Countries Based on Cointegration and Error-Correction Modelling Techniques, *Applied Economics*, 34(9), 1157-1169.

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

The Waste-to-Energy Business Model in Mexico: A Study of Three Companies in the Country

EL MODELO DE NEGOCIOS WASTE-TO-ENERGY EN MÉXICO: UN ESTUDIO DE TRES EMPRESAS EN EL PAÍS

José G. Vargas-Hernández[1], Jesús Iván González Ontiveros[2]

[1]M.B.A.; Ph. D.; Department of Administration, University Center for economic and Managerial Sciences University of Guadalajara.Periférico Norte 799 Edificio G-201-7, Núcleo Universitario Los Belenes CUCEAZapopan, Jalisco C.P. 45100; MéxicoTel y fax: +52(33) 37703340, 37703300 ext 25685 josevargas@cucea.udg.mx.

[2]Maestría en Negocios y Estudios Económicos. Centro Universitario de Ciencias Económicas y Administrativas. Universidad de Guadalajara, Periférico Norte 799, Núcleo Universitario Los Belenes, CUCEA, Zapopan, Jalisco C. P. 45100; México

Abstract: ***The main objective of this research is to identify the main aspects presented in three companies of energy generation from biogas produced by landfills in three cities of the country: "BENLESA" in Salinas Victoria, Nuevo León; "YLEM ENERGY LIMITED" in Aguascalientes, Aguascalientes; And "Biogas Juárez" in Ciudad Juárez, Chihuahua. Analyzing these companies, their way of operating and business environment identifies the existence of business opportunities in this area. It is concluded that there is a great potential of wasted business that works through market mechanisms in strategic alliance with public entities as a more viable option for the reduction of investment risk and the viability of the projects. The use of high technologies, composition of city waste and available infrastructure are key factors.***

Keywords: Biogas, Business of bioenergy, Landfills, Waste-to-energy

JEL: Q4, Q53, M2

Resumen

El objetivo principal de esta investigación es el identificar los principales aspectos presentados en tres empresas de generación de energía a partir del biogás producido por rellenos sanitarios en tres ciudades del país: "BENLESA" en Salinas Victoria, Nuevo León; "YLEM ENERGY LIMITED" en la Aguascalientes, Aguascalientes; y "Biogás Juárez" en Ciudad Juárez, Chihuahua. Analizando dichas empresas, su modo de operar y entorno de negocios se identifica la existencia de oportunidades de negocio en este ámbito. Se concluye que existe un gran potencial de negocios desaprovechado que funciona mediante mecanismos de mercado en alianza estratégica con entidades públicas como opción más viable para la reducción del riesgo de las inversiones y la viabilidad de los proyectos. El uso de tecnologías de última generación, composición de los desechos de la ciudad e infraestructura disponible son factores clave.

Palabras clave: Biogás, Empresas de bioenergía, Relleno Sanitario, Waste-to-energy

1. INTRODUCTION

The world moves with energy; transport, companies and people demand energy at all times to carry out their common activities. Society consumes energy at accelerated rates, which mostly comes from fossil fuels, mainly hydrocarbons, such is the vertiginous consumption of hydrocarbons that for decades has been concerned about the underlying effects it causes. The environmental impact caused by the combustion of hydrocarbons and its characteristic feature of being a nonrenewable resource gave a sound of alarm in diverse scientific, civic and political groups arising a great interest by the renewable energy sources. Solar, wind, geothermal and bioenergy are some of the main sources of non-renewable energy.

As Mexico is a country with a large population and abundant natural resources, the use of renewable energy has had importance at different levels and a legal framework has been sought for the emergence of companies that are dedicated to the production of energy with renewable sources. Fortunately, the use of biomass to generate energy is promising enough to pay attention to the various uses that can be given to waste. It is said that each person produces one kilo of solid urban waste (MSW) a day. Three companies are already taking advantage of this business opportunity. This research focus on electric power generation plants from urban solid waste as profitable businesses in the country. For it there are being studied three companies of this turn that are operating in the country, identifying their strategies it can be stipulated a serial of key factors for the opening and successful operability of this type of business in Mexico.

2. BACKGROUND OF THE PROBLEM

The supply of energy has been a problem that has preoccupied several interest groups for several decades, not only if the

supply can satisfy the demand but also the harmful impact of its production and use on the environment through Greenhouse gases (GHG). The enormous level of consumption of hydrocarbons in the world has led to the change of paradigms to obtain the energy necessary for the operation of the economy. According to data from the World Bank (2017), in 2014 81% of the total energy consumed in the world came from hydrocarbons while alternative energy has a share of around 10% globally.

The alternative energies are all those that are not based on the combustion of the hydrocarbons and, in general, they are renewable energy sources. Examples of renewable energies are wind energy, solar energy, geothermal energy, bioenergy or tidal energy. According to Masera, Coralli, García, Riegelhaupt, Arias, Vega, Díaz, Guerrero and Cecotti (2011), bioenergy, which is the energy that can be obtained from biomass, represents 77% of total renewable energy, estimating that by 2035 this type of energy source would represent 25% of the total energy required by the world.

According to Cerdá, Caparrós and Ovando (2008), renewable energy can be used for electricity generation, thermal use and biofuel production; However, only bioenergy is capable of being used for all three things, unlike wind and solar energy that cannot be converted into biofuel. Biomass, for its part, is a constituent part of living beings, can be divided according to its source (Monreal, 2008):

A. Food source: It comes from grains or other crops, it is also used for human and animal consumption.

B. Non-food source: It comes from residues such as manure, crop and forest residues, food waste and municipal solid waste.

A shift from hydrocarbon-based to biomass-based economy would represent a significant shift in technical and socioeconomic systems (McCormick & Kauto, 2013). Although its large-scale production is possible, its effects on food security have not been satisfactorily weighed (Reilly, 2015).Thus, biomass from food sources is often limited in many crops such as maize and beet (Becerra, 2014). This is due to the food deficit that exists in the country, especially in maize.

Therefore, biomass from non-food sources is often seen as a better alternative. There is a significant trend towards the use of various wastes for energy production, which led many investors to pay attention to electric power generation plants based on urban solid waste, millionaire's businesses that are evaluated here.

3. JUSTIFICATION

This work was born to generate a rapprochement with the companies that have succeeded in turning power plants based on urban solid waste in Mexico. In particular, it is studied the factors and strategies that led three companies of the same sector to their operation and staying in the energy market. The study of three companies in operation allows the identification of factors that can be used for the stipulation of general factors that can help in the implementation of more companies of energy generation based on urban solid waste in more areas of the country that result successful and profitable for both private capital and social interest.

4. THEORETICAL-CONCEPTUAL REVIEW

Bioenergy is the energy that is obtained from biomass. It can be found in a variety of forms. Biomass is the constitutive material of living beings, excreta or non-living remains (Masera et al, 2011). Salinas and Gasca (2009) extend the definition of biomass referring to that can be any type of organic matter that has had its immediate origin in some biological process of organisms recently alive, classified even as follows:

a) Primary biomass: vegetal biomass, agricultural and forest residues.

b) Secondary biomass: manure and meat of herbivorous animals.

c) Tertiary biomass: remains and ejection of carnivorous animals.

d) Natural biomass: produced in wild ecosystems.

e) Residual biomass: extractable from agricultural, forestry and human activities.

f) Energy crops: any agricultural crop whose purpose is the supply of biomass for the production of biofuels.

At the international level, 85% of the energy generated by biomass is considered as "traditional use", i.e. use of firewood or manure at domestic levels; The other 15% is of industrial use for the creation of fuels, heat and energy processes, and electricity (Donald, 2007).

One of the many products that are the result of the processing of biomass are biofuels, defined as all those biofuels such as alcohols and other chemicals that come mainly from biomass that can substitute to some extent the use of gasoline in transport or destined producing electricity (Salinas and Gasca, 2009). On the other hand, Masera et al (2011) made a classification of biofuels according to their origin:

a) Wood fuels from natural forests and plantations

b) By-products of logging and the timber industry

c) Agricultural byproducts

d) Livestock byproducts

e) Agro-industrial byproducts

f) Energy crops

g) By-products of municipal origin

However, for the purposes proposed in this work, attention is being devoted to everything related to by-products of municipal origin or also called solid urban waste (MSW). A solid residue is nothing more than any product, matter or substance from human activity, which can have different origins (households, industries, etc.) and diverse composition (paper, glass, plastic, etc.). The product of greatest interest in urban solid waste processing is biogas, a gaseous fuel generated by biodegradation reactions of organic matter in the absence of oxygen. The produced methane can easily be converted into electricity for use in homes or industries.

One of the most appropriate methods for the generation of methane from municipal waste is anaerobic digestion (Nasir, Ghazi and Omar, 2012). For Ferrer and Pérez (2010) this process generates hydrogen sulphide and carbon dioxide in large quantities which represents a lower yield of methane quality. Even so, anaerobic digestion is still the most viable method with the current technology, because it represents a relatively lower cost and less production of waste arising from the production process, making this method one of the most used in the world (Morita and Sasaki, 2012).

Opportunities in this sector have been exploited by governments and companies in several countries around the world, especially in Europe (Cerdá, Caparrós and Osvando, 2008). In Mexico, this potential has not been properly exploited, and three companies that have been successful in this industry are analyzed: Benlesa in Salinas Victoria, Nuevo León; Ylem Energy Limited in Aguascalientes, Aguascalientes; And Biogas Juárez in Ciudad Juárez, Chihuahua.

For the analysis of these three companies three perspectives are used that are considered strategic in the companies (Peng, 2012). First, an analysis of the industry in which these companies compete; Second, an analysis based on resources and, thirdly, an analysis from an institutionalist approach. The industry analysis corresponds to a review of the five operating forces in the well-known Porter Diamond, which emphasizes the state of five determinants in a specific industry (Porter, 1991):

1) Degree of rivalry between competitors: a high degree of rivalry implies a more intense competition among companies in the sector.
2) Threat of substitute products: The ease with which a product can have substitutes poses a threat to industry companies.
3) Bargaining power of buyers: the degree of negotiation that consumers have of the product in question will determine the production strategies of a company.
4) Threat of entry of competitors: each industry presents barriers of entry that depending on its intensity will determine the possible entry of more companies to the industry.
5) Bargaining power of suppliers: A high degree of bargaining power of suppliers can bring great administrative problems to companies, being ideal a great variety of suppliers available.

From the second perspective, the resource-based view, it takes as reference the VRIO model designed by Barney and Griffin (1992). VRIO is an acronym for the words valuable, rarity (Barroso and Griffin (1992), emphasizing the heterogeneity of the resources of a company, inimitable and organization:

a) Valuable: resources that have or generate value for the company and the consumer.
b) Rarity: the rarity of the resource in question makes it valuable and attractive.
c) Inimitable: resources that are harder to imitate by competitors give important intangible assets to the company.
d) Organization: it is the way in which the resources are organized and how the organization aligns itself with others.

On the other hand, the analysis is done from the institutionalist perspective, i.e. all norms and rules governing human and social action, conditioning and directing any relationship that arises in it, as they say, represent the "rules of the game" (North, 1990). North (1990) distinguishes institutions in two types: formal institutions, which include laws, rules and / or regulations imposed by government entities or with formal recognition by all members of society; And informal institutions whose main characteristic is to take into account the culture, traditions and beliefs of a given society.

5. REVIEW OF THE EMPIRICAL LITERATURE

For the empirical review, biomass processing plants of different types and in different countries or geographic areas are considered, increasingly delimiting to projects in Mexico based on solid urban waste. In the case of Europe, it has a big boost to biofuels. McCormick and Kautto (2013) note the increase in research and development projects, especially in projects focused on biofuels and bio refineries in countries like Germany. Cerdá, Caparrós and Ovando (2008) analyze that since 1990 the European Union has launched a plan for the development of renewable energy to reduce climate change. They found that the development of bioenergy companies in the European Union depends to a large extent on the existence of policies that encourage such companies and at the same time avoid a negative impact on biodiversity and food prices.

Reilly (2015) uses data from the Food and Agriculture Organization of the United Nations (FAO) to make future projections on the impact of biofuel production on food prices, concluding that there will be no significant impact as long as foreseen the growth policy of this industry. On the other hand; Razo et al (2007) argue that the best market for liquid biofuels is transportation, however, the cost of waste collection and transportation is high with current technology, especially in Latin American countries.

Many authors see forest biomass as a great business opportunity, such as Favero and Mendelsohn (2014) who argue that the production of energy from wood is cost-efficient as long as adequate incentives exist of the government. Sims (2006) places an emphasis on the process of collecting and transporting the plant in the cheapest way possible subject to the availability of fuels and high capital costs. Virani (2011) adds to this the relative price of fuels in use at that time.

There are also a large number of authors who have focused on biofuels from food sources, such as Becerra (2014) who performed simulation routines in different scenarios concluded that ethanol production was feasible in Mexico but only if it is manufactured to from sweet sorghum and sugar cane. Another of its conclusions was the crucial role of institutions to create certainty in the sector in the long term. Massieu and Acuña (2015) add that a Law for the Promotion and Development of Biofuels exists in Mexico since 2008, however, although the sector is incipient, it has already presented problems of socio-environmental violence since some projects have already attacked peasant and indigenous peoples.

In the area of energy production based on municipal waste, Brown and Mann (2008) see great potential in companies with systems that combine heat and power (CHP) differentiating a rural market that has abundance of biomass and ease of implementation of small processing plants, and a municipal market that benefits from waste management systems and infrastructure to collect and distribute energy economically. Williams (2011) makes a study on the effectiveness of the "Waste-to-energy" model in Sweden compared to the companies of this type in the United States, concluding that a legal framework that provides certainty in conjunction with fiscal incentives policies were the key factors for the success of these companies in Sweden.

For their part; Rafati, Rahmani Boldaji, Khodadadi et al. (2016) indicate that in order to apply a certain technology for the conversion of urban waste to energy, must be taken into account the composition of municipal solid waste, the already functional technologies and the waste management strategies that has the city. Bustos (2009) sees a problem of waste collection and recycling in developing countries in which it suggests the need for the involvement of companies and productive associations. Similarly, Medina (2010) notes the potential for the formation of public-private partnerships among cooperatives of collectors, companies and public institutions that can treat waste at low cost. Bernache (2003) identifies the lack of an efficient system of municipal waste management in Mexican cities due to a low interest on the part of the authorities.

6. CONTEXTUAL FRAMEWORK

The development of the section of the contextual framework is divided into three subsections, one for each power generation company based on municipal solid waste: Benley, Ylem Energy Limited and Biogás Juárez.

A. Bio energy of Nuevo León, S.A. de C. V. (BENLESA)

BENLESA is a private public association (APP) that emerged from a strategic alliance between the private company Bioeléctrica de Monterrey, SA de CV, a company that is a subsidiary of Sistemas de Energía Internacional, SA de CV (SEISA) and the Government of the State of Nuevo León through the System for Ecological Management and Waste Processing (SIMEPRODE).It is responsible for the operation of the electric power generation plant based on the biogas produced by the Salinas Victoria landfill, Nuevo León. It provides electricity to the 13 associated entities through a cogeneration permit by the Energy Regulatory Commission (CRE). It is recognized as the first project in Latin America to use this type of technology (Pino, 2013).

This project was sponsored by the Global Environment Facility (GEF) and the World Bank. This was due to the large amount of waste that caused pollution and public health problems. SIMEPRODE started a bidding process in 2001 in which 13 companies competed. Grupo Gentor was founded together with the foundation of Grupo Monterrey. In 1992, in its energy division, Sistemas de Energía Internacional SA de CV (SEISA) and American Gentor Corporation (AGC) were created. The combination of both constitutes Bioeléctrica SA de CV contributing 53% of the initial capital (Pino, 2013).

It was agreed that while Bioeléctrica S.A. de C. V. would be in charge of technical aspects of the project as the operation and maintenance of the biogas plant, SIMEPRODE is the owner of the site of the landfill where the plant is located. The plant was inaugurated in 2013 with a capacity of 7.42 MW, with a private investment of 5.7 million dollars and a support of 5.1 million dollars by the World Bank. After another investment, its installed capacity increased to produce 17 nominal MW and 16 MW net, over the years the plant would obtain the ISO 9001 certificate as a quality management company (SEISA, 2017).

According to Pino (2013), from its opening until 2013, the company has avoided some 800 thousand tons of carbon dioxide and generated a total of 202 thousand 500 MW of electricity, which are used for lighting municipalities in the

metropolitan area, State Government Buildings, Water and Drainage Services of Monterrey, Paseo Santa Lucía, the public transport system and other government buildings. According to the CFE (2012) through the Institute of Electrical Research (IIE), the main benefit for the dependencies that use this energy is a saving of 10% in their electric billing.

B. Ylem Energy Limited

The project was created in the beginning to replace the waste dump of Cumbres by a sanitary landfill that complies with the current regulation of waste management. That landfill began to operate in the municipality of San Nicolás, Aguascalientes in 1998.During the first years in operation of the sanitary landfill of San Nicolás was registered the project of a plant of generation of biogas before the Mechanism of Clean Development (MDL), which arose with the signature of protocol Kyoto in 1997. Then the first approaches arose of the companies Biogas Technology and ENER-G Natural Power (now called YLEM ENERGY LIMITED) presenting projects in two stages: the first would consist of the method to decompose the CH4 molecule and obtain benefits through the sale of carbon bonds; The second stage would consist of electricity generation (CFE, 2012).

The agreement reached was that the municipality would be the owner of all the land, would be in charge of the works of closing the cells, handle leachate, provide coverage and daily maintenance. In turn the municipality of Aguascalientes would receive royalties from utilities obtained both from the sale of carbon credits and from the generation of energy. On the other hand, the companies Biogas Technology and the then, ENER-G Natural Power contributed 100% of the investment capital with a 20-year contract for the operation, maintenance, electricity production and gas rights.

In 2012, the electric power generating plant with an installed capacity of 2.7 MW came on stream. That same year a contract was signed between the Japanese automobile company Nissan and the City of Aguascalientes and the operating company YLEM ENERGY LIMITED in which Nissan acquired 100% of the electric energy generated by the waste processing plant, a contract that to date is still standing.

To date, this project is not only generating benefits for private companies, it also causes savings in the electric bill of its users at a very low environmental cost, obtaining until 2012 profits of 1.7 million dollars (CFE, 2012).

C. .Biogas of Juárez S. of C. V.

The sanitary landfill of Ciudad Juárez, Chihuahua was opened in 1994 which has a capacity of more than 10 million tons of urban solid waste. Biogas of Juarez S. of C. V. is a company whose capital is totally Mexican, specialized in the extraction, burning and use of biogas generated in the sanitary landfill of Ciudad Juárez.The project was carried out jointly with the Federal Electricity Commission, registering to the CDM and generating carbon credits that same year. The operations began in 2011 with a capacity of 4.5 MW, where its clients are mainly the self-sufficiency and the municipal public lighting of Ciudad Juárez and Nuevo Casas Grandes, both in the state of Chihuahua. This capacity makes it the second largest electric power plant based on municipal waste in the country, only after BENLESA in Nuevo Leon.

7. METHODS OF RESEARCH

In this research a qualitative method is presented based on the review of the existing literature in different countries, as well as the histories of the three companies mentioned in the previous section from the perspectives proposed in the tripod of Peng's strategy (2012) In order to explain and describe more fully this type of business.

8. RESULTS

It is analyzed the three companies mentioned above, taking into account the tripod of Peng's strategy (2012), so that there are three perspectives that help to see the fundamental aspects of electricity generating plants based on municipal waste.

A. Results from an industry-based view

To analyze the point of view based on the industry, the Porter diamond is used as a guide:

1) Degree of rivalry between competitors: from the three cases analyzed it is possible to notice that the industry mentioned in this research has a very low level of competition, where companies have a legal monopoly by being allied with public institutions of the municipalities where they are, therefore it is a market with low level of rivalry.

2) Threat of substitute products: this type of energy production is put aside from other sources of renewable energy or biomass, sometimes unfairly competing with each other.

Although in theory the different sources of renewable energy are substitutes for hydrocarbons and not substitutes for each other, in practice it is usually chosen from one type to another. It is because of this variety of energy production techniques that electric plants based on municipal waste have substitutes, however, other substitutes would not successfully end up with the problem of overproduction of garbage in the cities, so the existing potential in landfills would remain attractive.

3) Buyer negotiation power: One of the great advantages of the three companies reviewed is that, as part of municipal and state projects through public private partnerships, the partner on the public sector side is

usually the client, giving an enormous certainty to the business and reducing the risks that the investment entails when taking joint risks and long-term contracts. In the case of Ylem Energy Limited, the client is a large automotive company that has been committed through a long-term contract, this is also a mechanism to reduce the risk of investments.

4) Threat of entry of competitors: within the industry the threat of entry is practically null at the moment, this is because the operating companies won a bid and form a partnership between public and private capital that allows them to have management costs and disposal of very low resources that a privately owned company could never achieve.

5) Bargaining power of suppliers: the review allows to say that much of the technology used in the plants is imported or, as in the case of Biogás de Juárez, there is an alliance with a foreign company that has the patent of the technology. However, all the necessary technology is easily adaptable in Mexico.

The waste disposal is not a problem in this industry since the integration of the private sector with the public sector has internalized the collection and disposal of waste without extra costs, thus ensuring the constant flow of waste to be treated.

B. Results from a resource-based view

This analysis takes as reference the VRIO model detailed in the conceptual section of this document.

1) Valuable: As stated earlier, generators used by these types of companies are easily adaptable by any company that wants to compete in this sector. The truly valuable aspects of the companies focused on the transformation of biogas into electrical energy correspond precisely to the association between the know-how belonging to private companies and the infrastructure and systems of collection and separation with which the government has.

2) Rare: Public and private partnership is a rare resource because interested companies must compete in a public tender in which they must submit a technical proposal and an economic proposal that corresponds to the interests of the project. One of the interesting aspects is the type of customers this entails, since usually the customer is the same public sector or a large company (Nissan case in Aguascalientes), the electric power needs of these entities are usually high and constant. Being the supplier of these entities represents a rare and economically attractive intangible asset for energy companies.

3) Inimitable: the business model presented here is and should be inimitable in any other region that meets the necessary characteristics such as a composition of urban waste that facilitates the process, adequate facilities in landfills and adequate mechanisms of collection and separation of garbage.

4) Organization: the effect is greater when it is a large company that makes the investment. In the case of Bioeléctrica de Monterrey SA de CV has a company with great financial capacity and experience in other parts of Mexico, that together with the existence of a sanitary landfill certified in the municipality where it operates and with it an efficient collection and separation of waste, the companies of this sector have a good organization that is certified before the CDM as friendly companies with the environment and ISO-9001 that certifies them as quality management companies.

B. Results from Institution-based Vision

The role of formal institutions in the companies studied is preponderant since, to begin with, the project would hardly have started without some incentive by a global institution such as the World Bank or the signing of the Kyoto Protocol. Based on this incentive, the public institution prepares for a project for the use of municipal waste to generate electricity and launches a public call. Several companies that prepare their proposals respond to this call. The government entity chooses the winner of the tender and a contract is made.

In all the cases studied, the result is the creation of an association composed of private capital and public capital, the latter always in charge of facilitating the existing infrastructure and collection mechanisms, reducing operating costs and facilitating the operation. All the companies studied have negotiated with carbon credits and have benefited from monetary support from institutions that support environmental projects. It is because of this that the role of formal institutions in this type of business is crucial for economic and operational viability. On the other hand, the role of informal institutions, that is, the cultural component of society, is less preponderant than that of formal institutions, but its importance lies in the consumption and recycling habits of a society.

An important point for the optimal processing of urban waste is its composition, the food habits of the inhabitants will determine the type of waste that will have and thus the type of management that they should have. Another important point is the culture of recycling a society, the transformation of municipal waste is not opposed to recycling, on the contrary, helps the separation and efficient use of waste.

9. CONCLUSIONS AND RECOMMENDATIONS

One of the most important conclusions of this research is the importance of public sector involvement in this type of business and is that, by itself, the transformation of waste into electrical energy that can be a business with a high degree of

risk that begins to generate long-term gains. For this reason, a public-private partnership has been the most successful mechanism. State involvement allows to generate certainty and to provide free of charge waste and existing infrastructure.

Companies that want to enter need to adapt existing technology, as a state-of-the-art technology will improve waste performance making them cost-efficient. Companies have the option of partnering with other energy companies that have technology patents to be more efficient.

There are very few companies that use waste to transform it into electrical energy, which represents a great business opportunity because it is an unsaturated market in which intangible assets can be very valuable. Of course, public institutions must first work on maintaining adequate sanitary landfills for waste management and, secondly, the initiative to carry out projects and approaches in these areas.

In this way, it is concluded that there is a wasted opportunity that can generate profits for private companies, savings and profits for government institutions and an environmentally friendly solution to deal with the problem of municipal waste abundance.

REFERENCES

[1] Banco Mundial (2017). Consultado el 8 de mayo de 2017. Disponible en: http://datos.bancomundial.org/ indicador/EG.USE.COMM.FO.ZS?view=chart.

[2] Barney, J. Y; Griffin, R. (1992). The management of organizations: strategy, structure behavior. Houghton Mifflin Co. ISBN 0395574277, 9780395574270.

[3] Becerra, L. (2015). La producción de etanol en México: insumos, procesos y oxigenación de gasolina. Universidad Autónoma de Sinaloa, México. ISBN: 978-607-737-027-7.

[4] Bernache, G. (2003).The environmental impact of municipal waste management: The case of Guadalajara metro area. Resources, Conservation and Recycling vol. 39.doi:10.1016/S0921-3449 (03)00029-6.

[5] Brown, E.; Mann, M. (2008).Initial market assesment for small-scale biomass-based CHP.National Renewable Energy Laboratory. White paper NREL/TP-640-42046, January 2008.

[6] Bustos, C. (2009). La problemática de los desechos sólidos. Economía, núm. 27, enero-junio, Pp. 121-144. Universidad de los Andes. Venezuela. Disponible en: http://www.redalyc.org/articulo.oa?id=195614958006.

[7] Cerdá, E.; Caparrós, A.; Ovando, P. (2008). Bioenergía en la Unión Europea. Fundación de Estudios de Economía Aplicada. Colección de Estudios Económicos 26-08. Seríeeconomía del cambio climático.Cátedra Fedea-Iberdrola. ISSN 1988-785X.

[8] CFE (2012). Guía de usuario: Generación de electricidad mediante residuos de sólidos urbanos. Instituto de InvestigacionesEléctricas.México.

[9] Donald, M. (2007).Forest for energy and the role of planted trees. Critical reviews in plant sciences. Vol. 24. http://dx.doi.org/10.1080/07352680500316391.

[10] Favero, A.; Mendelsohn, R. (2014).Using markets for woody biomass energy to sequester carbon in forests.Journal of the Association of Environmental and Resource Economists.Vol. 1 No. 1/2.Pp 75-95. Disponible en: http://www.jstor.org/stable/10.1086/676033.

[11] Ferrer, Y. y Pérez, H. (2010). Los microorganismos en la digestión anaerobia y la producción de biogás, Consideraciones en la elección del inóculo para el mejoramiento de la calidad y el rendimiento. ICIDCA sobre los derivados de la caña de azúcar. Vol. 43 núm. 1, enero-abril. Cuba.

[12] Masera, O.; Coralli, F.; García, C.; Riegelhaupt, E.; Arias, T.; Vega, J.; Díaz, R.; Guerrero, G. y Cecotti, L.(2011) La bioenergía en México: situación actual y perspectivas. Cuaderno temático No. 4. Red Mexicana de Bioenergía.

[13] Massieu, Y. y Acuña, B. (2015) Biofuels: socio-environmental violence in rural Mexico. Latin american perspectives. Issue 204, Vol 42, No. 5.

[14] McCormick and Kautto (2013) TheBioeconomy in Europe: An Overview. International Institute for Industrial Environmental Economics (IIIEE), Lund University, PO Box 196, 22100 Lund, Sweden.Disponibleen: http://www.mdpi.com/2071-1050/5/6/2589/html. doi:10.3390/su5062589.

[15] Medina, M. (2010) Solid wastes, poverty and the environment in developing country cities: Challenges and opportunities. World Institute for Development Economics Research.Working paper No. 2010/23.ISBN 978-92-9230-258-0.

[16] Monreal, C. (2008). La utilización de los residuos agrícolas y otros desechos para la producción de bioenergía, biocombustibles y bioproductos. Eastern cereal and oilseed research center. Ottawa, Canadá.

[17] Morita, M. y Sasaki, K. (2012).Factors influencing the degradation of garbage in methanogenic bioreactors and impacts on biogas formation. Applied Microbiology and Biotechnology, vol. 94, no. 3.

[18] Nasir, I.; Ghazi, I.; Omar, R. (2012).Production of biogas from solid organic wastes through anaerobic digestion: a review. Applied Microbiology and Biotechnology, vol. 95, no. 2.

[19] NORTH, D. C. (1990) Institutions, Institutional Change and Economic Performance.Cambridge University Press, Cambridge (UK).

[20] Peng, M. (2012).Global business.Cengage Learning. ISBN 978-1111821753.

[21] Pino, F. (2013).Asociaciónpúblico-privada entre Bioeléctrica S. A. de C. V. y el gobierno del Estado de Nuevo León "Bioenergía de Nuevo León S. A. de C. V.". Tecnológico de Monterrey.

[22] PORTER, M.E. (1991). La Ventaja Competitiva de las Naciones. Plaza &JanésEditores, S.A, Barcelona.

[23] Rafati, L.; RahmaniBoldaji, M.; Khodadadi, M; et al (2016). Waste-to-energy: Challenges and opportunities in Iran. J Environ Health Sustain Dev. Vol. 1 Núm. 3. Irán.

[24] Razo, C.; Ludeña, C.; Saucedo, A.; Astete-Miller, S.; Hepp, J.; Vildósola, A. (2007). Producción de biomasaparabiocombustiblesliquidos: el potencial de América Latina y el Caribe. Unidad de DesarrolloAgrícola.CEPAL. Chile.

[25] Reilly, J. (2015). The feasibility, costs, and environmental implications of large-scale biomass energy. Energy Economics. Vol. 51. https://doi.org/10.1016/j.eneco.2015.06.016.

[26] Salinas, E. y Gasca, V. (2009). Los biocombustibles. El cotidiano. Núm. 157, septiembre-octubre. Universidad Autónoma Metropolitana. ISSN 0186-1840. Seisa (2017). Consultado el 6 de mayo de 2017. Disponible en: https://www.seisa.com.mx/en/about-us/our-history.

[27] Sims, R. (2006) Energy and fuelwood. Centre of Energy Research.Massey University. UK.

[28] Virani, T. (2011). The economic feasibility of bionergy production from Miscanthus for the Ontario Greenhouse industry. Tesis.University of Guelph.Canadá.

[29] Williams, M. (2011). Waste-to-energy success factors in Sweden and the United States: Analyzing the transferability of the Swedish waste-to-energy model to the United States. Disponible en: http://www.acore.org/wp-content/uploads/2012/04/WTE-in-Sweden-and-the-US-Matt-Williams.pdf.

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

Banking Reforms and Competition: A Comparative Study of Public and Private Banking Industry in India – A Literature Review

Dr. Renu Gupta

Assistant Professor, Commerce Department, SGGSCC, University of Delhi,
renuguptadu@gmail.com

Abstract: ***The present paper provides the literature review carried out to conduct a doctoral research on the topic "Banking Reforms and Competition: A Comparative Study of Public and Private Banking Industry in India" submitted to University of Delhi. The study was based on a sound theoretical framework known as modified S-C-P paradigm. Hence, survey of literature comprises distinct studies under various heads: liberalization of banking, public sector banks, contrast of public banks and private banks, privatization, competition in banking and S-C-P paradigm. Literature review highlighted the importance of carrying out one more study on banking reforms and competition in Indian domestic banks in the light of a sound theoretical framework as performance of Indian banks had been contrasted many times previously as well through various studies but most of them were lacking in terms of a sound theoretical framework that had been taken care of in the proposed study based on this literature review.***

Keywords: ***Banking Reforms, Competition in Indian Public and Private Sector Banks, Public Sector Banks, Privatization, S-C-P Paradigm.***

1. INTRODUCTION

Review of literature is done to determine the significance of the proposed study in relation to the extent studies that have already been made in the context of the issue under analysis. As the present review of literature had been conducted to facilitate a doctoral thesis title "Banking Reforms and Competition: A Comparative Study of Public and Private Banking Industry in India", various studies related to the topic have been compiled under distinctive heads. Thereby review of literature in this paper includes studies examining the impact of liberalisation or financial sector reforms on banking industry, Studies comparing performance of public sector banks and private sector banks in India, studies related to Public Sector Banks specifically and studies discussing the issue of privatisation. Furthermore, studies highlighting the measure of competition in banking and studies based on S-C-P paradigm have also been involved to serve the purpose. Moreover, an attempt has been made to arrange the studies in chronological order under each head separately to facilitate the objective of reviewing literature in better manner.

In this backdrop, the remaining paper is divided into seven Sections. Section II presents the studies related to impact of banking reforms. Studies comparing public banking and private banking industry in India have been discussed in Section III whereas Section IV produces studies confined to public sector banks in India only. Issue of privatisation is covered in Section V. Studies related to competition in banking are given in Section VI. Section VII expounds the studies based on Structure-Conduct-Performance (S-C-P) approach. Finally, Section VIII yields conclusion.

2. IMPACT OF BANKING REFORMS

Financial sector reforms in India are aimed at improving efficiency, productivity and profitability of banks via increased competitiveness. Hence, an attempt has been made to examine various views as regards to the impact of liberalisation of Indian economy including banking reforms on the performance of banking industry as a whole in India.

Raje (2000) argues regulatory reform alone cannot deliver results unless the banks are restructured simultaneously. Bhide, Prasad and Ghosh (2002) emphasise that the traditional face of banking is undergoing a change–from one of mere intermediator to one of provider of quick, cost-effective, efficient and consumer-centric services. Ataullah et al. (2004) stated that overall technical efficiency of the banking industry of India and Pakistan showed progress as a result of the financial liberalisation. Mohan (2005) examined the performance of various segments of Indian financial sector in phase of financial reforms and found improvement in efficiency, competitiveness and health of all the segments including banking segment. Though, decline in the share of priority sector lending is noticed.

Mixed results have been noticed in terms of the impact of financial reforms on Indian banking industry. For example,

Kumbhakar and Sarkar (2003) concluded that a significant TFP growth has not been observed in Indian banking sector during the deregulatory phase. Moreover, public sector banks have not responded well to the deregulatory measures. Galagedera and Edirisuriya (2005) concluded that reforms have brought no significant growth in the productivity of Indian banks. Sensarma (2005) pointed out that profit efficiency of Indian banks has displayed a declining trend during the period of deregulation.

Das and Ghosh (2006) suggested that the period after deregulation did not witness any significant increase in number of efficient banks and some banks have high degree of inefficiency during the period of reforms. However, Sensarma (2006) claimed that deregulation in Indian banking industry (particularly public sector banks) attained the goal of reduction in intermediation costs and improving TFP. Dobson (2006) concludes that India's financial system has all the moving parts required to become a modern financial system, but it continues to be held back by the inertia of state ownership and past regulatory and social practices.

3. COMPARING PUBLIC AND PRIVATE BANKING INDUSTRY

This Section highlights the research work already done in the direction of comparing performance of public and private banking industry in India:

Bhattacharyya and Kumbhakar (1997) examined the impact of the limited liberalisation started before the deregulation of the 1990s on the performance of different categories of banks, using data envelopment analysis. This study covered 70 banks in the period ranging 1986 to 1991. They formed one grand frontier for the total period and measured the technical efficiency of the banks. It was found that public sector banks had the highest efficiency among the three categories, with foreign and private banks having much lower efficiencies. Though, public sector banks started showing a decline in efficiency after 1987, private banks showed no change and foreign banks showed a sharp rise in efficiency. The main results were that in the nationalised era, public sector banks were successful in achieving deposit and loan expansion. Sarker and Das (1997) compare performance of public, private and foreign banks for 1994-95 by using profitability, productivity and financial management measures. They find public sector banks performing poorly in comparison of other two categories. Sathye (2001) evaluated the relative efficiency of Indian banks in the late 1990's and contrasted the efficiency of Indian banks with that of the banks in other countries. He found that the public sector banks have a higher mean efficiency score as compared to the private sector banks in India, but found mixed results when compared public sector banks and foreign commercial banks in India.

Ram Mohan and Ray (2004) attempted a comparison of performance among three categories of banks: public, private and foreign using physical quantities of outputs and comparing revenue maximization efficiency of banks during 1992-2000. They find that public sector banks performed significantly better than private sector banks but no differently from foreign banks on this measure. The superior performance of public sector banks is to be ascribed to higher technical efficiency rather than higher allocative efficiency. Arunkumar and Kotreshwar (2006) attempted to examine the performance of Indian public and private sector banks in terms of credit risk management in post liberalisation scenario. For the purpose, analysis of trend in non-performing assets, trend in credit risk portfolio diversification, relationship between diversified portfolio and NPAs, profiling of concentration risk, impact of New Basel Accord Norms and risk based supervision on credit risk management practices of Indian commercial banks (public vs. private) has been made with the help of primary and secondary information. The findings are as follows:

a) While NPAs level of public sector banks did register a clear decreasing trend during the post-liberalization period, NPAs level of private sector banks remained constant during this period.

b) The concentration risk profile of private sector banks is found to be higher than that of public sector banks.

c) In case of public sector banks, there exists a strong relationship between NPAs level and credit portfolio diversification as vindicated by higher co-efficient of correlation values. The decrease in NPAs level is caused by reduction in concentration risk. This relationship is however, not clearly pronounced in case of private sector banks.

d) Credit risk management performance of commercial banks in India is not satisfactory.

e) There exists no marked difference between public sector banks and private sector banks as regards their credit risk management performance.

Thus, the study is based on" a bank success lies in its ability to assume and aggregate risk within tolerable and manageable limits." Dash and Charles (2008) investigated the technical efficiency of Indian banks, distinguished on the basis of ownership criterion. the Data envelopment analysis (DEA) model was used with five input variables (borrowings, deposits, fixed assets, net worth, and operating expenses) and four output variables (advances & loans, investments, net interest income, and non-interest income), and the efficiency scores were calculated for a sample of forty-nine major banks operating in India. The foreign banks were found to be slightly more efficient than public and private banks, and that there was not much of a difference in the efficiency of public and private banks. Still, significant difference is observed in terms of under

utilisation of inputs and under production of output. As net worth was found to be under-productive for efficient private and foreign banks, while it was properly utilized by public banks. Thus, profitability of private and foreign banks is expected to be lower than that of public banks, particularly in terms of return on net worth. Elango and Gudep (2008) carried out an analysis to examine the level of awareness among customers and to identify the best banking sector which provides qualitative service. It has been observed that the foreign and the new generation private sector banks are serving the customers better. Hence the paper suggests that the public sector commercial banks should make efforts to revamp their approach towards customers, so as to perform better and derive competitive advantage in the long run.

Thereby, number of studies have been made contrasting PSBs and private banks using different techniques but a sound theoretical framework is found to be missing in almost all of them.

4. PUBLIC SECTOR BANKS IN INDIA

Jagirdar (1996) observed that the average return on assets (ROA) of the Public Sector Banks (PSBs) in the second half of the 1980s was only about 0.15 percent which was abysmally low by all standards. Further, in 1992/93, non-performing assets (NPAs) of 27 PSBs amounted to 24 percent of total credit, only 15 PSBs achieved a net profit, and half of the PSBs faced negative net worth (Shirai, 2002). Thus, it becomes important to judge the various views prevailing as regards to the PSBs as they form the core of the banking system in India.

Das (1997) attempted to analyse overall efficiency (technical, allocative and scale) of PSBs. During 1990 to 1996. The study found a decrease in overall efficiency. This happened because there was a decline in technical efficiency, both pure and scale, which was not compensated by an increase in allocative efficiency. It was noted by the study that the decline in technical efficiency was mainly because of four nationalised banks. However, Bhattacharyya et al. (1997b) reported a positive impact of deregulation on the TFP growth of Indian public sector banks. Das (1999) contrasts performance among public sector banks for three years in the post-reform period: 1992, 1995 and 1998. He finds a certain convergence in performance. He also states that while there is a welcome increase in emphasis on non-interest income, banks have tended to show risk-averse behaviour by opting for risk-free investments over risky loans.

Das (2002) seeks to examine the interrelationships among risk, capital and productivity change of the public sector banks in India. The analysis reveals that capital adequacy has a negative and significant effect on asset quality when the PSBs are considered in totality. Secondly, it is observed that non-performing assets (NPAs) play a major role in influencing capital levels for the small banks as also for the PSBs as a whole, reiterating the mutually reinforcing relation between credit risk and financial leverage. Thirdly, as regards productivity change, it is observed that depending upon whether the objective of productivity is growth or growth with stability considerations, capital and NPAs remain crucial factors in influencing productivity. Finally, regulatory pressure, both with regard to capital and NPAs play a significant role in influencing the capital adequacy and asset quality of PSBs. Rajaraman and Vasishtha (2002) perform a panel regression on non-performing loans of the 27 public sector banks for a five-year period ending in 1999-2000. The exercise groups banks with higher than average NPAs into those explained by poor operating efficiency, and those where the operating indicator does not suffice to explain the high level of NPAs, and leaves an unexplained intercept shift. Two of the three weak banks identified by the Varma Committee, Indian Bank and United Bank of India, fall in this category. The paper concludes that recapitalisation of these banks with operational restructuring may therefore not be the solution, since there is clearly a residual problem even after controlling for operating efficiency.

Tripathy (2006) makes an attempt to analyze the factors that are essential in influencing the investment decision of the customers of the public sector banks. For this purpose, Factor Analysis, multivariate technique, has been used to identify the groups of determinants. Secondly, this study also suggests some measures to formulate marketing strategies to lure customers towards banks. Ram Mohan (2007) states that the public sector banks have shown a remarkable transformation in the post-reform period. Profitability is comparable to international banks, efficiency and stability have improved and there is a convergence between PSBs and private banks. But the PSBs will be severely tested as disintermediation proceeds apace on both the asset and liability sides.

Their survival depends on their ability to rise to the challenges ahead. Kumar and Gulati (2010) analysed the trends of cost efficiency and its components across Indian public sector banks (PSBs) during the post-deregulation period spanning from 1992/93 to 2007/08. The study also examines the issue of convergence in cost, technical and allocative efficiencies levels of Indian PSBs. The empirical results indicate that deregulation has had a positive impact on the cost efficiency levels of Indian public sector banking industry over the period of study. Further, technical efficiency of Indian public sector banking industry followed an upward trend, while allocative efficiency followed a path of deceleration. They note that, in Indian public sector banking industry, the cost inefficiency is mainly driven by technical inefficiency rather than allocative inefficiency. The convergence analysis reveals that the inefficient PSBs are not only catching-up but also moving ahead than the efficient ones, that is, the banks with low level of cost efficiency at the beginning of the period are growing more rapidly than the highly cost efficient banks.

In sum, the study confirms a strong presence of convergence in cost efficiency levels of Indian public sector banking industry.

5. PRIVATISATION OF BANKING

There is a discord amongst economists and researchers on the issue of privatisation of Indian Banking. Hence, distinctive views, either in favour or in against privatisation have been presented in this Section.

Sarkar et al (1998)[1] suggest with the help of their findings that a move towards privatization in developing countries should be accompanied by concerted efforts to strengthen the appropriate markets and institutions that create the necessary incentives for private firms. Under such circumstances, privatization is likely to be an effective policy for improving the performance of ailing public-sector enterprises in emerging economies like India. Ram Mohan (2001) had criticised the new Banking Bill based on bank privatisation on two grounds: (a) Privatisation led by disinvestment of the Government shareholding and compelling them to migrate to stock market when their share prices were already low would be of no help and (ii) Letting foreign banks to acquire PSBs was also not a good solution as they would not be able to take care of every section of the economy.

Mathur (2002) claims that arguments in favour of privatisation of PSBs are: (i) based on perceptions but not factual analysis, (ii) use of partial information and (iii) evidence on international experience which is not unambiguous. He notes that broadly, four main arguments are made by the proponents of privatisation of PSBs in India: (a) frequent re-capitalisation of state owned banks is a huge burden on the government budget; (b) state ownership of banks reduces competition and thus breeds inefficiency; (c) there is no evidence that state ownership lowers the probability of banking crisis; and (d) private and foreign banks stimulate efficiency, innovation and economic growth.

But with the help of sound reasoning and bringing full facts and figures into consideration, he is able to disclaim the aforesaid arguments. He concluded that the case for privatisation of PSBs in India is not strong enough. As he claims that it is not necessarily the case that wherever the banking segment is private sector dominated the probability of a banking crisis is lower. It needs to be recognised that private sector banking would have larger probability of crisis if the supporting legal and regulatory framework were not sound enough to insulate the systems from the adversaries of extraneous pressures. Therefore, he is of the opinion that it may be safer to maintain the public sector character of the banks till the conditions for privatisation are conducive enough for the same. The conditions precedent would include swift and smooth legal system, strong regulatory framework, reduced fiscal deficit, and a sharp reduction in controls on flow of foreign capital.

Singh (2002) criticises the aforesaid arguments of Mathur (2002). As Singh is of the opinion that Public Sector banks are not the only means to take care of the priority sector and tax and excise duties are the direct alternatives available in the hands of the Government for this purpose. In the name of priority sector lending, PSBs whose bank managements are weak and corrupt are giving rise to the problem of moral hazard. Further, he disclaims the argument of Mathur that economies with private sector banks faced bank crisis as with the help of the literature available, he is able to state that there was no clear relationship found in economies having private sector banks and bank crisis. Similarly, Singh also contradicts the idea of Mathur that instead of recapitalising PSBs by exchanging fresh bank equity with GOI securities, PSBs should have been allowed to raise funds from the capital market and they could have been given loans instead of investing in government securities. As he states that loans would have been risky for banks and there was a fear that equity could have been sold by banks at substantially lower price.

Finally, he concludes the discussion with a note that PSBs did well only in face of competition. Still, competition is not sufficient for them and hence, further privatisation is indeed needed. Supporting the views of Ram Mohan (2001) and Mathur (2002) that a more effective and appropriate regulatory regime needs to be put in place for privatisation to be useful. However, he cautions that there can be differences in the opinion what ideally constitute an effective and appropriate regulatory regime. There is a need for pragmatic approach. We may even need to rely on trial and error to some extent.

According to Ram Mohan (2011), it would have been advisable for the RBI to spell out the principal objective in licensing new banks. Is the principal objective greater competition or is it financial inclusion? If it is competition, then it would be alright to subject the new banks to the same branch licensing norms as the existing ones; if it is inclusion then they must be told to focus to a greater extent on unbanked centres. Unfortunately, the RBI has not thought it necessary to make the case for new entrants.

6. COMPETITION IN INDIAN BANKING

Commercial banks, especially the dominant public sector banks, have been exposed to competition from the new banks set up in the private sector with the latest technology. This has created a need for the public sector banks to improve their business efficiency and volume, which is a good sign of competitive effectiveness. Induced stiff competition in the banking sector certainly raises some issues relating to the functioning of domestic banks. Moreover, element of competition can be found not only in different banking segments, that is, SBI group, PSBs, old private banks, new private banks and foreign banks but also in the various banks within the one banking segment. This Section involves some studies especially designed to measure competition either amongst different

[1] *Findings of Sarkar et al are already given in this Chapter under heading "Comparing Public and Private Banking".*

banking segments or different banks within one individual banking segment. The objective is to highlight how techniques of measuring competition are varying in different studies.

Vyas and Dhade (2007) conducted a study mainly focusing on the State Bank of India (SBI), the premier bank in the Indian banking sector, as to what extent it has been affected by the entry of new private sector banks. The study applies the t-test for finding the significant difference in the performance of SBI before and after the entry of private sector banks, with the help of financial ratios selected as the parameters for ascertaining the changes in the business of SBI. The results indicate that the presence of new private sector banks does not pose any threat to SBI at the moment; however, the same cannot be said in the future. Prasad and Ghosh (2005) Using annual data on scheduled commercial banks for the period 1996–2004, evaluated the validity of the claim that competition in the Indian banking sector has increased since the inception of the financial sector reforms in 1992. The empirical evidence reveals that the Indian banking system operates under competitive conditions and earns revenues as if under monopolistic competition.

Most of the studies conducted in India examining Banking sector are very short focused. As some of them are limited in their scope comparing performance of PSBs and private banks in terms of financial indicators only while others ended evaluating the performances of the two banking segments on the basis of production function or frontier analysis or so forth and lacked a theoretical framework without which any study remains incomplete. Moreover, almost all the studies failed to measure competition between the two banking segments: public and private. This gap has been filled by Murthy and Deb (2008a) by providing a theoretical framework of competition that can be applied to banking also. Discussing the evolution of competition, it provides a methodology to arrive at a market form in banking industry through an analysis of all the aspects of basic conditions, structure, conduct and performance using modified S-C-P paradigm. This paper argues that sustained growth and dynamics of industry is not price led. Growth arises out of changing basic conditions and dynamics arises out of sharing the new market created by basic conditions. The prime mover of competition is rivalry among firms to control market share to internalize externalities rather than adjustments brought about the price mechanism.

Murthy and Deb (2008b) used modified Structure-Conduct-Performance (S-C-P) approach to analyse competition in private banking industry of India. The study suggests that sources that finance growth should be competitive. While there does not exist much possibility of competition for institutions providing finance for public investment, competition can occur among banks, which are conduit of monetary policy. It then provides the theoretical background of an alternative mechanism based on structure-conduct-performance paradigm, which apart from including traditional elements of S-C-P paradigm, entry, economy of scale, product differentiation and price cost margin, also incorporates basic conditions and strategic groups to analyse the process of market dynamics in the industry. The paper goes on to argue that competition goes beyond "conduct" and encompasses all the four elements of S-C-P paradigm: basic conditions, structure, conduct and performance. Accordingly, a three equation model simultaneous equation model is developed to ultimately estimate the equation of competition through Tobit technique.

The results indicate that variables related to basic conditions, structure, conduct and performance influence competition. The study has found evidence against the simplistic relationship between concentration and competition which remained implicit in the literature. The study also developed a methodology to arrive a market form from an analysis of all the three aspects of a market and concludes that private banking industry in India is characterised by monopolistic competition.

Murthy and Deb (2008c) critically examined the contention of treating the impact of entry on concentration and market structure mechanically and considering fall in concentration as a cause of competition. This paper is first of its kind to identify a distinct pattern of change in the concentration ratio and explain its determinants in terms of a cubic form equation.

Thus, a very few studies have been noticed measuring competition in Indian banking using S-C-P paradigm.

7. STRUCTURE-CONDUCT-PERFORMANCE (S-C-P) PARADIGM

An attempt has been made to compile various studies pertaining S-C-P paradigm in the present Section as the proposed study is based upon the theoretical framework of Modified S-C-P approach developed by Murthy and Deb (2008).

Heggestad and Rhoades (1976) undertook a study to test the market structure-stability relationship in commercial banking. Using measures of firm mobility and turnover between 1966 and 1972, an analysis based on 228 markets and over 2,000 firms was conducted to determine whether elements of market structure have a systematic influence on stability. Weiss (1979) discussed the relevance of the structure-conduct- performance approach to antitrust and demonstrate its practical utility in analyzing an important case. While Harris (1988) attempted to distinguish the two competing hypotheses in S-C-P theory, namely, efficient structure and market power.

Hannan (1991) employs an explicit model of a banking firm to estimate the relationship between market structure and various aspects of bank conduct and performance as implied by the structure-conduct-performance (S-C-P) paradigm and thereby assess the most commonly tested relationships in this large literature. Shaffer (1994) extends previous analysis of weaknesses of the structure-conduct-performance paradigm and of the price-cost margin as a measure of performance. Otten and

Schweitzer (2002) analysed the development and performance of the European mutual fund industry and compare it with the industry in the United States, using the traditional S-C-P paradigm.

Neuberger Doris (1997) reviews the industrial organization research in (commercial) banking within the revised structure-conduct-performance paradigm. Neuberger (1998) is of the opinion that empirical research about structure, conduct and performance in banking markets has developed mostly independently from the microeconomic theory of banking. Delorme et al. (2002) used a simultaneous equations framework to study the relationship between structure, conduct and performance in US manufacturing in the 1980s and 1990s. Moreover, Laderman (2006) empirically tests for the presence of countervailing effects of increases in market concentration on small business loan volume. Pawlowska (2007) explains the role of market structure on profitability in the Polish manufacturing firms based on panel data static analysis. Yusupova (2009) deals with industrial markets in Russian economy. Srinivas and Kumar (2010) conceptualised a theoretical model Based on Bain's work for the S-C-P paradigm.

Such a vast literature on S-C-P paradigm is still awaited in context of our own country.

8. CONCLUSION

There is no dearth of literature and myriad of studies are available not only evaluating impact of banking reforms but also making comparisons between public and private banking industry in India including foreign banks and measuring competition. Moreover, S-C-P paradigm has also been used in some studies in India and abroad especially in context of banking but a very few studies are found using S-C-P in relation to Indian banking industry. Hence, the present literature review highlights the importance of carrying out a study on analyzing the impact of banking reforms on Indian domestic banks in the light of a sound theoretical framework such as Structure-Conduct-Performance (S-C-P) paradigm. Thereby, the doctoral research conducted on the basis of this literature surveys makes an attempt to fill the gap between extant literature and need of the hour.

REFERENCES

[1] Arunku mar Rekha and G. Kotreshwar (2006). "Risk Management in Indian Commercial Banks (A Case Study of Public and Private Sector Banks)":http://papers.ssrn.com/sol3/papers.cfm?abstract_id=877812.

[2] Ataullah, A., T. Cockerill and H. Le (2004). "Financial liberalization and bank efficiency: a comparative analysis of India and Pakistan", *Applied Economics*, 36, 1915-1924.

[3] Bhattacharya, A., and S. C. Kumbhakar (1997). "Changes in Economic Regime and Productivity and Growth: A Study of Indian Public Sector Banks", *Journal of Comparative Economics*, 25(2), 196-219.

[4] Bhattacharyya, A., and S.C. Kumbhakar (1997b). "Changes in economic regime and productivity growth: a study of Indian public sector banks" *Journal of Comparative Economics*, 25, 196-219.

[5] Bhide, MG, A Prasad and Saibal Ghosh (2002). "Banking Sector Reforms: A Critical Review", *Economic and Political Weekly*, 37(5), February 2-8, 399-408.

[6] Das Abhiman (2002). "Risk and Productivity Change of Public Sector Banks" *Economic and Political Weekly*, 37(5), February 2-8, 437-448.

[7] Das, A., and S. Ghosh (2006)."Financial deregulation and efficiency: an empirical analysis of Indian banks during post-reforms period", *Review of Financial Economics*, 15, 193-221.

[8] Das, Abhiman (1997). "Technical, Allocative and Scale Efficiency of Public Sector Banks in India" *RBI Occasional Papers*, June-September: 18.

[9] Das, Abhiman (1999). "Profitability of Public Sector Banks: A Decomposition Model" *Reserve Bank of India Occasional Papers,* 20, 1.

[10] Dash, Mihir and Christapel Charles (2008). "A Study of Technical Efficiency of Commercial Banks in India":http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1417376.

[11] Delorme Jr, D. Charles, David R Kamerschen, Peter G. Klein and Lisa Ford Voeks (2002). "Structure, conduct and performance: a simultaneous equations approach", *Applied Economics*, 34(17), 2135-2141.

[12] Dobson Wendi (2006). "Financial Reforms in China and India: A Comparative Analysis":http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1313319.

[13] Elango Rengasamy and Vijaya Kumar Gudep (2008). "A Comparative Study on the Service Quality and Customer Satisfaction among Public, Private and Foreign Banks":http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1090105.

[14] Galagedera, D.U.A., and P. Edirisuriya, (2005). "Performance of Indian commercial banks (1995-2002)" *South Asian Journal of Management*, 12, 52-74.

[15] Gupta Renu (2016), "Banking Reforms and Competition: Structure Conduct and Performance", Regal Publications, New Delhi.

[16] Hannan, T. J. (1991). "Bank Profitability and the Threat of Entry*", Journal of Bank Research*, Summer, 157–163.

[17] Harris F. (1988). "Testable Competing Hypothesis from Structure-Performance Theory: Efficient Structure vs. Market Power", *The Journal of Industrial Economics*, 36 (3), March, 267-280.

[18] Heggestad, Arnold A. and Stephen A. Rhoades (1976). "Concentration and Firm Stability in Commercial Banking", *The Review of Economics and Statistics*, 58(4), Nov., 443-452.

[19] Jagirdar B. (1996). "Capital adequacy: some issues", *Economic and Political Weekly*, 31(12), 731-739.

[20] Kumar, S. and R. Gulati (2010). "Dynamics of Cost Efficiency in Indian Public Sector Banks: A Post-Deregulation

Experience":http://www.igidr.ac.in/~money/ Dynamics%20of%20cost%20efficiency_sunil%20kumar.pdf.s

[21] Kumbhakar, S. C. and S. Sarkar (2003).*"Deregulation*, Ownership, and Productivity Growth in the Banking Industry: Evidence from India" *Journal of Money, Credit and Banking*, State University Press, Ohio, 35(3), 403-424.

[22] Laderman, Elizabeth (2006). "Market Power and Relationship in Small Business Lending":http://ssrn.com/abstract=1007867.

[23] Mathur, KBL (2002). "Public Sector Banks in India: Should They be Privatised?"*Economic and Political Weekly*, 37(23), June8-14, 2245-2256.

[24] Mohan, R. (2005). "Financial Sector Reforms in India: Policies and Performance Analysis", *Economic and Political Weekly*, 40(12), March 19-25, 1106-1121.

[25] Murthy KV. B. and Ashis Taru Deb (2008a)."Theoretical Framework of Competition as Applied to Banking Industry", *MRPA Working Paper*: http://mpra.ub.uni-muenchen.de/id/eprint/7465.

[26] Murthy K.V. B. and Ashis Taru Deb (2008b). "Operationalising and Measuring Competition: Determinants of Competition in Private Banking Industry in India": http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1073682.

[27] Murthy K.V. B. and Ashis Taru Deb (2008c)."The Determinants and Trends of Dynamics of Market Concentration*: The Case of Deregulating Private Banking Industry in India"*: http://papers.ssrn.com/sol3/papers.cfm?abstract_id= 1303418.

[28] Neuberger, Doris (1997). "Structure, Conduct and Performance in Banking Markets1" *Thünen-Series of Applied EconomicTheory*, *Working Paper No. 12*, University Rostock.

[29] Neuberger, Doris (1998). "Industrial Organisation of Banking: A Review" *International Journal of the Economics of Business*, 5(1): http://ssrn.com/abstract=1012902.

[30] Otten, Rogér and Mark Schweitzer (2002). "A Comparison Between the European and the U.S. Mutual Fund Industry":http://papers.ssrn.com/sol3/papers.cfm? abstract_id=164108.

[31] Pawlowska, Magorzata (2007). "Profitability versus Market Structure – Application of SCP Model on the Panel Data", *Bank i Kredyt, No.4*, National Bank of Poland, 39-53: http://ssrn.com/abstract=1011698.

[32] Prasad A. and Saibal Ghosh (2005)."Competition in Indian Banking": http://papers.ssrn.com/sol3/papers.cfm?abstract_id=888010.

[33] Rajaraman, Indira and Garima Vasishtha (2002)."Non-Performing Loans of PSU Banks", *Economic and Political Weekly*, 37(5), February 2-8, 429-436.

[34] Ram Mohan, T.T. (2001). "Setting the Stage for Bank Privatisation", *Economic and Political Weekly*, 36(4), 265-267.

[35] Ram Mohan, T.T. (2007). "Banking Reforms in India: Charting a Unique Course", *Economic and Political Weekly*, 42(12), March 19.

[36] Ram Mohan, T.T. (2011). "New Banks: Don't Say 'Yes' If You Want to Say 'No'", *Economic and Political Weekly*, 46(37), Sep 10-Sep 16.

[37] Ram Mohan, T.T. and Subhas C Ray (2004). "Comparing Performance of Public and Private Sector Banks: A Revenue Maximisation Efficiency Approach", *Economic and Political Weakly*, 39(12), March 20-26, 1271-1272+1274-1276.

[38] Sarkar, Jayati, and Pradeep Agrawal (1997). "Banking: The Challenges of Deregulation", In Kirit S. Parikh, (Ed.), *India Development Report 1997*, Chap. 11, 193–218. New Delhi/New York: Oxford Univ. Press, 1997.

[39] Sathye, M. (2001).*Efficiency of Banks in a Developing Economy: The Case of India*.University of Canberra, Australia.

[40] Sensarma, R. (2005). "Cost and profit efficiency of Indian banks during 1986-2003: a stochastic frontier analysis", *Economic and Political Weekly*, 40(12), March, 1198-1208.

[41] Sensarma, R. (2006). "Are foreign banks always the best? Comparison of state-owned, private and foreign banks in India", *Economic Modelling*, 23, 717-735.

[42] Shaffer, Sherrill (1994). "Structure, Conduct, Performance, and Welfare", *Review of Industrial Organization,* 9, 435-450.

[43] Shirai, S. (2002)."Road from state to market-assessing the gradual approach to banking sector reforms in India", *ADB Institute Research Paper Series No.32*, Asian Development Bank Institute, Tokyo.

[44] Singh, Gurbachan (2002), "Privatisation of Public Sector Banks", *Economic and Political Weekly*, 37(32), August 10.

[45] Tripathy, Nalini Prava (2006). "A Service Quality Model for Customers on Public Sector Banks", *The ICFAI Journal of Bank Management*, 5(2), 77-82.

[46] Vyas, Ramkrishna and Aruna Dhade (2007). "A Study on the Impact of New Private Sector Banks on State Bank of India", *The ICFAI Journal of Bank Management*, 6(3), 61-76.

[47] Weiss, Leonard W., (1979). "The Structure-Conduct-Performance Paradigm and Antitrust", *University of Pennsylvania Law Review*, 127(4), April, 1104-1140.

[48] Yusupova, Almira (2009). "Development of Industrial Markets in Russian Economy: Empirical Research":http://ssrn.com/abstract=1518306.

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

Ethical Framework of the Accounting Control System – A Literature Review

Roopa Dass

PhD Scholar, Department of Commerce, Delhi School of Economics, University of Delhi
Assistant Professor, Department of Commerce, Bharati College
roopa.johri@gmail.com

Abstract: ***It is important to understand that present ethical framework is drawn from the corporate governance framework which is based on compliance of laws and rules. It is not directly linked to values, ethics, and moral standards. Businesses are owned by owners/ investors and run by managers.As there is conflict between ownership and control therefore, corporate governance problem arises. There is an ethical breach not only on the part of the managers but also of the owners. With this background, this paper seeks to review the available literature to understand the concept of ethics, morality and business ethics in correct perspective. It further studies relevant areas such as ethics and morality of managers, their role in ethical leadership, organizational and individual ethics, ethics in accounting and finance and new perspective in business ethics.***

Keywords: Ethical Framework, Corporate Governance, Business Ethics, Morality, Organizational and Individual Ethics.

1. INTRODUCTION

First of all ethical framework needs to be understood in correct perspective. Extensive study is done to understand the concept of ethics and morality. We are studying business ethics within the ambit of applied ethics. To understand this ethical framework, we need to first explain the nature of study of business and the nature of ethics. This study focuses on the perceptions of managers in general and perceptions of stakeholders of accounting system in particular as they are responsible for ethical or unethical practices. We would like to know how important is it for company that it's accounting and reporting is done by those who adhere to ethical standards. The users of this information are not only stockholders but also the creditors, suppliers, customers and government etc. So the accounting system caters to not only the shareholders but also to all other stakeholders because organizations use resources of the society. This calls for review of literature regarding the perceptions of those responsible for direction and control of the company.

It will be of interest to study the findings in the field of creative accounting. Preparers of financial statements are in a position to manipulate the view of economic reality presented in those statements to interested parties. Indian case of Satyam can be studied regarding creative accounting phenomenon.

There is difference between individual ethics and organizational ethics. We also need to explore the study that throws light on new perspective of business ethics as distinguished from personal ethics.

2. OBJECTIVES OF THE REVIEW/STUDY

(1) To review the studies done in the area of ethics and morality so as to understand, measure and know the factors influencing the perception of manager's ethical behavior.

(2) To review the studies related to individual and organizational ethics.

(3) To study work related to code of ethics, their importance, effectiveness and communication.

(4) To study the work done in the area of ethics in accounting and finance.

(5) To review the new perspective of business ethics and corporate responsibility.

3. LITERATURE REVIEW: TRADITIONAL VIEW

Traditional approach starts from a perspective where ethics has been equated to individual ethics. Early authors have restricted their studies to this area whereas new perspective is path breaking study which views it more as corporate responsibility.

3.1 Ethics and Morality

Solomon (2003) maintained in his work that sound ethics is necessary for long term survival of the firm. His twenty years' experience of consultancy led him to conclude that people face situations where it is difficult to make choices. He used

"Aristotelian approach" to explain his ideas. According to him "corporations like an individual is embedded in society" and corporate values such as "honesty and fairness" must be translated into action. Today's national and international business world must work in tandem by sharing values and having mutual trust; otherwise they are not going to stay together for long. He argues that profit and ethics must go hand in hand which will lead the organization onto the path of success. Solomon both examines the ways in which inadequate values actually destroy businesses, and exposes the false beliefs that encourage unethical business practices. Solomon's handbook is full of list of virtues which may help small managers and struggling executives facing dilemmas of ethics.

Posner (2010) asserted in "three decade's perspective of values of American Managers" that values is important in organizational life, and its impact has increasingly been recognized over the decades. Some claim that "values have become one of today's most commonly referred term" (Argandona, 2003, p. 15). Others have supported the view that as we try to understand the value system of managers, we tend to understand their beliefs, attitudes, and behaviors. While modeled more than three decades ago, the assertion of Schemidt and Posner (1984) that the direction and vigor of corporate American managers cannot be fully understood without trying to understand more about the values and convictions of the members, seems equally relevant today. The managers believed that it was important for them to understand the values of members properly to get the commitment from other members of organization. He also argued that values can't be seen; rather it is manifested in opinions, attitudes, desires and preferences. He found that at a personal level, most of the managers believed that their values were clearer than those were five years ago. Fifty-four percent of all managers were of the view that more time should be spent on examining personal values. He found that 65% believed that there is need to pay more attention to values in managing businesses.

3.1.1 Manager's Perception of Ethics and their Influence

Numerous studies have been conducted that describe how employees perceive their work environment. The work environment that surrounds an employee is influenced by the value system imbibed by the members of organization.

Rich (1990), asked financial accountants about their work environments. He found that respondents felt pressure to achieve targeted net income and return on investment. It was a survey conducted on 326 managerial accountants and 264 people who were working as controllers to ascertain the prevalence of corporate codes of conduct. The objective was to see the effect of formal codes of conduct on ethical behavior as a result of following the recommendations of the Treadway Commission. Many respondents to the survey expressed that they were under pressure to achieve a targeted net income and return on investment (ROI). It was quite surprising that the pressure to achieve a targeted net income and ROI was higher in firms with formal codes of conduct than in those firms without formal codes.

Posner and Schmidt (1987), sought to investigate various issues with 1498 managers in America in three decades, for example, "how ethical they felt their organizations were and whether their personal principles must be compromised for the organization's sake." In addition, their decision criteria for two scenarios involving ethical implications were articulated. He suggested that the distinction between personal and organizational values becomes minimal not only as one advances higher up the organizational ladder, but also the longer one is employed by an organization. Posner and Schmidt (1987) found that managers employed by an organization for at least ten years, as well as senior managers, were less tolerant of fraudulent practices.

Harris (1990) examined the ethical values of managers at different level of the organization. He also explored how gender, education and years of experience had effect on managers' values, their perceptions of work environment and professional associations influence their personal values. Results indicated that hierarchical level influence their individual ethical values. While respondents, as a whole, had mixed feeling regarding perception of the organization's and professional associations' influence on their values, sales/ service persons were under pressure to change their values in order to achieve company goals. It was found that top managers were less tolerant of fraudulent behaviors than other levels of managers within the organization because they have to deal with these types of ethical dilemmas.

D'aquila (2001) did not reveal notable correlation between perceptions of management's ethical standards and job tenure whereas Harris (1990) and Kelley et al. (1990) both indicated a relationship between the two. Harris found that managers having job tenure for at least ten years were tolerant of fraudulent, but not of coercive practices. Employees in large organizations are expected to pay attention to ethical issues when dealing with others. They take note of the fact when management compromises ethical standards to achieve short term business goal but are not likely to report. This finding is consistent with COSO's (1999) finding that large corporations are least likely to experience fraudulent financial reporting.

Joseph M. Larkin (2000) surveyed the internal audit department of a large financial services organization. Respondents were asked to recognize and evaluate ethical and unethical situations often encountered in practice. For the most part, respondents viewed themselves as more ethical than their peers. This study explored a previously unexplored profession, namely, the internal auditing profession.

3.1.2 Measuring Perceptions about Management's Ethical Standards

An attempt has been made by D'aquila (2001) to measure financial accountants' perceptions of management's ethical standards. This has been done by including both-management's actions and management's expectations of the employee. It is noteworthy to find that financial accountants have more positive attitudes about management's expectations of them in comparison to what they perceive about management's own actions in terms of ethical behavior. It is essential for managers to understand employee perceptions, so that they can create organizational environments that promote ethical decisions.

Her study finds that there is strong relation between employee perceptions and management level. CFOs more strongly believe that management expects them to pay attention to ethical issues when dealing with others. Their perceptions are in conformity with research by Harris (1990), who also indicated that managers at more senior levels are less compromising of fraudulent behavior. They feel less pressure to compromise personal ethics in pursuit of achieving organizational expectations. Responsibility of financial information report by the organization is on CFO. It was expected that their behavior will be followed by other employees of the organization. It is good that these individuals perceive strong expectations to pay attention to ethical issues. These expectations force CFOs to pay attention to ethical issues. Their role as an employee with ultimate responsibility for financial reporting may strengthen CFO's belief to act according to company's expectations.

It is interesting to note the more positive responses about management's expectations obtained from supervisors and controllers. Supervisors, followed by chief financial officers, and then controllers, are of the opinion that they are expected to pay attention to ethical issues. Responses followed a somewhat similar pattern when respondents were asked about management's own actions regarding ethical behavior.

3.1.3 Factors Influencing Management's Ethical Conduct

Rodriguez-dominguez, Gallego-alvarez, and Garcia-sanchez (2009), in their study have observed that being in board makes top management more discretionary in deciding ethical issues. We can also say, their participation in ownership does not allow them from being dismissed as managers, and they are interested in overall ethical behavior of the organization. Moreover, they may use codes of ethics to limit the actions of managers; they could be putting an unethical policy strategically to complement their entrenchment strategy where ideas are not changeable.

This situation may be reversed by having more of outside directors on the Board. Their presence in preparing ethical code as a document which guides the behavior of the corporation's members may help. The reasoning for this conduct is that they are impartial and have wide experience and a sense of moral and legal obligations.

Besides, outside or independent directors defend the interest of stockholders and their future contracts are strongly influenced by their current associations with whom they are working. These results are supported by Webb (2004), who reported that outsiders have a higher level of orientation toward corporate social responsibility. These results are supported for outside directors in UK where they are found to be more discretionary regarding their corporate responsibility but no significant difference was found regarding ethical and legal aspect of corporate social responsibility, according to Ibrahim and Angelidis (1995).

3.2 Organizational and Individual Ethics

Elango, Paul, Kundu, & Paudel (2010)**,** in their research article "Organizational Ethics, Individual Ethics, and Ethical Intentions in International Decision-Making" explored the impact of both individual ethics and organizational ethics on ethical intention. The focus was on international scenario because this provided more scope for ethical decision-making. It requires harmony of both organizational and individual ethics to achieve congruence which helps in enhancing corporate governance. Their combined effect was measured on ethical intention. The congruence was referred to as "person-organization fit" by Liedtka (1989). The term "value congruence" was used to describe the internal consistency held by organization and values held by individual. The greater the value congruence within the organization, the more influential it was in shaping the responses of individuals faced with ethical dilemmas.

It is interesting to find how value congruence of organization and individual influences the behavior of person dealing with ethical dilemma. For instance, an organization having strict accounting compliance policies may influence in adhering to it for the fear of being punished for non-compliance. The relationship between individual values, organizational ethics and ethical decision-making is quite complex and multi-dimensional. Most of the researches either talk of individual or organizational ethics separately rather than taking the effect of both simultaneously (Ambrose et al., 2008).

It was found that managers use both individual ethics and organizational ethics in making their ethical choices. Also younger managers were more influenced by organizational ethics than older managers. No significant relationship was found between management level and ethical intention. There were other factors such as societal influence, organizational policies and procedures and leaders influence that had an impact on ethical choices.

The study has significant implications for corporate governance studies. The study suggests that companies trying to achieve corporate governance should have effective internal control mechanism. There is close coordination between individual and organizational ethics. The close relationship between individual ethics and ethical intention suggest that managers should have high moral values. A strong relationship between the two should design ethics program to create strong ethical culture.

3.3 Code of Ethics

According to Stevens (2008), Enron, Tyco, and WorldCom had unwholesome cultures that lacked ethical valuesinspite of having code of ethics in place. At Enron, the fake numbers were entered into books and still the company culture rewarded strong financial performance at any cost. Former WorldCom chief executive Bernie Ebbers believed he was beyond the code and acted as if it didn't matter. Tyco's culture allowed its top executives to incur massive expenditure. Employees should adapt themselves to code, should be supported and rewarded for observing the code, and follow managers and executives in the organization behaving consistent with the code. Organizations should develop strong cultures to avoid the offensive behavior demonstrated by executives in Enron and Tyco.

3.3.1 Importance of Code of Ethics

A code of ethics is certainly a very important ingredient of a firm's ethical dimensions. Managers need to educate employee with the help of code of ethics regarding ethical issues. This can also be useful in telling employees about management's expectations concerning their conduct (Schwartz, 2004). Such efforts by firms are consistent with the guidelines for compliance and ethics programs issued by the United States Sentencing Commission (USSC).

Manager's responses towards compliance of codes are important. Employees are sensitive to issues regarding justice, so violations must be addressed and repercussions communicated to all. Kickul (2005) noted if an employee is not trusted enough, it makes him sensitive to fairness issues. It is essential that code implementation should be effective at top level. In a recent article Schwartz, Dunfee, and Kline (2005) note that corporate boards need to set the tone in organizations. The corporate strategy requires that valuing ethics should come from the top level.

McKinney, Emerson, & Neubert, (2010), in their study "The Effects of Ethical Codes on Ethical Perceptions of Actions Toward Stakeholders" point out the necessity of adopting ethical codes and have stated that "Corporate executives are responsible for obeying the law, and should be held accountable for any illegality. But they cannot and should not be expected to do anything more…" (Reich, 2007, p. 211). Organizational members are likely to follow the established rules of the legal system. Whereas, a more extensive approach would be to create an ethical business climate by creating 'rules of the game' or codes of conduct that include expected behaviors for the benefit of stakeholders.

3.3.2 Effectiveness of Codes:

According to Stevens (2008), culture and effective communication are key elements for a code's success. If a corporate culture is intertwined with corporate code and its leaders adopt ethical code, they are likely to be successful. Codes must be communicated effectively to be successful. There must be discussions between employees and management which is important for successful implementation of ethical codes. On the other hand codes are no guarantee that will positively impact employee's behavior and deter them from taking unethical actions. A study of 202 Fortune 500 codes showed little evidence that there is any connection between code and behavior. He concluded that codes did not promote self-regulation. Cleek and Leonard (1998) later concluded that codes of ethics did not determine or influence an employee's ethical behavior. Empirical studies suggest either mixed results (Loe et al., 2000; Marshall et al., 1998) or a lack of effectiveness. Weeks and Nantel (1992) were of the view that only well communicated codes promote ethical behavior in organizations.

3.3.3 Communication of Codes of Ethics

Trevino et al. (1999) stressed that open discussions of ethics in the organization is a positive step towards promoting effectiveness of codes. Powerful leaders who share their values with others positively affect the code and resultant behavior. Somers (2001) noted that management accountants found less wrongdoing in organizations with corporate codes and respondents in organizations without formal codes were more aware of wrongdoing. Awareness, understanding and communicating codes is important.

Effective communication is essential for ethical code effectiveness. Both Adams and Rachman-Moore (2004) and Weeks and Nantel (1992) emphasized the correlation between codes and communication. They noted that effectiveness of codes depended on effectiveness of channels of communication. So communication is the key, but channels are also important. Success and failure of codes depend upon the way an ethical code is communicated. Schwartz (2004) stated that the codes should be readable, relevant and should have a positive tone.

Codes should act as powerful organizational instrument for discipline and sanctions must be applied when codes are violated. Employees see and hear organizational actions and they respond to internal messages. Nitsch et al. (2005) describes the frustration and anger that develops in

organizations where code violations go unreported. Codes are effective only to the degree that code violations are appropriately sanctioned. Organizational leaders, who ensure that justice prevails in organizations, are trusted and are able to strengthen members' commitment to the code.

3.4 Ethics in Accounting and Finance

Horomnea and Pascu (2012) in their study "Ethical and Morality in Accounting Epistemological Approach" stress the importance of ethics and morality in the accounting environment, by arguing that it takes an ex-ante (before the event) analysis or followed by an ex-post (after the event) analysis, to explain the ethical links between the multitudes of areas. The failure of complying the moral principles and norms of the contemporary world, has led to chaos and lack of provision in the economic plan. Their approach was to establish the connection between business, ethics, morality, professionalism and accountability. There is interdependence in the objectives of accounting and morality in business. If there are no ethical and moral principles in accounting, it would create such conditions where "legal fraud" will be committed. An accounting system without rules and ethical principles is a weak system which reduces the quality of financial information. Horomnea subscribed to the view that accounting should give true and fair view as suggested by virtue ethics of being ethical and moral in the first place. The most important question is –whose responsibility is it to implement ethical and moral principles? The answer to this is entire staff- individually and collectively. And they should be guided by three R's- respect, responsibility and result. Respect should be there for people, organizational resources and environment. Responsibility should be towards clients, colleagues, company, personal and social responsibility. Result means understanding the way they have been achieved which is as important as result itself.

Merchant (1987), studied actual cases of deceptive reporting and interviewed executive with financial reporting or audit responsibilities. Merchant emphasized the importance of moral guidance by management in terms of written Codes and their communication, role models, realistic performance targets and caution regarding high incentive for financial performance.

According to Gayle (2013), organizational performance can be improved if accountants possess the knowledge of emotional intelligence and virtual ethics. These soft skills have been reported to be beneficial in other professions also by contributing to effective organizational performance. With the globalization of business, the technical knowledge required to encompass the soft skills of accounting professionals have increased significantly since the early 1990s. Accounting professionals are now required to provide other functions such as information facilitation in addition to technical tasks such as bookkeeping, financial analysis, auditing, and tax preparation. This creates greater need of having the soft skills of emotional intelligence and virtual ethics.

Bhasin (2013) elaborates that "the fraud committed by the founders of Satyam in 2009, is a perfect example of the fact how people are guided by ambition, and hunger for power, money, fame and glory. Organizations of all types and sizes are subject to fraud. On a number of occasions over the past few decades, major public companies have experienced financial reporting fraud, resulting in turmoil in the capital markets, a loss of shareholder value, and, in some cases, the bankruptcy of the company itself. Although, it is generally accepted that the Sarbanes-Oxley Act has improved corporate governance and decreased the incidence of fraud, recent studies and surveys indicate that investors and management continue to have concerns about financial statement fraud".

The paper goes on to investigate Satyam's case and the lessons learnt therefrom. The 2009 Satyam scandal in India highlighted the nefarious potential of an improperly governed corporate leader. As the case continues, and we count its effects, the whole economy can feel it, we keep hoping that corporate world learn some lessons and some positive steps are taken.

4. LITERATURE REVIEW: A NEW PERSPECTIVE

So far business ethics has been seen in terms of ethics and morality of individuals. It has been understood as if the organization's ethics is equal to personal ethics of those running the organization. The emphasis has been how managers can improve ethical leadership by learning about their own values. How they perceive their environment and effects of their perception on employees have been well documented. Business ethics in the past has been seen as personal or individual ethics of those who are running the organization. We started from a perspective where ethics has been equated to individual ethics. More aware have talked about ethics as managerial ethics. Still more evolved have discussed business strategy or policy. There is need to move from individual ethics to organizational ethics.

Most of the studies were talking about business ethics as personal ethics, until a path breaking study by Murthy (2007), "Business Ethics and Corporate Responsibility- A New Perspective". The paper stresses the need to understand Business ethics as organizational ethics. It starts with refuting the controversial statement of Peter Drucker which stated that there was no separate ethics for business. The paper makes distinction between business philosophy and philosophy of business. Business philosophy is about where the company would like itself down the line whereas philosophy of business is an area of study. According to Murthy (2007), "the business philosophy may or may not include ethical dimension in it, but the philosophy of business necessarily and clearly is concerned with the ethical foundation of business as a

discipline." This fact is supported by the study of Hoffman and Moore (1982), "In his 'what is business ethics?' Peter Drucker accuses business ethics of singling out business unfairly for special ethical treatment, of subordinating ethical to political concerns, and of being, not 'ethics' at all, but 'ethical chic'." Murthy asserts that Peter Drucker's denial of business ethics rests on basic misunderstanding of this field.

He quotes Klempner (2006) regarding the philosophy of business- "Understanding the rules and conventions of business is one of the main tasks for the philosophy of business. In one of its forms, this is known as 'business ethics'. The other main task understands how business is possible…" There is a drastic change in philosophy of business which leads to new perspective between business ethics and corporate social responsibility. A new concept emerges which is called Corporate Responsibility. This term is composed of three things (a) good governance (b) corporate social responsibility or CSR (c) environment accountability. The top managers need to achieve the integrated approach of all three of these through organizational transformation. There is a need to bring out a strategy which addresses the issues at international level and provide standards which are measurable and unbiased.

5. CONCLUSION

Solomon (2003) and Corvino (2006) talked about individual ethics or morality of managers. Schemidt and Posner (2010) who studied three decades perspective of American managers said that values are important in organizational life. Rich (1990), studied work environment of financial accountants and found that respondents felt pressure to achieve targets. Harris (1990), D'aquila (2001) and others examined effect of classification variables on the ethical values of mangers. Yates (2011) explored the relationship of ethical leadership with job satisfaction, organizational commitment, and organizational citizenship behavior.

Stevens (2008), Schwartz (2004), McKinney, Emerson, & Neubert, (2010) stressed the importance of code of ethics in an organization. Cleek and Leonard (1998) later concluded that codes of ethics did not determine or influence an employee's ethical behavior.

Horomnea and Pascu (2012) stress the importance of ethics and morality in the accounting environment. Merchant (1987) studied actual cases of deceptive reporting and interviewed executive with financial reporting or audit responsibilities. Bhasin (2013) investigates Satyam's case in Indian scenario and dwells upon the lessons learnt through this case.

Not much literature was found in the area of organizational ethics. The literature does not stop at business ethics being discussed as individual ethics. "Business ethics and corporate responsibility –A new perspective" presented by Murthy (2007) has been discussed as a path breaking literature in this paper.

ACKNOWLEDGEMENT

Prof. K. V. Bhanu Murthy has been a source of inspiration and support throughout my professional career. It is an honor to be guided by him in my Ph.D. thesis and in my every pursuit of academic achievement. I also have the privilege of being co-guided by my colleague Dr. Saloni Gupta who is an Associate Professor in our college. I humbly submit this article which is part of my ongoing thesis to our journal 'Arthavaan'.

REFERENCES

[1] Adam, A. M., &Rachman-Moore, D. (2004). The Methods Used to Implement an Ethical Code of Conduct and Employee Attitudes. *Journal of Business Ethics*, 54(3), 223-242.

[2] Ambrose, M. L., Arnaud, A., & Schminke, M. (2008). Individual Moral Development and Ethical Climate: The Influence of Person–Organization Fit on Job Attitudes. *Journal of Business Ethics*, 77(3), 323-333.

[3] Argandona, A. (2003). Fostering values in organizations. *Journal of Business Ethics*, 45(1), 15-28.

[4] Bhasin, M. L. (2015). Corporate Accounting Fraud: A case of Satyam Computers Limited. *Open Journal of Accounting*, 2013, 2, 26-38.

[5] Cleek, M. A., & Leonard, S. L. (1998). Can corporate codes of ethics influence behavior? *Journal of Business Ethics*, 17(6), 619-630.

[6] Committee of Sponsoring Organizations of the Treadway Commission (1999). Fraudulent Financial Reporting: 1987-1997 — An Analysis of US Public Companies.

[7] D'aquila J. M. (2001).Financial Accountants' Perceptions of Management's Ethical Standards. *Journal of Business Ethics*, 31 (3), 233-244.

[8] Drucker, P. F. (1981). What is business ethics? *The Public Interest*, (63), 18.

[9] Elango, B., Paul, K., Kundu, S. K., &Paudel, S. K. (2010).Organizational ethics, individual ethics, and ethical intentions in international decision-making. *Journal of Business Ethics*, 97(4), 543-561.

[10] Gayle, J. R. (2013). A quantitative study of the relationship between emotional intelligence and virtue ethics in accounting professionals (Doctoral dissertation, Capella University).

[11] Harris, J. R. (1990). Ethical Values of Individuals at Different Levels in the Organizational Hierarchy of a Single Firm.*Journal of Business Ethics,* 9, 741-750.

[12] Hoffman, W. M., & Moore, J. M. (1982). What is business ethics? A reply to Peter Drucker. *Journal of Business Ethics*, 1(4), 293-300.

[13] Horomnea, E., & Pascu, A. M. (2012). Ethical and Morality in Accounting Epistemological Approach. *Journal of Eastern Europe Research in Business & Economics*, 1.

[14] Ibrahim, N. A., & Angelidis, J. P. (1995). The corporate social responsiveness orientation of board members: Are there differences between inside and outside directors?. *Journal of Business Ethics*, 14(5), 405-410.

[15] Kelley, S. W., O. C. Ferrell, and S. J. Skinner: 1990, 'Ethical Behavior among Marketing Researchers: An Assessment of Selected Demographic Characteristics', *Journal of Business Ethics,* 9, 681–688.

[16] Kickul, J., Gundry, L. K., & Posig, M. (2005). Does trust matter? The relationship between equity sensitivity and perceived organizational justice. *Journal of Business Ethics*, 56(3), 205-218.

[17] Klempner, G. (2006). On being a Business Philosopher, *Philosophies for Business E-journal*. 26.

[18] Larkin, J. M. (2000), The Ability of Internal Auditors to Identify Ethical Dilemmas.*Journal of Business Ethics*, 23, 401–409.

[19] Liedtka, J. M. (1989). Value congruence: The interplay of individual and organizational value systems. *Journal of Business Ethics*, 8(10), 805-815.

[20] Loe, T. W., Ferrell, L., & Mansfield, P. (2000). A review of empirical studies assessing ethical decision making in business. *Journal of Business Ethics*, 25(3), 185-204.

[21] Marshall, R. L., Armstrong, R. W., & Smith, M. (1998). The ethical environment of tax practitioners: Western Australian evidence. *Journal of Business Ethics*, 17(12), 1265-1279.

[22] McKinney, J. A., Emerson, T. L., &Neubert, M. J. (2010). The effects of ethical codes on ethical perceptions of actions toward stakeholders. *Journal of Business Ethics*, 97(4), 505-516.

[23] Merchant, K. A. (1987). Fraudulent and Questionable Financial Reporting: A Corporate Perspective, *Financial Executives Research Foundation*, New Jersey.

[24] Murthy, K. V. B. (2007). Business Ethics and Corporate Responsibility- A New Perspective. Retrieved March 16th, 2014, from https://mpra.ub.uni-muenchen.de/2634/1/ MPRA_paper_2634.pdf

[25] Nitsch, D., Baetz, M., & Hughes, J. C. (2005). Why code of conduct violations go unreported: A conceptual framework to guide intervention and future research. *Journal of Business Ethics*, 57(4), 327-341.

[26] Posner, B. Z. (2010). Values and the American manager: A three-decade perspective. *Journal of Business Ethics*, 91(4), 457-465.

[27] Posner, B. Z. & Schmidt W. H. (1984), Values and the American Manager: An Update, *California Management Review,* 20, 202–216.

[28] Posner, B. Z. & Schmidt, W. H. (1987). Ethics in American Companies: A Managerial Perspective, *Journal of Business Ethics*. 6, 383–391.

[29] Reich, R. B. (2007). Supercapitalism: The Transformation of Business, Democracy and Everyday Life.

[30] Rich, A. J., Smith. C. S., and Mihalek, P. H. (1990), 'Are Corporate Codes of Conduct Effective?'*Management Accounting*, 34-35.

[31] Rodriguez-Dominguez, L., Gallego-Alvarez, I., & Garcia-Sanchez, I. M. (2009). Corporate governance and Codes of Ethics. *Journal of Business Ethics*, 90(2), 187-202.

[32] Schwartz, M. S. (2004). Effective corporate codes of ethics: Perceptions of code users. *Journal of Business Ethics*, 55(4), 321-341.

[33] Schwartz, M. S., Dunfee, T. W., & Kline, M. J. (2005). Tone at the top: An ethics code for directors? *Journal of Business Ethics*, 58(1-3), 79.

[34] Solomon, R. C. (2003). A better way to think about business: How personal integrity leads to corporate success. Oxford University Press, USA.

[35] Somers, M. J. (2001). Ethical codes of conduct and organizational context: A study of the relationship between codes of conduct, employee behavior and organizational values. *Journal of Business Ethics*, 30(2), 185-195.

[36] Stevens, B. (2008). Corporate ethical codes: Effective instruments for influencing behavior. *Journal of Business Ethics*, 78(4), 601-609.

[37] Treviño, L. K., Weaver, G. R., Gibson, D. G., & Toffler, B. L. (1999). Managing ethics and legal compliance: What works and what hurts. *California management review*, 41(2), 131-151.

[38] Webb, E. (2004). An examination of socially responsible firms' board structure. *Journal of Management and Governance*, 8(3), 255-277.

[39] Weeks, W. A., & Nantel, J. (1992). Corporate codes of ethics and sales force behavior: A case study. *Journal of Business Ethics*, 11(10), 753-760.

ARTHAVAAN
Volume 2, Issue 1, December 2017

http://www.bharaticollege.com

Bitcoin's Block Chain Technology: An Innovative Financial Innovation

Shilpa Arora[1], Aashna Thapar[2]

[1]Assistant Professor, Institute of Innovation in Technology & Management, GGSIP University, Delhi
shilpa.iitm@yahoo.com
[2]Student, Institute of Innovation in Technology & Management, GGSIP University, Delhi,
aashnathapar9@gmail.com

"Bitcoin is a remarkable cryptographic achievement and the ability to create something that is not duplicable in the digital world has enormous value"
- Eric Schmidt, CEO of Google

Abstract

Bitcoin, the most intriguing financial innovation has caught the imagination of technologists and economists. It is an advanced, decentralized and partially anonymous currency. The financial world, national banks, money related foundations and furthermore governments are in profound love with the technology brought by Bitcoin- 'The Blockchain Technology'. The Bitcoin concept conveys properties of an instalment framework which encourages the exchange of significant worth between parties. It depends on shared systems, administration and cryptography to keep up its trustworthiness. Bitcoins are highly liquid, have low transaction costs, can be used to send even micropayments quickly across the internet. It is sequential transaction databases. Although, it is an obscure concept today, in the coming days, it will be the backbone of future payment system. This paper endeavours to solicit the working of Blockchain innovation, its industry applications and administrative responses. Furthermore, viable difficulties and future prospects are also portrayed in this paper.

Keywords: *Bitcoin, block-chain technology, crypto currency, digital money*

1. INTRODUCTION

In 2009, an anonymous man named "*Satoshi Nakamoto*" made digital money called as "BITCOINS". It is advanced, decentralized, in part mysterious cash, not upheld by any legislature or any legal entity. So for first time in mankind's history, individuals wherever can trust each other and transact individual to individual. This trust is set up not by some enormous foundation, but rather by joint effort, by crypto-currency and by some smart code. Numerous people and entrepreneurs don't comprehend what is Bitcoin, how it works, this article talks about nature of Bitcoin, a decentralized, mysterious and to a great extent unregulated virtual cash, additionally incorporates examination of the two points of interest and detriments by checking on its, present and future.

2. OBJECTIVES OF THE STUDY

1. To comprehend the idea of Bitcoins and how it works.
2. To know the upsides of Bitcoin.
3. To know the risks related with Bitcoins.
4. To examine the eventual fate of Bitcoins: legal structure in India and around the globe.

3. LITERATURE REVIEW

Bitcoin is computerized money intended for the current market situation. It is a worldwide advanced money working through the web and not sponsored by any administration (Orsenigo and Tammuni, 2016). The currency is basically a unit of measure, similar to a Dollar, Euro, or Yen, Bitcoin exists just in computerized shape. One well known segment of Bitcoin is blockchain. Each Bitcoin is claimed by a Bitcoin address, which comprises of a public key (Kroll; Davey; Felten, 2013). It's easy to utilize Bitcoins to pay for products and ventures, particularly if what you're purchasing is in different nation (Salmon, 2013).

Nonetheless, there are shortcomings too of this new digitalized cash. There have been circumstances when the ascent and fall of the estimation of the cash has been clear. These circumstances made a dilemma among the users of this

currency. (Wallace, 2011) Numerous nations around the world are excessively debating whether it ought to be legitimized or not (Desai, 2015).

A development into a computerized economy will touch off potential outcomes over the globe like never sometime recently. We anticipate a sizable increment in the speed of cash made conceivable by the frictionless instalment framework Bitcoin plots. An awesome stride forward lies in the chance to construct a future economy in light of the scientific laws of the universe, outside the grip of human blunder and control. At its fullest potential, Bitcoin can fill in as a real money ware, store of significant worth, and framework whereupon progressively complex esteem exchange conventions can be assembled. As a venture which shouts to be investigated and received, Bitcoin remains the most imperative advancement of the mid-21st century (Salmon, 2013).

4. EXPLAINING BITCOIN

4.1 What Is Bitcoin?

Bitcoin is a computerized, cryptographic type of cash which is an item based online payment system which is the world's first decentralized cash. It is a type of instalment that utilises cryptography to control its creation and administration, as opposed to depending on focal specialists. As *Satoshi Nakamoto*, the maker of Bitcoin puts it – "an electronic cash system".

Not at all like customary monetary forms, has Bitcoin existed just in computerized shape. One Bitcoin (or BTC) can be subdivided by ***eight decimal*** spots into littler units called "***satoshis***."[1]

4.2 How It Works

What separates Bitcoin is really entrancing, both as far as how exchanges are handled and how the data is ensured. Bitcoin exchanges are recorded in what is known as the ***block chain***. Think about this as a general record recording every single budgetary exchange regardless of their source or goal. The block chain is totally public. It does not exist at any one place: It can be downloaded to any PC, anyplace on the planet.

Furthermore, according to Kroll et.al. (2013) "The proof-of-work puzzle is controlled by an adaptive algorithm, which takes into account recent activity in the block chain's history". Proof of significant worth is put away in scrambled strings of information called *hashes*. All you have to demonstrate responsibility for is a string of data that is perceived in the record as one of a kind. Nobody else has your correct string.

[1]*A Satoshi is the smallest fraction of a Bitcoin and 1 Bitcoin is worth 100 million satoshis*

To store Bitcoin, a client makes a "***wallet***", either by down-stacking programming onto a PC or cell phone, or by utilizing one of various online wallet administrations. Once your wallet is made, you can move Bitcoin into it either by buying it straightforwardly, through exchange from another client, or by mining new coins. Also, esteem can be exchanged from your wallet to another person's by utilizing a basic application with just a couple of snippets of data.

Transactions would be broadcast to the network, and computers running the software would compete to solve irreversible cryptographic puzzles that contain data from several transactions. The first miner to solve each puzzle would be awarded 50 new Bitcoins, and the associated block of transactions would be added to the chain. "The difficulty of each puzzle would increase as the number of miners increased, which would keep production to one block of transactions roughly every 10 minutes" (Wallace.2011).

"Salmon, F. (2013) says that Bitcoins, then, are like cash—but they take the idea a step further than has ever been possible. If you give me a $100 bill, the transaction is anonymous and untraceable, but we both need to be in the same place at the same time. And it helps if we both live in a country where the US dollar is an accepted unit of currency". With Bitcoins, exchanges can occur crosswise over main lands and time zones without any issues, no time lags, and with no exchange charges.

4.3. Acquiring of Bitcoins

There are numerous approaches to acquire Bitcoin. The first is to mine them with a PC and bolster the developing Bitcoin arrange. In the good old days this was convenient to do with a normal family unit PC. Presently, mining Bitcoin has turned into the particular area of a couple of devoted operations with refined equipment.

The second method for acquiring Bitcoin is by being paid in it. This technique is a phenomenal approach to help energise the Bitcoin economy and enable it to pick up acknowledgment around the world. Offer your products and enterprises for Bitcoin and ask your boss on the off chance that they would consider paying your pay in Bitcoin and be set up for a stupefied response.

The third and most common method for acquiring Bitcoin is by buying it. You can do this in various diverse ways; the most widely recognized being face to face or through an online trade administration of Bitcoin ATMs accessible (BTMs).

4.4 Buy and Sell Bitcoins

Since Bitcoin is another type of cash, you can speculatively purchase anything as long as the other gathering will

acknowledge Bitcoin as instalment. As an ever increasing number of gatherings start to acknowledge Bitcoin as instalment, it will ascend the Bitcoin economy and help in persuading others to consider it for their own particular business.

4.5 Storing of Bitcoin: Wallets

Your wallet is your key to that measure of possession. A wallet address works similar as an email address may work. Instalments are capable for being sent from and received at a wallet address. These are the basic roles of a digital currency wallet. Every wallet is arbitrarily allotted a series of characters which assign its address. For instance, in the event that you make another wallet address you may have a string of 34 characters, for example, 16D4QXWCFZ9K94RMAD1 NUBJWN15AHJBMLR; this would be the address appeared in the blockchain record when you send and get instalments.

4.6 Economics of Bitcoin

Right now, there are around 16 million Bitcoins available for use. A solitary Bitcoin is approximately worth $4327.28 USD (as on 4 October 2017).

Maximum number of Bitcoins that can ever be created is21 million. There is a probability that when Bitcoins can never again be produced their value may increment significantly. Bitcoin mining is an asset and amid it new Bitcoins are added to the pool of Bitcoins accessible to the world.

5. UPSIDES OF BITCOIN

Today we depend totally on huge delegates brokers like banks, government, enormous web-based social networking organizations, and they perform all transactions yet there are developing issues. To start with, theycan easily be hacked, and they prohibit billions of individuals who don't have enough cash to have a financial balance. They back things off. It can take a moment for an email to circumvent the world; however it can take days or weeks for cash to travel through the banking system over a city. Big middle people make huge bit of move 10% to 20 % just to send cash to another nation. They catch our information, and that implies we cannot adapt it or utilize it to better deal with our lives.

Our security is being undermined. Bitcoin enables instant transfer of money anywhere in world over web however like physical cash you needn't bother with watchman for exchange because of incredible innovation at backend called Blockchain. It becomes economically unviable for banks to open branches in every town area of society but if villager needs to open Bitcoin account all he require is a cell phone and can create an account within seconds and can pay anybody in world with palm of his hands.

It is necessary that any type of cash should be valuable and uncommon; Bitcoin programming ensures that Bitcoin is uncommon which implies there can only be 21 billion Bitcoins that will ever be made. Bitcoin is resistant to inflation and hyperinflation as fiat money which we use is subject to hyperinflation. Bitcoin-based payments offers low exchange costs, since all payments are performed directly amongst clients and there are no exchange costs in this process. Users don't need to bother with a bank or PayPal record or credit card to pay for using Bitcoins – all they require is a web association. Besides Bitcoin both household and global exchanges are quicker than PayPal or bank exchanges and, what's critical – utilizing Bitcoins takes out the middlemen from budgetary transactions. Individual Information Privacy: It doesn't require the individual data that customary budgetary establishments would, for example, government distinguishing proof and contact data among a host of other information. Since the Bitcoin instalment framework does not require these inputs, it requires not to put a subject's close to home data in danger.

6. CHALLENGES AND RISKS RELATED WITH BITCOIN

Bitcoin address proprietors are not unequivocally recognized, such exchanges are viably mysterious. In any case, this namelessness has been known to pull in exchanges from illicit exercises, the best-known illustration being that of the Silk Road site.

Confidence: Like practically anything in which people can contribute their cash, Bitcoin is most likely helpless to nonsensical air pockets and furthermore unreasonable or normal loss of certainty, which would crumple request with respect to supply. Certainty may fall in light of specialized issues: if the namelessness of the framework is traded off, if cash is lost or stolen, or if programmers or governments can keep any new exchanges from settling.

Cyber Attacks and Hacking: Attacks by "digital criminals" are getting to be noticeably visit with the progression of time. Particularly the Bitcoin people group has been hit by such robberies over and over. This makes freeze in the Bitcoin people group as well as prompts a decrease in the estimation of the cash. Digital security will be a steady concern, for the most part on the grounds that the exchanges are limited just to the digital condition.

Uncertainties in the Government Policies: Since most purviews have not settled on a choice with respect to the status and treatment of Bitcoin in the economy, as of now talked about over, the instability is a major issue for some new forthcoming clients of Bitcoin. One of the real threats here is that any legislature may come around and announce it illicit, leaving the financial specialists without cure and powerless.

Mining Pools: As talked about above, Bitcoins are made when an excavator effectively understands a scientific baffle. The riddles have turned out to be altogether more troublesome after some time, and knotty prizes mean a solitary digger is currently at danger of contributing assets trying to understand a confuse yet then getting no reward.

Bitcoin utilize is totally restricted in Russian Federation and China, and business, which utilizes Bitcoins couldn't work there or couldn't utilize Bitcoins for any exchanges there.

7. EVENTUAL FATE OF BITCOINS

What is the fate of Bitcoin and other virtual monetary standards? To substitute credit cards for ordinary purchase payments? It may not be Bitcoin, but rather no ifs ands or buts, Crypto currency will be fundamental to the advance of the world. Being ready to easily exchange cash is recently incredible. One doesn't need to stress over any impeded charges, conversing with hindered individuals, just to get my cash sitting in an impeded bank.

7.1. Global Scenario

Some notable organizations who have acknowledged Bitcoin for payments are: Amazon, Apple Expedia, Overstock, Subway, Reddit, Microsoft, Dell, Tesla, Bloomberg.com, Kmart, Sears, Gap, Victoria Secret.

Bitcoin are listed and traded on stock exchanges in various jurisdictions around the world. Some examples are (i) Mt. Gox in Japan (previously one of the most widely exchanges); (ii) BTC China; (iii) Bit Box in the United States;(iv) Bitcurex in Polandand (v) Bitsamp in Slovenia. Although there is no formal Bitcoin exchange in India at present, there are numerous websites through which Bitcoin can be bought and sold.

The intentions of Satoshi Nakamoto were at last to thump national banks off their roost, the innovator of Bitcoin openly talking about a doubt towards national banks. The advancement of Bitcoin has absolutely opened the eyes of many; bringing into question the requirement for national banks should Bitcoin turn into the strategy for decision, as there would be no necessity for the issuance and settlement.

There are numerous nations with specific affection towards Bitcoin like:

1. **The U.S**: Has the most astounding number of cryptographic money clients, the most astounding number of Bitcoin ATMs and furthermore the most astounding Bitcoin exchanging volumes all around. The U.S is the home to Silicon Valley all things considered and it will absolutely look good for Bitcoin's future.
2. **Denmark**: The legislature is looking to totally move to computerized cash; however it stays indistinct whether Bitcoin will win, the Danish Central Bank having beforehand pronounced that Bitcoin is not money and that it would not manage its utilization.
3. **Sweden**: Also hoping to move to advanced money, dissimilar to Denmark, the Swedish controller has freely proclaimed Bitcoin as legitimate cash.
4. **South Korea**: There are presently no laws in South Korea controlling the utilization of Bitcoin, where individuals can purchase Bitcoin.
5. **Netherlands**: While greatly mainstream, Bitcoin is not directed in the Netherlands, however this doesn't appear to hinder, with Bitcoin ATMs, new businesses and a Bitcoin Embassy in presence.
6. **Finland**: Bitcoin has been named a money and Bitcoin ATMs have been on the ascent and Finland is likewise home to one of the main worldwide distributed Bitcoin trades, Local Bitcoins.
7. **Canada**: Canada hopes to take after the U.S in the utilization of digital currencies.
8. **Australia**: Previously forced twofold tax assessment on Bitcoin has been expelled, however keeps on staying unregulated by the RBA, which recognized that there are no laws against the utilization of Bitcoins and the use is a greater amount of a subjective one.
9. **Japan**: The Japanese government moved to legitimize Bitcoin as a money powerful by law toward the begin of April in a move that saw Bitcoin's esteem transcend the $1bn stamp, with some of Japan's biggest retailers accepting Bitcoin payment because of enactment. It is in actuality said that Bitcoin exchanging the Yen is the standout amongst the most fluid markets all around.

Is Bitcoin essentially a 21st century rendition of gold, just without the capacity issues? Or, on the other hand is it only a brief prominent trend that may soon advance into something very extraordinary? The truth will surface eventually. The main conviction is that its cost will stay extremely unpredictable later on. At the present time, Bitcoin will help integrate the world. The world could utilize it as solitary cash, a dialect in cash that we as a whole acknowledge!

7.2 Indian Scenario

The Indian economy got a substantial blow when the government announced demonetization on 8th November 2016 and it rendered an incredible 86% of the country's cold hard cash. It was a fantastical arrangement of subduing illicit

exercises and Individuals in India were urgently searching for an alternate and that is precisely when they found the world's first decentralized digital money i.e., Bitcoin. India constitutes 10% of worldwide cryptographic money exchange as on May 2017.

Outline of the foundation story of India filling in as a hotbed of the Bitcoin transformation:

A report distributed by Reserve Bank of India in 2015 focused on the significance of private block chains and how they can change back end managing an account operations and accelerate instalments.

Former RBI Governor Raghuram Rajan implied at a plausible utilization of this digital currency in future at a December 2015 meeting.

As "DIGITAL INDIA" activity propelled by our Honourable Prime Minister, Narendra Modi, there are continuous endeavours to make India a computerized economy. Possibly this is the colossal time for Bitcoins and other computerized monetary forms to get sanctioned in India.

The Government has started an exchange discussion MyGov.in opening the conduit to general assessment on virtual monetary standards which has officially enlisted more than 4000 comments.

Start-ups like Unocoin, Coinsecure and Zebpay with strict Anti-Money Laundering (AML) and Know Your Customer (KYC) frameworks set up have just begun their operation on self-managed exchanging stages. They have additionally brought together to set up the Digital Assets and Blockchain Foundation of India which intends to spread the cryptographic money instruction among masses.

On July 27, Indian Finance Minister Mr. Arun Jaitley held a private meeting with nation's best authorities to talk about Bitcoins

According to a main daily paper of India, exchanging of Bitcoins may go under the eyes of Securities and Exchange Board of India.

In the event that grapevines are to be trusted then Indian government is good to go to give a legitimate status to Bitcoin in perspective of its voluminous exchanging. Furthermore, to the extent its future is concerned, time will fill in as the best judge.

7.3. Outcomes of Legalizing Bitcoin in India

On the off chance that Bitcoins are authorized in India, the accompanying results may happen:

- Bitcoins will fall under the idea of RBI's 1934 Act. Bitcoin investors will be taxed.
- RBI should issue rules with respect to speculation and buy of Bitcoins.
- If any remote installments are to be made through Bitcoins, it would fall under the thought of FEMA Act.
- Bitcoin investors and returns from interest in Bitcoins will be taxed.

7.4. Will Bitcoins Be Legal in India?

According to our own musings, since Bitcoins are getting authorized in numerous nations over the globe; there emerges a plausibility that it will take after a similar destiny in India. On April 20, 2017, Indian Bitcoin fans were encountering a snapshot of euphoria. Most likely on the grounds that the news came that soon Indian government may maybe perceive Bitcoins, screen and manage Bitcoin exchanges and even impose charge on Bitcoins. Presently in the wake of taking a gander at some uplifting viewpoint from higher experts towards Bitcoin, the day is not far when Bitcoins will get a lawful status in India. Interpreting from previously mentioned examples and data accumulated how about we see status of Bitcoin Legality in India more or less. In this manner, it can be surmised that Bitcoin is in that space where it is neither legitimate nor illicit, yet unregulated. According as far as anyone is concerned, Bitcoin has not been made unlawful by any enactment in the majority of the purviews. Nonetheless, Regulators over a few locales are finding a way to give people and organizations certain principles on the best way to incorporate this new innovation with the formal and directed monetary framework.

8. CONCLUSION

Bitcoin is novel computerized money that can possibly be a critical player in the micropayment and virtual world trade markets. It is additionally incredible option money for gold bugs who want to hold monetary forms also, on the ground that it is unknown and decentralized, and in this way hard to close down. Once again, innovation genie has gotten away from the container, and it was summoned by an obscure individual at this indeterminate time in mankind's history and its giving us another kick, another chance to modify the monetary chance to revamp the financial power matrix and the old request of things and unravel a portion of the universes most troublesome issues, on the off chance that we will it!

REFERENCES

[1] Barber, S., Boyen, X., Shi, E., & Uzun, E. (2012). Bitter to Better: How to Make Bitcoin a Better Currency. In Financial Cryptography and Data Security (pp. 399-414). Springer Berlin Heidelberg. (Retrieved from http://crypto.stanford.edu /~xb/fc12/Bitcoin.pdf)

[2] Chernova, Y. (2013, October 23). Flurry of Bitcoin Venture Capital Deals Gives Way to Quiet. *The Wall Street Journal*. (Retrieved from http://blogs.wsj.com/venturecapital/2013/10/23/flurry-of-Bitcoin-venture-capital-deals-gives-way-to-quiet/)

[3] Desai, nishith (2015 April) Bitcoins-A Global Perspective: Indian Legal and Tax Considerations. (Retrieved from: https://www.zebpay.com/wp-content/uploads/2016/04/Bitcoins.pdf)

[4] Hollander, J. (2013, November). Invest in Bitcoin: After Silk Road Bust, Canada and China Are Betting on Bitcoin. Bustle. (Retrieved from http://www.bustle.com/articles/7898-invest-in-Bitcoin-after-silk-road-bust-canada-and-china-are-betting-on-Bitcoin)

[5] Kroll, J. A., Davey, I. C., & Felten, E. W. (2013). The Economics of Bitcoin Mining or, Bitcoin in the Presence of Adversaries. In Proceedings of WEIS 2013. (Retrieved fromhttp://weis2013.econinfosec.org/papers/KrollDaveyFeltenWEIS2013.pdf)

[6] Lomas, N. (2013, September 16). Bit Pay Passes 10,000 Bitcoin-Accepting Merchants on Its Payments Processing Network. Techcrunch. (Retrieved from http://techcrunch.com/2013/09/16/bitpay-10000-merchants/)

[7] Orsenigo, Giulio& J. Tammuni, Alexander (2016 April). The Rise of A Digital Currency Era: Bitcoin. Bocconi Economics Student Association, (Retrieved from: https://bocconiesa.files.wordpress.com/2016/04/Bitcoins.pdf)

[8] Salmon, F. (2013, November 27). The Bitcoin Bubble and the Future of Currency. Medium. (Retrieved from https://medium.com/money-banking/2b5ef79482cb)

[9] Vitalik, B. (2012, September 11). Bit Pay Exceeds 1,000 Merchants: An Interview with Tony Gallippi. Bitcoin Magazine. (Retrieved from http://Bitcoinmagazine.com/2298/bitpay-exceeds-1000-merchants-accepting-Bitcoin/)

[10] Wallace, B. (2011, November 23). The Rise and Fall of Bitcoin (Retrieved from http://www.wired.com/magazine/2011/11/mf_Bitcoin/

[11] Tapscott, Don & Tapscott, Alex (2017, February 7) .The Blockchain Corridor: Building an Innovation Economy in the 2nd Era of the Internet. (Retrieved from: http://dontapscott.com/BlockchainCorridorReport.pdf

[12] Boucher, Philip (2017, February). How blockchain technology could change our lives. European Parliamentary Research Service (Retrieved from: http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/581948/EPRS_IDA(2017)581948_EN.pdf)

Published by
Department of Commerce
BHARATI COLLEGE
C-4, Janakpuri, New Delhi-110058
Website: www.bharaticollege.com