

A REVIEW ON ASSOCIATION LEARNING IN BIOLOGICAL DATA

Dr. Gurpreet Singh Bhamra¹

Assistant Professor

CRS University, Jind

Anil²

M.Tech Scholar

CRS University, Jind

Abstract: In this paper, Data mining has been discussed with Data Warehousing. Data mining is considered as extraction of hidden predictive information. This information is fetched from huge records that are stored in database. It has been considered most powerful mechanism having great potential. It helps companies to concentrate on significant data in data value that are stored at warehouses. Here the Relation between DM and Warehousing is also mentioned. The Apriori is the frequently used application of association rule mining. It is required for market basket analysis. Purchasing choices of customer is usually analyzed. It is done by checking correlations along with associations among different items. These items are bought by customer. This paper provides the review of several researches in area of data mining in bioinformatics. Main focus is on the association rule mining of biological data for which there is a limited literature available

KEYWORD: Data Mining, Data Warehouse, Association, biological data , protein sequencing

[1]INTRODUCTION:

DM [1] has measured as sequence of hidden analytical information by records of big database. Data mining has been considered a new method having great efficiency. It gives us assist to concentrate on vital data in warehouses of their valuable information. Utensils of DM give the prediction of future trends. It takes into consideration the behaviours. It also gives the permission of businesses for taking the novel and those decisions which are motivated by knowledge. The automated, prospective analysis which is offered by DM is utilized to evaluate the past events. These events are given by conservative retrospective tool of systems which supports the decision. DM apparatus can give the answers of many business questions. These business questions are generally time consuming to determine. They scour records of database for concealed patterns [2] and also find analytical information.

Data Warehousing (DW)

A record of dataset of takes many files that are used to be stored in a computer. Dataset records are generally not stored in individual computers of employees in big organizations .This central system generally takes one or more computer servers of a service over a network .It provides many services. Server is frequently located control access within a room .Only authorized personnel can get physical access to server.

Apriori

The breadth-first search as well as a Hash tree structure is used by Apriori for counting sets of candidate item competently. Apriori formulates candidate item sets which has length k from item sets of length k – 1. The candidates are pruned after this. It has an irregular sub pattern. In accordance with the downward closure lemma, the candidate set carries all frequent item sets having k -length. Afterwards, it examines the dealing database to decide recurrent item sets

between the candidates. Here is given the fake code for the algorithm. It is for the transaction database T. it provides a support threshold of ϵ . The general set theoretic notation has been used here. Although T is a multi-set. The candidate set for level k is C_k . At every step, the algorithm is thought to produce the candidate sets. It has been done from the huge item sets of previous level. It pays attention to downward closure lemma. $c_{out}[c]$ controls a sector of data framework. It shows candidate set c. In beginning the set c was zero.

Biotechnology

In the present world biopharmaceutical business is expanding with an unexpected speed. Technology associated with data mining is occupied in this business. As a result a lot of biological information is extracted in different pattern. This information can be very useful for biopharmaceutical business. Data mining utilizes the technology which is known as machine learning. Uniform and visualization technique are adopted to explore and represent knowledge in a structure. This knowledge is in the form which is adoptable by humans. To decrease complication is the main aim. In addition to this other aims which are achieved is extraction of appropriate and useful information from a record of huge data. It is crucial to separate data mining from bioinformatics in the field of biopharmaceutical. In bioinformatics the main concentration is given to pattern based squeezing of specific pattern.

Clustering

Clustering has been considered as a valuable in order check information that is not similar.

[2]LITERATURE REVIEW:

There are several researches in this field of data mining in bioinformatics. Main focus is on the association rule mining of biological data for which there is a limited literature available. In which some researchers have been given below:

Muhammad Husain Zafaret. al. [1] proposed a clustering based study of classification algorithms. Objects related to data are alliance in a way. Similar objects are placed in the same group and dissimilar are placed in to another groups. For the evaluation of data a bundle of algorithm are offered .The basic objective of this paper is to study and evaluate the bundle of algorithm. These algorithms have K-Means, Farthest First, DBSCAN, CURE, Chameleon algorithm.

Ashish Duttet. al. [2] wrote on clustering algorithms applied in educational data mining. There are very few universities in all over the world by which specific educational courses are make available fifty years back. In the present scenario a large amount of graduates, as well as data are generating by Universities from their systems. Therefore it is matter of concern that what type of strategic is used by higher educational institution in order to exploit power of this educational data for its use. Response to this question is given in this article. With the help of various DM approaches it is possible to effectively fabricate a Data system that could learn from data.

T. SoniMadhulathaet. al. [3] discussed an overview on clustering methods. Avery familiar method for the examination of statistical data analysis is Clustering. Machine learning, information mining, pattern detection, graphic examination and bioinformatics are the area where this method is use .It is method in which similar objects are placed into different groups or in other words we can said that, breaking of a data set into subsets.. Advantages and applications of clustering algorithms are enclosed in this article.

A. Dharmarajan et. al. [4] explained the lung cancer data analysis. They used k-means and farthest first clustering algorithms. The main intention behind this effort is to pay attention on decent cluster formation of lung cancer information. In addition to this they also examine the efficiency of partition related algorithms. Doctors are able to recognize stages of lung cancer with the help of this research work. It also helps in the growth of medical care. It has been considered very convenient. It is employed to shun not necessary biopsy.

D. Asir Antony Gnana Singh et. al. [5] did research on performance analysis on clustering approaches. It is used for gene expression information. A method which is used for the examination of structures from an assortment of unlabeled gene expression data is Clustering. In order to resolve the problem associated with clustering gene expression data large quantity of algorithms are offered. It is essential that the problems which are invented because of unsupervised learning is solved. A performance analysis on K-means, expectation maximization, and density based clustering are presented in this article. They all are clustering algorithm. This performance analysis is carried out so that we are able to recognize the best clustering algorithm for microarray data. For the performance analysis of these clustering methods procedures like Sum of squared error, log likelihood is utilized.

Vishal Shrivastava et. al. [6] made a study on a topic. This title was related to several clustering algorithms. These algorithms are used on retail sales data nil of computing. Secret information from databases can be pulled out with the help of a process which is known as Data mining. One of the most significant usefulness of DM is Clustering It has been considered an adaptive method. In this method, the objects are grouped together. It has been done on the base of principle of optimizing inside class similarity. It also considers the minimization of class-class resemblance. Several clustering algorithms are formulated. These result in a better job on datasets. These are used for clustering.

Atul Kumar Pandey et. al. [7] discussed the data mining clustering mechanisms. These are used to predict the heart disease. They used attribute selection way for this purpose.

From the last 10 years Heart disease is considered as a basic reason of death in all over the world. The potential of clustering algorithm using heart disease data is put forward by the writer in this article. This article has evaluates the efficiency of clustering algorithms. Clustering algorithms may be of EM, Cobweb, Make Density Based Clusters.

Bhoj Raj Sharma et. al. [8] wrote on clustering algorithms. The review and performance evaluation of clustering algorithms which is carried out by using WEKA tool is put forward in this article. Clustering has been determined an adaptive method. In this method the objects are grouped together. This has been done on the base of principle of optimizing inside class similarity. It also considered the minimizing class-class resemblance. Evaluation of different clustering algorithms is carried out. After that their performance are differentiation the basis of time taken to build model, Epsilon, mints.

Shweta Srivastava et. al. [9] presented the clustering techniques analysis for microarray data international. Microarray data is gene expression data which consists of protein level of various genes for some samples. It is a high dimensional data. High dimensionality is a curse for analysis of gene expression data. Thus gene selection process is used in which most informative genes are selected from pool of gene expression data set. All genes are not relevant in each case. First we need to select those genes which are relevant as well as there should be least redundancy among them. For this purpose various approaches could be used such as:

Filter methods, wrapper methods, embedded approach and clustering. In this paper embedded approach for gene selection and clustering method would be used for performing sample clustering to refine classification.

Kalyani M Ravalet. al. [10] discussed the data mining techniques. Secret information from databases can be pulled out with the help of a process which is known as Data mining. This information can be used to make crucial business decisions Simoudis(1996). A procedure which is put in to any type of data ranging from weather forecasting, electric load prediction etc. is known as DM In other words DM can also be defined as computer-aid process that residence and studymassive sets of data and after that extracting knowledge or data out of it. In a very simple way they can define DM which automatically detect of relevant patterns in database.

V.Ramesh, et. al. [11] described the performance analysis of DM techniques. It has been done to place chance prediction. Estimation of a student potential for education managements is very important. The main objective of this article is to look in to precision of DM techniques in this type of surroundings. In the primary step student's data is assembled. A record of 300 Under Graduate students of computer science course is gathered by the writer. They were from private Educational Institution. In the next step data is cleaned up and choose appropriate attributes are selected. After that, Naïve Bayes Simple, Multilayer Perception, SMO, J48, REP Tree algorithms were fabricated and their potential were evaluated. From the Study it is found that that Multi-Layer Perception is more precise in comparison to other algorithms.

Neelamadhab Padhyet. al. [12] Did Survey of Data Mining Applications and Future Scope. Different application of DM is studied in brief in this article. This study would be useful for researchers in order to concentrate on different concerns associated with data mining. In upcoming course, different classification algorithms are checked by them. In addition to this they also study the importance of evolutionary computing concept. This concept is used to design the efficient classification algorithms. These algorithms are used for data mining. An assortment of data types are utilized in earlier studies on DM applications in various fields range from text to images and stores in mixture of databases and data structures.

David Jensenet. al. [13] stated the data mining in social networks. It has been developed In recent times the researchers offered a number of techniques for the knowledge of statistical models in machine learning and data mining. It is vital that all of these mechanisms must works with a same set of representational and algorithmic selection. It must count a group of statistical challenges. These challenges are faced at the time of learning from relational information.

All the effort which has been done in the recent time in machine learning and DM proves to be a remarkable step in the direction of learning models of relational data. However the examination done in other areas is efficiently utilized for all this effort, the example of social network analysis and statistics can be given. Efforts of Cross-disciplinary and efforts of joint research should be encouraged to support quick expansion. It will also support to propagation of algorithms as well as representations of data. The paper is concentrating on exclusive statistical issues. These issues are appeared by relational data.

Nikita Jainet. al. [14] wrote on techniques. A review paper is put forward by them. In this paper, the perception of DM was outlined in this article. Its importance towards its methodologies was illustrated. Specific examination of DM related to Neural Network and

Genetic Algorithm is done in this paper. All the important skill and method by which we are able to accomplish DM are also considered. They also direct a formal review of area of rule extraction. This area of rule extraction is from ANN and GA. In the present situation DM is considered as afresh and significant topic of research. For the resolution of concerns associated with DM, ANN is considered very appropriate.

AartiSharma et. al. [15] proposed application of data mining. Secret information from databases can be pulled out with the help of a process which is known as Data mining. Waste data is transformed into useful data with the help of data mining in various research fields. It supports in checking patterns. It has been done in order to make sure the future fashion in medical sector. Data mining process is also known as “decision support” process because in this we look for arrangement of data in data. DM techniques are like organization, clustering, calculation, association and chronological arrangement etc

M. Durairajet. al.[16] discussed the data mining applications in healthcare sector. A survey associated with the healthcare sector is put forward by them. Their main objective in this article is to provide a comparison between different techniques, methods and equipment and how they influence healthcare sector. The main objective of DM application is to transform that data in to facts, figures, or wording which could be processed by a computer into knowledge or data. The expansion of automatic instrument by which significant healthcare data is recognized and circulate is the foremost principle of DM application in healthcare systems. The major theme of the article is to do a comprehensive examination of report of several types of DM applications in healthcare sector in order to decrease difficulty of study of healthcare data transactions.

Ashish C. Patel et. al. [17] did research on privacy preserving association rules. They did this for unsecured distributed environment using cryptography. In this review, they explained the algorithm to mine organization rule with the use of elliptic curve cryptography mechanism on horizontally present data. They have mentioned not secured shared setting. Their planned algorithm gave us the safety without including any party and interloper. it also offer us the verification between the parties who are including. Finally they evaluate the privacy and security offered by their presented algorithm.

AzzeddineDahbiet. al. [18] presented an innovative technique. This technique is useful to rank the association rules. This method works with several criteria related to dominance relation. Data mining has been considered the procedure of getting the interesting data of patterns from large databases. The association rule mining has been considered a vital data mining jobs. It is also well-researched. Its objective is to search the interesting correlation along with relations between groups of items in the transaction databases. There are a number of issues having relevance with innovation of these associations. Its objective is to get a good cooperation having no favor or without excluding any measures. It is occurred by using a value to each rule that allows arranging them in ranks. The experimentation executed on benchmark datasets. It indicates a vital presentation of the presented approach.

SheetalBisht et. al. [19] reviewed the remotely sensed data of yellow rust disease. The proposed work is with the expansion of computer intelligent system. It has been done to capture the wheat yield losses. These losses are caused because of stripe rust. It applies well develop Apriori algorithm to take out spatial association rules from spatial databases. That supports the decision support system. This system is for wheat crop yellow rust disease arrangement. The objective of this concept is to get interesting frequent patterns and spatial associations.

Zhao Hui et. al. [20] wrote on fault diagnosis of industrial boiler. It is related to competitive agglomeration and fuzzy association rules. A review of the calculable parameters is put forward in this paper by means of data mining algorithm to the association. In general the work which is carried out by them is as follows. According to the allotment of the parameters that are calculated competitive agglomeration clustering algorithm is utilized in order to break up the fuzzy interval of every attribute. It relies on the theory of association rules. In order to find out the link among the measurable parameters and the fault an algorithm is put forward by them. The algorithm which is presented is logical and genuine.

Dong-Lai Maet. al. [21] wrote on establishing knowledge. It is related to expert system along with association rules. It is found that expert system and data mining both have a connection with Artificial Intelligence sectors. It is observed that association rule is a way of data mining. Its special application is evaluating the shopping basket in supermarket. The basic job of association rule is to search the valuable relation among every data item. The prominent rule of database is excavated by them by changing the Apriori arithmetic and the technique of the formulating rules. It is utilized in expert system.

Kun-Ming Yuet. al. [22] discussed an efficient frequent patterns mining algorithm .these algorithm is related to map reduce framework. In Recent, the data gathered from occupations are incessantly progressing in all enterprises. In the present condition Big Data and Cloud Computing with Data Mining have developed into hot topics. One of the vital concerns is how important data is achieved quickly from these data.

Che-Yu Lin et. al. [23] proposed an open candidate slicing frequent pattern mining algorithm. These algorithms are used on graphic processing units. In data mining frequent pattern mining (FPM) is considered to be very significant. Apriori algorithm is considered as one of the generally used approaches to resolve it. On the other hand, there is problem with Apriori algorithm that the computation time is directly proportional to the data size. It means with the increment in data size the computation time also increases. A lot of parallel algorithms have been put forward in order to speed up the computation with the use of computer clusters or grid architecture.

Ashish Shahet. al. [24] presented association rule mining with modified Apriori algorithm. The top down method is utilized by them. Secret information from databases can be pulled out with the help of a process which is known as Data mining. In the present scenario the hourly inspection of data is necessary because data has formulated as the inherent need of humanity. Removal of item sets has been considered the most significant part of association rule mining. These are frequent. One of the commonly used methods for the examination of combinations of item sets is Apriori algorithm. It is noticed that whenever the length of any of these frequent item sets is increased, the algorithm needs to pass through much iteration. Due to this the performance is considerably decreases.

ShyamDiwakaret. al. [25] discussed the role of ICT-enabled virtual laboratories. This topic is related to Biotechnology education. They did review on blended with remote learning. For visual education, virtual labs are considered as a very commonly known tool. It provide diverse analysis of experiments by several elements for example graphics mediated animations etc.

[3] ASSOCIATION

Association [12] (or relation) has a great popularity. Association is most common and straightforward DM method. At this time, a simple correlation can be made among two or more

items, frequently of similar kind. The objective is to classify the patterns. When A customer buy strawberries then always purchases cream. Therefore it suggests that second time then they will purchase strawberries. At this time, they can also like to purchase cream.

Building connotation or relation-based DM tools may be getting normally with several tools. as, within Info Sphere Warehouse there is a wizard. It allows the setting of an info flow .It is used in association by observing your dataset record input source and decision basis, and information of output.

Association rule [13] mining has been determined a system. It is used to get frequent patterns, correlations from data sets. It also used for associations or to find causal systems. These systems are get from data sets. It is originated in several types of databases. For example the transactional databases, relational databases. Other forms of data repositories are also the example of databases.

Association analysis is employed this asset to gain competitive advantage and all about uncovering data relationships. It is a medium to discover relationships in big data sets. Data relationships which are hidden will be expressed as a collection of association rules and frequent item sets with analysis of association.

[4] PURPOSE OF ASSOCIATION RULES [14]

The item will be consequent which is got in grouping with antecedent. The rules of Association are produced by examining data for repeated patterns of if/then. It uses a criterion for the support and has confidence for recognizing the most vital relationships. The support indicates that how many times the items are seen in the database.

[5] PROTEIN SEQUENCING

The practical procedure of deciding the sequence of amino acid of total or a fraction of a protein or peptide is called Protein sequencing it can give out to recognize the protein & also distinguish the post-translational changes of. Traditionally, fraction sequencing of protein gives enough data to know about it. it have the reference to databases related to sequences of protein. These have come from theoretical conversion of genes.

[6] BIOTECHNOLOGY

The definition of Data mining has been given as “the nontrivial withdrawal of implicit information which is previously unknown. It may be potentially useful information by data”. Data mining is a big industry, in the areas in spite of the life sciences and healthcare. Here a enormous array of software products is provided by more than a hundred companies. These companies are giving services to clients who get, produce, and rely on huge quantities of data. All the industries that depend daily on data mining for many functions involve manufacturing, marketing, providers of database , government. It also include the travel industry, banking and the financial industry, telecommunications, and engineering between others. The universal theme says about these industries that they all have really huge amounts of information. This information tells about their operations and also explains about their clients. The mode of collection is in a variety of ways.

[7]ROLE OF ASSOCIATION IN RESEARCH

To mark complete metabolic information of child at the time of birth is a very well known open fitness program. It is running at national as well as international level. The main advantage is

that, it will give knowledge of any exceptional hereditary conditions, if present in early stages. Therefore the chances of better treatment are feasible. In case if knowledge regarding this disorders is known, it may cause lifelong morbidities or death. Now a day substances are available in the market for regular monitoring of overall physical condition in the NICU. Glucose, blood gas values and electrolytes, the extent of analysis with tandem mass spectrometry employed for infant screening programs is excluded from NICU.

[8] SCOPE OF RESEARCH

In the data mining, the organization rules have been found helpful during analyzing as well as forecasting behavior of data. Research might play significant part in the shopping basket of data analysis as well as clustering of product. This work might be useful for designing of catalog and store design. The rules of association will be used by Programmers for making the code capable for learning of machine. Machine learning can be considered as a type of artificial intelligence. It is seeking for building codes. It has ability to become more competent without being programmed clearly. Some of the major applications of mining of association rule are cross marketing basket data analysis, Catalog design.

Reference

1. Muhammad Husain Zafar. A Clustering Based Study of Classification Algorithms. International Journal of Database Theory and Application Vol.8, No.1 (2015), pp.11-22.
2. Ashish Dutt. Clustering Algorithms Applied in Educational Data Mining. International Journal of Information and Electronics Engineering, Vol. 5, No. 2, March 2015.
3. T. SoniMadhulatha. AN OVERVIEW ON CLUSTERING METHODS. IOSR Journal of Engineering Apr. 2012, Vol. 2(4) pp: 719-725.
4. A. Dharmarajan. Lung Cancer Data Analysis by k-means and Farthest First Clustering Algorithms. Indian Journal of Science and Technology, Vol 8(15), DOI: 10.17485/ijst/2015/v8i15/73329, July 2015.
5. D. Asir Antony Gnana Singh. Performance Analysis on Clustering Approaches for Gene Expression Data. International Journal of Advanced Research in Computer and Communication Engineering Vol. 5, Issue 2, February 2016 .
6. Vishal Shrivastava. A Study of Various Clustering Algorithms on Retail Sales Data.
7. Atul Kumar Pandey. Data Mining Clustering Techniques in Prediction of Heart Disease using Attribute Selection Method. International Journal of Science, Engineering and Technology Research (IJSETR) Volume 2, Issue 10, October 2013.
8. Bhoj Raj Sharma. Clustering Algorithms: Study and Performance Evaluation Using Weka Tool. International Journal of Current Engineering and Technology ISSN 2277 - 4106 © 2013.
9. Shweta Srivastava. Clustering Techniques Analysis for Microarray Data. International Journal of Computer Science and Mobile Computing A Monthly Journal of Computer Science and Information Technology IJCSMC, Vol. 3, Issue. 5, May 2014
10. Kalyani M Raval. Data Mining Techniques
11. V.Ramesh, P.Parkavi, P.Yasodha. Performance Analysis of DM Techniques for Placement Chance Prediction .

12. Neelamadhab Padhy1, Dr.Pragnyaban Mishra .Survey of Data Mining Applications and Feature Scope .June 2012.
13. David Jensen and Jennifer Neville. Data Mining in Social Networks.
14. Nikita Jain1, Vishal Srivastava. DM TECHNIQUES: A SURVEY PAPER.Nov 2013.
15. Aarti Sharma, Rahul Sharma,Vivek Kr. Sharma,VishalShrivatava. Application of Data Mining – A Survey Paper.2014.
16. M. Durairaj, V. Ranjani. Data Mining Applications In Healthcare Sector: A Study . OCTOBER 2013.
17. Ashish C. Patel ,UdaiPratap Rao ,Dhiren R. Patel.Privacy preserving association rules in unsecured distributed environment using cryptography.2012. Third International Conference on Computing, Communication and Networking Technologies.
18. AzzeddineDahbi,SihamJabri, Youssef Balouki,TaoufiqGadi. A new method for ranking association rules with multiple criteria based on dominance relation. 2016 IEEE/ACS 13th International Conference of Computer Systems and Applications (AICCSA).
19. SheetalBisht, S.D. Samantaray. Extracting spatial association rules in remotely sensed data of yellow rust disease in wheat crop at Udham Singh Nagar. 2015 1st International Conference on Next Generation Computing Technologies (NGCT).
20. Zhao Hui, Jiang Bi-bo, Zhao Zhuo-qun.Fault diagnosis of industrial boiler based on competitive agglomeration and fuzzy association rules.2010 International Conference on Computer, Mechatronics, Control and Electronic Engineering.
21. Dong-Lai Ma, Wen-Jing Zhang, Bin Dong, Peng Yang, Hai-Xia Lu. Establishing knowledge base of expert system with association rules. 2008 International Conference on Machine Learning and Cybernetics
22. Che-Yu Lin, Kun-Ming Yu, Wen Ouyang Jiayi Zhou. An OpenCL Candidate Slicing Frequent Pattern Mining algorithm on graphic processing units. 2011 IEEE International Conference on Systems, Man, and Cybernetics.
23. Yun-lei Cai, Duo Ji ,Dong-fengCain.A KNN Research Paper Classification Method Based on Shared Nearest Neighbor.Natural Language Processing Research Laboratory, Shenyang Institute of Aeronautical Engineering, Shenyang, China, 110034,Proceedings of NTCIR-8 Workshop Meeting June 2013.
24. Ashish Shah. Association rule mining with modified apriori algorithm using top down approach. 2016 2nd International Conference on Applied and Theoretical Computing and Communication Technology (iCATccT).
25. ShyamDiwakar,Dhanush Kumar,RakhiRadhamani,NijinNizar,BipinNair,HemalathaSasidharakur. Role of ICT-enabled virtual laboratories in biotechnology education: Case studies on blended and remote learning. International Conference on Interactive Collaborative Learning (ICL)2015.

IMPORTANCE OF WORKING CAPITAL FOR A BUSINESS

Gorav Bansal

Assistant professor of commerce at Govt.pg.college, jind

ABSTRACT

Role of working capital for a business is very critical as it is considered as an essential component of the financial management of a business. In working capital, a correlation between the short term investments and activities related to the finance is observed. Also, the measurement of the liquidity of a business can be performed easily with the help of the working capital.

Also, the management of the corporate finance can be done in terms of the working capital. In the practices, related to the working capital of a business, the process of the decrement of the associated risk factors is performed by taking sufficient actions. Here, the current assets and liabilities are monitored and managed under the management of the working capital. The current paper highlights the need of the working capital for a business.

KEYWORDS:

Working, Capital, Business, Management, Financial

INTRODUCTION

The margin of profit of a business can be effectively enhanced by the proper management of the working capital. There should be proper maintenance of assets and liabilities and a balance should be there between these two so that a business can gain profit.

The role of the liquidity of an organization plays an important role in the attainability of its working capital. The financial flow of a business should be investigated within a specified time interval so that the estimation of current assets and liabilities can be performed to control all the financial activities.

After the evaluation process, if it is observed that the current liabilities of a business are higher than that of the current assets then a decrement in the growth of the business is observed. On the other hand, a business tends to grow if the level of the current assets is more than that of the liabilities.

Proper working capital policies are needed to be implemented in a business so that more and more profit can be gained. Fund flow also plays a significant role for a business. Cash receipts are supposed to be good indicators of the growth of a business.

In some cases, it is observed that a business tends to move downward due to improper implementation of the financial management. In a business, the control over the risk factors is done with the help of two methods i.e. diversification and proper engagement of the financial transactions.

In diversification technique, all the policies finalized by the top management of a business are implemented effectively so as to minimize the effect of risk factors. In another technique, the financial practices related to all kinds of transactions are managed properly.

Diversification also relates with the earnings and volatility level of the financial market. The reduction in the volatility is done through the direct investment method so that the overall growth of the organization can be improved.

In case of the derivative markets, the implementation of the financial practices is accomplished with the aid of the effective strategies. It is reported that exchange trade is promoted by some essential components of an organization to enhance the brand image.

A number of practices are followed by a business so that the probability of the risk factors can be lowered down. For this purpose, some organizations use the financial derivatives which are generally used to control the risk factors.

The volatility of cash flow plays a crucial role in the financial cost of a business as the financial cost tends to increase on minimizing the expected cash flow. Hence, it can be said that both of these factors are indirectly proportional to each other.

IMPORTANCE OF WORKING CAPITAL FOR A BUSINESS

All the practices related to the risk management can be controlled easily with the help of the set-up cost. In some organizations, the hedging process is not exposed in terms of the financial risks. The practices related to the hedging are generally followed by the large-sized organizations whereas small-sized organizations rarely implement the exercises related to the hedging.

Working capital management generally involves the practices such as working capital ratio, collection ratio and inventory turnover ratio etc. The operating cycle of a business can be run without any interruption with the help of proper functioning of the working capital management.

The activities like inventory management and account management are handled under the working capital management. The cost of the capital spent on the working capital is allowed to lower down by proper functioning of the operations in specified sequence. In this way, the return on the current asset investment tends to move upward.

The working capital ratio, calculated as current assets divided by current liabilities, is considered a key indicator of a company's fundamental financial health since it indicates the company's ability to successfully meet all of its short-term financial obligations. Although numbers vary by industry, a working capital ratio below 1.0 is generally indicative of a company having trouble meeting its short-term obligations. Working capital ratios of 1.2 to 2.0 are considered desirable, but a ratio higher than 2.0 may indicate a company is not effectively using its assets to increase revenues.

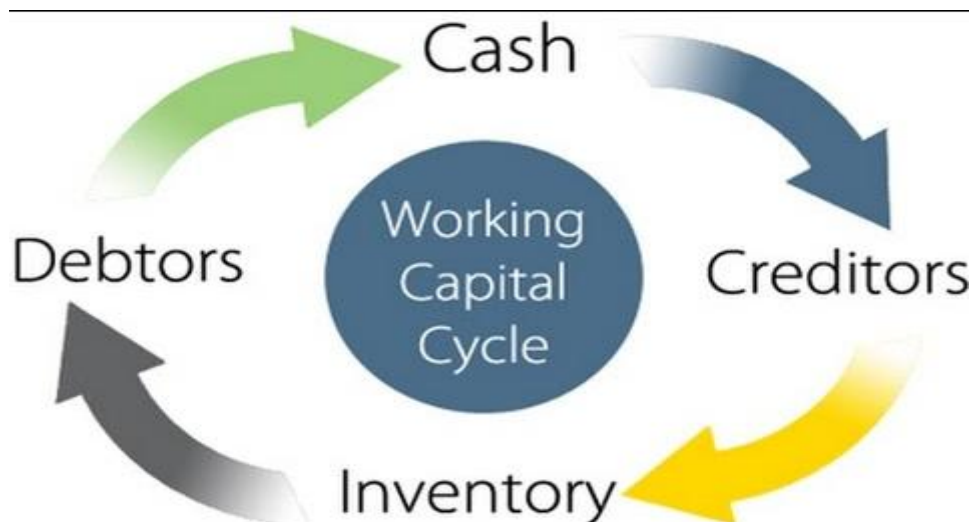


Figure 1: Working Capital Cycle

The collection ratio, also known as the average collection period ratio, is a principal measure of how efficiently a company manages its accounts receivables. The collection ratio is calculated as the product of the number of days in an accounting period multiplied by the average amount of outstanding accounts receivables divided by the total amount of net credit sales during the accounting period. The collection ratio calculation provides the average number of days it takes a company to receive payment. The lower a company's collection ratio, the more efficient its cash flow.

The final element of working capital management is inventory management. To operate with maximum efficiency and maintain a comfortably high level of working capital, a company must carefully balance sufficient inventory on hand to meet customers' needs while avoiding unnecessary inventory that ties up working capital for a long period before it is converted into cash. Companies typically measure how efficiently that balance is maintained by monitoring the inventory turnover ratio. The inventory turnover ratio, calculated as revenues divided by inventory cost, reveals how rapidly a company's inventory is being sold and replenished. A relatively low ratio compared to industry peers indicates inventory levels are excessively high, while a relatively high ratio indicates the efficiency of inventory ordering can be improved.

The importance of working capital management is undisputable. Working Capital is the difference between resources in cash or readily convertible into cash (Current Assets) and organization commitments for which cash will soon be required (Current Liabilities). The objective of the working capital management is to maintain the optimum balance of each of the working capital components.

Viability of the business is depended on how well the individual components of working capital vis. Receivables, Payables and Inventory are managed. Firms would be able to reduce financing costs or increase the funds available for project financing, expansion etc. by reducing the amount of funds tied up in current assets.

Working capital improvements become all the more important during times of falling demand and restricted credit markets. When working capital management becomes top-of-mind, the question arises as to whether any changes being made are going to be sustainable. The companies are adopting several ways to improve working capital management. Some companies become very near-sighted during volatile times and aim only to harvest the low hanging fruit while some have taken the next step of building a solid foundation for a sustainable working capital.

Working capital is a daily necessity for businesses, as they require a regular amount of cash to make routine payments, cover unexpected costs, and purchase basic materials used in the production of goods. Working capital is an easily understandable concept, as it is linked to an individual's cost of living and, thus, can be understood in a more personal way. Individuals need to collect the money that they are owed and maintain a certain amount on a daily basis to cover day-to-day expenses, bills and other regular expenditures.

Working capital is a prevalent metric for the efficiency, liquidity and overall health of a company. It is a reflection of the results of various company activities, including revenue collection, debt management, inventory management and payments to suppliers. This is because it includes inventory, accounts payable and receivable, cash, portions of debt due within the period of a year and other short-term accounts.

The needs for working capital vary from industry to industry, and they can even vary among similar companies. This is due to several factors, including differences in collection and payment policies, the timing of asset purchases, the likelihood of a company writing off some

of its past-due accounts receivable, and in some instances, capital-raising efforts a company is undertaking.

DISCUSSION

Working capital is the difference between the total number of assets and the total number of liabilities in a company. This amount is spent on executing day-to-day operations in a business. As a result, it is used as an index to measure the health of a company. Enterprises with high working capital are often strong businesses.

Responsible financial management may help companies secure higher levels of working capital. On the contrary, poor management of capital could result in the following issues:

- **Bankruptcy risk:** In the case of negative working capital, SMEs use money received from creditors to finance business operations. Businesses run the risk of bankruptcy due to the lack of sufficient income to counterbalance the expenditure.
- **Lack of investment opportunities:** Investors are less likely to consider companies which regularly have low or negative working capital. This demonstrates that the company is not being run effectively.
- **Missed growth opportunities:** With large amounts of positive working capital, businesses will have money to spend on pursuing growth. With negative or low working capital, businesses may find it difficult to capitalize on investment opportunities. Low working capital could have stifling effects on the ambitions of any businessman.
- **Trade discounts:** Many suppliers will offer substantial discounts if they are paid on time. Low or negative working capital can make it difficult to meet payment obligations which, effectively, increases the cost of inventory.

Working capital is the life blood and nerve center of business. Working capital is very essential to maintain smooth running of a business. No business can run successfully without an adequate amount of working capital. The main advantages or importance of working capital are as follows:

1. Strengthen The Solvency

Working capital helps to operate the business smoothly without any financial problem for making the payment of short-term liabilities. Purchase of raw materials and payment of salary, wages and overhead can be made without any delay. Adequate working capital helps in maintaining solvency of the business by providing uninterrupted flow of production.

2. Enhance Goodwill

Sufficient working capital enables a business concern to make prompt payments and hence helps in creating and maintaining goodwill. Goodwill is enhanced because all current liabilities and operating expenses are paid on time.

3. Easy Obtaining Loan

A firm having adequate working capital, high solvency and good credit rating can arrange loans from banks and financial institutions in easy and favorable terms.

4. Regular Supply Of Raw Material

Quick payment of credit purchase of raw materials ensures the regular supply of raw materials from suppliers. Suppliers are satisfied by the payment on time. It ensures regular supply of raw materials and continuous production.

5. Smooth Business Operation

Working capital is really a life blood of any business organization which maintains the firm in well condition. Any day to day financial requirement can be met without any shortage of fund. All expenses and current liabilities are paid on time.

6. Ability to Face Crisis

Adequate working capital enables a firm to face business crisis in emergencies such as depression.

When a company does not have enough working capital to cover its obligations, financial insolvency can result and lead to legal troubles, liquidation of assets and potential bankruptcy. Thus, it is vital to all businesses to have adequate management of working capital.

Working capital management is essentially an accounting strategy with a focus on the maintenance of a sufficient balance between a company's current assets and liabilities. An effective working capital management system helps businesses not only cover their financial obligations but also boost their earnings.

Managing working capital means managing inventories, cash, accounts payable and accounts receivable. An efficient working capital management system often uses key performance ratios, such as the working capital ratio, the inventory turnover ratio and the collection ratio, to help identify areas that require focus in order to maintain liquidity and profitability.

CONCLUSION

Working capital management has an important role to play in the success of any business enterprise. Over 75% of companies that are running at loss or struggling financially would be profitable and liquid if were more disposed to the knowledge and practice of efficient working capital management. The working capital management system helps in ensuring that tied down capital that could otherwise be put to productive uses are released.

Many finance professionals and business experts often ignore the importance of this management. They usually do not go the extra mile in striving for optimum utilization of resources tied to working capital just because they only look at the work involved in carrying out proper working capital management exercise.

REFERENCES

1. Van Horne, J. C. and Wachowicz, J. M. (2014). *Fundamentals of Financial Management*, 13th ed. Pearson Education Limited, London.
2. Brigham, E.F. and Houston, J.F. 2013. *Fundamentals of Financial Management*, 10th ed. Cram101 Incorporate, United States of America.
3. Ross, S. A., Westfield, R. W. and Jordan, B.D. (2013). *Fundamentals of Corporate Finance*, 6th ed. McGraw-Hill, United States of America.
4. Koury, N.T., Smith, K.V. and MacKay, Peter I. (2012). *Comparing Working Capital Practices in Canada, the United States, and Australia*. Purdue CIBER Working Papers. Paper 132.
6. Nazir, M.S., Iqbal, U. and Akram, M.I. (2012). *Working Capital Management Practices of Non-Financial Firms in Pakistan*, American Journal of Scientific Research. Euro Journals Publishing. Inc Issue 78, pp.143-160.
7. Burns, Richard and Walker, Joe.(2011). *A Survey of Working Capital Policy among Small Manufacturing Firms*. Journal of Small Business Finance, 1(1), pp. 61-74.
8. M.Y.Khan / P.K Jain, *Financial Management Text, Problem's Cases*, 5TH Edition, Tata McGraw –Hill Publishing Company Limited, New Delhi, 2014.
9. Prasanna Chandra, *Financial Management Theory and Practice*, 5TH Edition, Tata McGraw –Hill Publishing Company Limited, New Delhi, 2011.

10. Gitman, L.J. (2014). Principles of Managerial Finance. Collins Publishers Inc. Harper. NewYork.
11. Lazaridis, I. and D. Tryfonidis, (2015). Relationship between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange. Journal of Financial Management and Analysis. 19 (1), 26 – 35.
12. Van Horne, J. C. and J. M. Wachowicz, (2010). Fundamentals of Financial Management. Eleventh edition, Prentice Hall Inc.

WHAT IS RUN TO FAILURE MAINTENANCE (RTF)? IS IT A GOOD APPROACH ON MAINTENANCE OPTIMIZATION?

Muhammed Shiyas.K.M

Present Address

P O Box No:24659, Doha, Qatar

Abstract:

Run to failure maintenance strategy is one of the simplest maintenance strategy, assets are deliberately allowed to operate until they break down, at which point corrective maintenance is performed. This strategy allows where maintenance is only performed when equipment has failed. Unlike unplanned maintenance, proper run-to-failure maintenance is a deliberate and considered strategy that is designed to minimize total maintenance costs. In many circumstances run-to-failure is a great maintenance strategy, in others it is terrible. This is an intentional strategy whereby no maintenance tasks are performed on an asset. The only "planned maintenance" on the asset is corrective maintenance after the asset has suffered a failure. In this paper we will discuss about run-to-fail maintenance and its applicability.

Keywords:RTF, Run to Failure, Asset Management, Maintenance.

Introduction

The simplest maintenance strategy in the maintenance and management system is to execute run to failure maintenance (also known as "run to fail"). In this strategy, assets are deliberately allowed to operate until they break down, at which point corrective maintenance is performed. No maintenance, including preventive maintenance, is performed on the asset up until the failure event. However, a plan is in place for ahead of the failure, so that the asset can be fixed without causing any further issues. Under the run to fail method, it is important to have spare parts and staff on hand to replace the failed part and to maintain equipment availability. This strategy should not be confused with any other maintenance, because of the active plan to allow the asset to run to failure. This strategy is useful for assets that pose no safety risks and have minimal effect on operation.

Literature Review

Preventive maintenance is very important of every assets owing by the organizations. It will help mainly to improve the performance and life of the assets also to avoid the asset failures. Run to failure maintenance also a part of maintenance plan which is applying relatively less critical assets. It will not be applicable for the highly Critical assets. The purpose is to objectively rank assets and form a collective agreement and analysis. The study based on Doha, Qatar and this paper outlines about run to failure maintenance and its applicability in the asset maintenance. We can call this simplest maintenance strategy as 'breakdown maintenance'. This is where assets are deliberately run until they fail. When failure occurs, corrective maintenance is performed to fix the asset and return it to full

operation. This approach is common when equipment failure doesn't significantly affect operations or productivity.

What is Run to Fail maintenance (RTF)?

Run to failure – also known as RTF – is considered to be an unplanned and, therefore, reactive form of maintenance but in reality, proper run-to-failure can really be a deliberate maintenance strategy that is designed to minimize the organizations maintenance costs. RTF is a credible maintenance strategy under certain circumstances. Run to failure is perhaps the most cost-effective of the maintenance strategies, and one that is fairly widely adopted by companies that have a have certain types of equipment or meet other criterias. Mainly infrastructure assets rather than machine-based entities, though it is a strategy that works with cheaper parts which are simply not worth repairing.

Run to failure is a maintenance strategy?

Run to failure is a maintenance strategy if the object of maintenance / reliability is ultimately to deliver value than part of that value is not wasting money by trying to prevent the unpreventable or spending more on preventing it than the cost when the failure occurs. It is not advisable spend INR 20,000 per year avoiding a failure that only costs INR 5,000 each occurrence and has a Mean time between failures of 5 years or more.

However, run to fail is unacceptable if failure consequences result in unacceptable safety or environmental or any other risks the organizations business. It is all about working at the failure mode level of any maintenance task associated with a failure mode should be justified not only by whether or not a task can be created (applicable) but also that it makes sense either in financial or risk management terms.

As per the above observations we can consider Run to failure is a maintenance strategy.

Run to Failure as a Maintenance Strategy



In the maintenance and reliability world every organizations spend much of their time thinking and planning out ways to better maintain or redesign some equipment to make it

last longer or be more reliable. The ultimate aim is to reduce the maintenance cost of their assets. However, there are situations where a reliable solution or maintenance plan is not cost effective and the recommendation will be to "run to failure" Maintenance Strategy.

It is not advisable to apply Run to Failure Maintenance Strategy on critical assets, if applies which may give negative results. It is required to identify by the organization that which type of assets can be mapped under the Run to Failure Maintenance Strategy. After the mapping the plan has to be evaluated to avoid future consequences. The plan should include everything that is required to make the failure event as painless as possible, including identification of the skills, tools, materials, emergency procedures, etc. necessary to correct the event.

A common example of run to failure maintenance is the maintenance plan for a general-purpose light bulb. The bulb is allowed to run until it fails. At this time, the plan to fix the asset is carried out. A new light bulb is obtained from stocks and replaced at a convenient time.

Applicability of the Run to failure is a maintenance strategy

This is a very common approach to the maintenance of components which have the following Applicability:

No Maintenance is feasible: -According to the manufacture instruction if an asset doesn't require any routine maintenance or the asset doesn't have provision to perform the routine maintenance due to various reason. If preventative maintenance is too difficult to perform, then this too could be a reason to choose a run-to-failure maintenance option. Perhaps the equipment is too difficult to reach because of its height, or perhaps it is in a confined space or at a remote location. These are all reasons why run-to-failure may be considered to be the best maintenance type until easier access the equipment can be designed and installed.

Short Life Asset: - Sometimes short life assets.

Disposable Assets: - Assets with disposable parts.

Low-Materiality Assets: - Small assets without significant financial value, low capitalization assets.

Non-Critical Assets: - Assets that are not critical or are inconsequential.

Probability of failure: -Some equipment types fail more often with increasing age this could result from wear and tear. Other assets fail more often when they are new this could be due to manufacturing defects or incorrect installation. There are mainly two different types of equipment failure patterns,

- 1)Increasing failure probability
- 2)Decreasing failure probability

Durable Assets: - Assets that are not subject to wear or assets that are unlikely to fail.

Redundant Assets: - Redundant assets as per the organizations policy.

Assets that exhibit Random Failure Patterns: - Some assets have random failure patterns that cannot be easily anticipated. These assets are stochastic in nature in that their behaviour is non-deterministic, sporadic and random.

Non-Maintainable Assets: - Some assets are unmaintainable or can be allowed to run to failure with minimal risk to the owner.

Discretionary Maintenance: - Assets that are not subject to statutory maintenance requirements.

Assets with a low utilization index: - Asset utilization index.

Low equipment criticality: - Equipment that has a low criticality could also be considered for run-to-failure maintenance. In the lightbulb scenario, on the factory roof, for example, will not cause a threat to life, nor have a significant impact on company profits. This lightbulb could, therefore, be subject to a run-to-failure maintenance regime. But the same time it may can affect the reputation of the company then it will not be advisable. Other words, it may depend up on the nature of business engaged by the organizations.

The cost of preventative maintenance: -Run-to-failure may be a great option when it is just too expensive to perform preventative maintenance. If the subject matter expert's analysis shows that the total cost of doing preventative maintenance is more than the total cost of doing run-to-failure maintenance, then this would be a valid reason to adopt run-to-failure as a strategy. Prior to select cost as a reason for using run-to failure, make sure the subject matter experts include all of the costs in the run-to-failure analysis.

It can be observed that some of these criteria make run to failure an obvious choice; there is no reason whatsoever to routinely replace light bulbs – unless it is a safety or any other matter related to the organization business. In most of instances, replacement once they have failed is the best policy. This kind of maintenance program is a perfectly reasonable method of dealing with the sorts of assets stated above but it should not be confused with have no maintenance policy at all. However, having a run to failure maintenance policy isn't perhaps as easy at it may sound, since many parts of maintenance schedule don't fail abruptly and some degree of discretion is required. The lightbulb scenario is credible because a lightbulb is either on or off, and its failure is obvious, but the same cannot be said for other infrastructure elements and equipment.

Advantages and Disadvantages of Run to failure maintenance strategy

Conducting effective maintenance on equipment is essential, whether a company is big or small and irrespective of what industry you work in. But do they should know what the right maintenance strategies are applicable for their assets. Run to failure maintenance is a maintenance activity carried out after a failure has occurred and aims to restore a broken asset or device to full working condition either by repairing it, or in the event that it cannot be fixed, by replacing it.

Advantages

Lower short-term costs: Due to its reactive nature, there are very few costs involved until something goes wrong. If everything remains functional, doesn't pay anything.

Minimal planning required: Since maintenance does not need to be scheduled in advance, the planning requirements are very low. Maintenance only needs to happen after breakdown has occurred. Corrective/Preventive maintenance consists of very targeted action on specific components of installations or devices that are faulty. It requires very limited complex planning, in case of non-critical assets

Simpler process: The process is easy to understand, since only need to take action when some kind of problem occurs.

Best solution for non-critical assets: There will be times when the amount of time and money invested in preventive maintenance planning and strategy will be a lot more than the simple 'stop and repair costs' of corrective maintenance.

Easy to understand: Because of the plan's simplicity, this system is easy to understand and implement.

Appropriate applications for run to failure maintenance: Run to failure maintenance makes sense when the total cost of repairing equipment after breakdown is less than the cost of performing other types of maintenance on the equipment beforehand. Run to fail maintenance requires an understanding of how a machine might break and what the consequences of breakdown are. Run to failure would also be more appropriate for redundant, or non-critical assets.

Disadvantages

Unpredictability: Relying on corrective maintenance or a failure can be problematic if equipment is not monitored after purchase, leading to more failures which are highly unpredictable and whose cause is unknown. Because most asset failures are unpredictable, it is difficult to anticipate when manpower and parts will be needed for repairs.

Paused operations: Unexpected failures may be slowed down by not being able to access materials which may lead to increased periods of inactivity

Less Asset Life: This approach doesn't protect or look after equipment and therefore reduces the lifetime of the assets. It simply fixes the asset on a short-term basis.

Higher costs (Long Term): Corrective maintenance is applied when it is believed that the stop and repair costs in case of failure will be less than the investment required for planned maintenance. But this doesn't always happen. When a more serious failure occurs, it can be an extremely costly and slow process to fix the failure. Large periods of inactivity have negative effects on operations, reputation, client satisfaction, safety and on the ability to run a business efficiently and productively.

Inconsistent: The intermittent nature of failures means efficient planning of staff and resources can be difficult.

Expensive: All costs associated with this strategy need to be considered when it is implemented. These costs include production costs and breakdown costs, etc in addition to direct parts and labour costs associated with performing the maintenance.

Inventory costs: The maintenance team needs to hold spare parts in inventory, to accommodate for intermittent failures.

Inappropriate applications for run to failure maintenance: Run to failure maintenance is unsuitable for applications where equipment failure creates a safety risk (if it is critical) or where equipment availability is necessary. It is also undesirable for assets where total maintenance costs would be reduced with a more proactive approach to maintenance such as preventive or predictive maintenance strategies.

How to implement Run to Failure maintenance

Run to failure maintenance can be implemented using many maintenance methods. This strategy can be adequately managed. Other tools can also be used, including paper-based systems, spreadsheets, CMMS and EAM systems. If an entire facility is working on a run to failure strategy (such as a small home office), then CMMS and EAM systems will provide much more functionality than required. For facilities where run to failure is used for some assets and more complex strategies are used for other assets, the CMMS and EAM will allow these different types of maintenance strategies to happen simultaneously. A CMMS can also be useful to track the number of times the asset has been repaired or replaced and associated costs. A good run to failure maintenance strategy will likely require an inventory management tool because of the large number of spares that may be needed for breakdowns. In this situation an organizations senior leadership team can make a decision based on their requirements and business needs.

Conclusion

Many companies have recently implemented reliability initiatives geared toward optimizing the maintenance function on their assets. The best strategy would be having a maintenance program that incorporates all of the different approaches, with varying strategies for each type of equipment according to their value and priority. Run to failure is a perfectly valid maintenance strategy and plays a major role in the present asset management system. It should not be confused with unplanned and reactive maintenance. But when this planning and decision making has occurred, run-to-failure has the potential to be a money saver, and a useful tool in maintenance strategy toolkit. This maintenance strategy recommended on the low level or non-critical assets and not recommended on High level and high critical assets.

References

- 1) Run to failure maintenance-(<https://www.fiixsoftware.com/run-to-failure-maintenance/>)
- 2) Run to Failure (RTF)-(http://www.assetinsights.net/Glossary/G_Run_to_Failure.html)
- 3) Run to failure: make it part of your maintenance planning- (<https://www.fiixsoftware.com/blog/run-failure-make-part-maintenance-planning/>)
- 4) The pros and cons of different maintenance strategies- (<https://www.hansfordsensors.com/the-pros-and-cons-of-different-maintenance-strategies/>)
- 5) What is Run to Failure Maintenance? - (<https://onupkeep.com/blog/what-is-run-to-failure-maintenance/>)
- 6) What Are the Advantages and Disadvantages of Corrective Maintenance? - (<http://blog.infraspeak.com/advantages-and-disadvantages-corrective-maintenance/>)
- 7) Reactive vs Preventive vs Predictive Maintenance- (<https://www.viziya.com/resource/reactive-vs-preventive-vs-predictive-maintenance/>)
- 8)When Run to Failure is Not an Option: Developing a Proactive Preventive Maintenance Strategy-Minitab Inc
- 9)Understanding "Run To Fail" ---- Total Productive Maintenance, TPM, RCM, Lean- (<https://www.linkedin.com/pulse/understanding-run-fail-total-productive-maintenance-steve/>)
- 10)Run to Failure-(<http://www.je-bearing.com/news/run-failure/>)
- 11)Run to Failure Shouldn't be an Option: Preventive Maintenance and CMMS- (<https://www.nrx.com/preventive-maintenance/>)
- 12)Costofruntofailuremaintenance-(https://wilcoxon.com/wp-content/uploads/2016/07/TN_Cost-of-run-to-failure-maintenance.pdf)

ORGANIZED RETAIL SECTOR BOOM & THE INDIAN ECONOMY

Mr. Anil Kumar*

Assistant Professor- R.K.S.D College Kaithal

DrRavinder Kumar**

Alumni Department of Commerce KurukshetraKurukshetra University

I. INTRODUCTION

Retailing is currently the booming sector of the Indian economy. Indian retail sector is expected to grow tremendously in next few decades, attracting huge attention from all quarters of the economy- entrepreneurs, business heads, investors as well as real estate owners and builders. Retail sector is expected to create huge employment as it will expand across the country at a massive scale. The reasons for this expansion of retail is evidently related to the liberalization and opening up of the Indian economy which had immense effects on the consumer demand, tastes and preferences as well as the buying capacities of the Indian's (specially the growing middle class) over the past few years. Slowly and steadily retail has witnessed considerable growth while a new form of organised retail sector has emerged with in the retail industry.

II. INDIAN RETAIL SCENARIO

Retailing is a well recognized business function which compromises making available desired product in the desired quantity at the desired time. Retailing has been identified as a thrust area for the promotion of textiles, processed foods, agriculture and horticulture produces. The popular traditional form of retail has been the so-called 'unorganized' form of retailing mostly represented by local Kirana shops, road-side stalls, hand-cart and vendors on the pavement etc. Unorganized retailing is still the back bone of Indian retail industry contributing to over 91 per cent of total retail revenues. However with the opening up of the Indian economy since 1992 retail sector has gradually undergone considerable changes in its form. Though earlier mainly represented by the low-cost 'mom-and-pop' store format, retail today is emerging as a huge "industry". The major shift has been the emergence of an organized sector with in the retail industry. The organized retail sector constitutes trading activities undertaken by licensed retailers, that is, those who have registered themselves to sales as well as income tax. These include the corporate-backed hypermarkets and retail chains, and also the privately owned large retail businesses.

Retail Sector- a boom

Indian retail industry ranked fifth largest retail destination and second most attractive market for investment in the Globe in 2008-2009 and today **India is ranked first as reported by AT Kearney's Global Retail Development Index (GRDI) in 2009** across 31 emerging economies.

- Retail market in India is expected to grow from US \$ 359 billion to US \$ 428 billion by 2010 and it is estimated to touch US\$ 571 billion by 2012-13. This is due to the fact that the consumer spending is increasing continuously over the past few years. The organized retail sector is expected to grow from 5.5 per cent to about 8 to 9 per cent by 2012-13.
- Retail has traditionally been a major sector in India employing millions of people. Retailing currently contributes 11 per cent of India's GDP and 6.5 per cent of employment (Kalhan, 2008)
- In segmental growth of retail, food and beverages is the largest pie of total retail sales i.e. 74.45 per cent followed by 9.40 percent of clothing and textiles. The shares of consumer durables and jewellery & watches in Indian retail sector are 4.88 & 4.89 per cent respectively.
- The composition of organized retail market for the year 2006-07 show clothing and textiles as the largest segment i.e. 36 per cent followed by consumer durables 20 per cent and third in the rank is food and beverages i.e. 17.2 per cent.
- Apparel is one of the fastest growing verticals, with a high number of domestic and foreign brands, and increasing consumer willingness to pay for quality. Increasing disposable incomes and attitudinal shift in the lifestyle needs has pushed the segment.
- As per RBI, foreign direct investment is showing upward growth from US \$ 5 billion in 2002-03 to approximately US \$ 20 billion in 2006-07, out of which, US \$ 11.99 (60%) is invested in organized retail. FDI for retail developments is taking place by and large in sectors, namely clothing and textiles, consumer durables and food and beverage.
- As of 2008, the total numbers of large shopping malls in major metros in India were 218.44 and it is lead by the top three – Delhi, Mumbai and Bangalore. This number is fair enough to attract the overseas investors.
- Another latest research shows that retail space will grow from 91 million square feet in 2008 to 200 million square feet in 2010, and add to attractiveness of retail market.
- Due to the urban-rural divide, organised retail will grow in the metros and large cities, followed by semi-urban and rural areas. However, in the coming years a huge number of shopping malls are likely to emerge even in the medium and even small cities. Thus India is on the verge of an enormous multi-fold growth of organised retail. In brief, retailing in India is gradually inching its way toward becoming the next boom industry.

III. GROWTH DRIVERS OF ORGANISED RETAIL

The most important factors responsible for retail sector development in India are liberalization of the economy, upward mobility of middle class, shifting consumers demand patterns, and expansion of ICTs (A.T.Kearney Report, 2007). The attitudinal shift of the Indian consumers and the emergence of organised retail formats have transformed the face of retailing in India. The following are the key drivers of growth in Indian retail sector.

- **Higher disposable income:** The disposable income has been showing a rapid increase from the last few years and is expected to grow steadily because the proportion of the major consuming class (population having incomes higher than Rs 90,000) is expected to reach 49 per cent by 2009-11 from 21 per cent in 1996-97, at the 2001-02 prices.
- **Personal consumption as a percentage of GDP:** Personal consumption as a percentage of GDP in India is second only to Vietnam. Rapid growth of Indian economy will result in increase in personal consumption as a percentage of GDP. According to IMA, Asia, India had one of the highest personal consumption as a percentage of GDP at around 56% in 2007-08.
- **Growing working women population:** The propensity to spend in the case of working women is higher by 1.29 times as compared by housewives. According to the census report, the population of working women increased to 26.11 per cent in 2001 as compared to 22 per cent in 1991.
- **Adoption of nuclear family culture:** The increase in percapita income paved the way to increase the nuclear- family culture. The proportion of nuclear families as a percentage of total household population has increased which in turn, fuel the growth of organised retail.
- **Growth in urban population:** Indian retail sector is growing due to increase in urbanization. Urbanization has increased at a rate of 2.8 per cent over the last 10 years (1999-2000). This trend is likely to continue and urbanization is expected to grow at 2.5 per cent between 2000 and 2015.
- **Baby boomer effect:** The demographics of Indian population have a steep growth in earning population (15-60 yrs). In 2000, 593 million people (58.6 per cent of total population) constituted the age bracket of 15-59 yrs and the earning population is expected to increase to 62.9 percent in 2015.
- **Plastic money becoming a greater pie of credit:** The use of plastic money in the form of debit and credit cards has expanded multifold in last 5 years. The number of credit cards has grown at CAGR of 28 per cent and debit cards galloped by 141 per cent. The customers have adopted the habits of electronic payments and leveraging their pockets shifting from basic needs to lifestyle products.
- **Internet driving awareness and online purchases:** There has been a substantial increase in the number of Indians using the internet. Indians have started using internet not only for increasing awareness but also to shop online.
- **Attitudinal shift towards branded products:** Due to liberalization of the economy, various organised branded products have entered into Indian markets and widening the basket for branded products. With the advent of international competition, new trends and lifestyles are evolving among India masses resulting into 10-15 percent growth in branded products.

IV. ADVANTAGES TO THE INDIAN ECONOMY

Planning Commission of India, in its Approach Paper for the Eleventh Five Year Plan (2007-12) has noted: "Organized retailing brings many advantages to producers and also to urban consumers, while also providing employment of a higher quality. Organized retailing in agricultural produce can set up supply chains, give better prices to farmers for their produce and facilitate agro-processing industries. Modern retailing can bring in new technology and reduce consumer prices, thus stimulating demand and thereby providing more employment in production." The organized retail market boom expected to become one of the pillars to Indian economy.

➤ **Benefits to agriculture sector:** On the agricultural front, the organized retailing will work with farmers to improve yields by enabling them to obtain quality input supplies; adopt superior farm technology; and access timely credit at reasonable rates. Organized retailing will offer the farmer an alternative market which is more transparent, and less time consuming. Organized retailers have already started procuring fruits and vegetables from farmers directly bypassing middlemen who add more cost than value to food chain. All these will enhance farmer's realization, improve quality of products at the shop and reduce the ultimate consumer price.

➤ **Advantages to manufacturing sector:** The Planning Commission of India has identified four sectors viz. food processing industry; textiles and clothing; tourism; construction as the major employment generating sectors for the Eleventh Plan period. Except tourism, all these sectors are getting fillip with the growth of organized retail. Small and Medium Industry (SMI) sector will get a tremendous boost by producing for the big organized retail companies and will grow along with the organized retail business.

➤ **Improvement of Government revenues:** Another important advantage of organized retailing is its contribution to government revenues. Unorganized retailers normally do not pay taxes and most of them are not even registered for sale tax, VAT, or income tax. Organized retailers are corporate entities and hence file tax returns regularly. The growth of organised retail business will be associated with a steady rise in tax receipts for the central, state and local governments.

➤ **Boost to exports:** Organized retail's link with exports comes through foreign investors. International retailers look for sources around the world and a country in which they operate becomes a source for their global sales. Some of the international retailers that have plans for India in the future have already developed suppliers in the country and have started exported from India for example, Wal-Mart exported an equivalent to US \$ 600 million from India in 2006-07.

➤ **Rise in growth and productivity:** In India, organised retail will raise productivity and growth by pulling up the current lagging sectors, such as agriculture, food processing industry and textiles. Organised retail has potential to lift the Indian economy to higher levels of growth and productivity by removing the inefficiencies of various sectors. Besides, in order to meet the rapidly growing demand for retail space, construction of real estate is taking place at a fast pace.

➤ **Impact on employment:** Retail is a huge sector for employment. The growth of organized retail is enhancing the employment potential of the Indian economy. While providing direct employment in retail, it will drive the growth of a number of activities in the economy which in turn will open up employment opportunities to several people. Organized retailing is expected to bring about positive employment impact in terms of quantity (more jobs will be created) and quality (security of job, benefits etc. will be better).

V. CONCLUSION

In nut-shell, the retail sector has played phenomenal role throughout the world in increasing productivity of consumer goods and services. There is no denying the fact most of the developed economies are very much relying on their retail sector as a locomotive of growth. The Indian retail industry is the largest among all the industries, accounting for over 10 per cent of the country's GDP and around 8 per cent of the employment. Though at present, around 95 percent of India's retail market is unorganized, as compared to unorganized market, organized retail is experiencing much higher growth and throwing open opportunities for new entrants to come and grow. The study also enumerated some positive impacts of retail revolution on the various sectors of the Indian economy. Thus, government needs to be lobbied with, to help create a conducive environment so that the latent entrepreneurial spirit can get unleashed and ultimately value can be delivered to consumers who will push their shopping carts and participate actively in this great retail boom.

References:

- Ernst and Young, The Great Indian Retail Story, 2006-07 F&B.
- Gupta, S., "Insight into the Indian retail sector", March 2010.
- Joseph Mathew et. al., "Impact of Organized Retailing on the Unorganized Sector", May 2010, ICRIER.
- Knight Frank, "India Organised Retail Market: Diagnosis & Outlook", Q1 2010.
- KPMG Report "Indian retail – on fast track", 2007.
- Various issues of Indian journal of marketing.
- www.wikipedia.com
- www.business-standard.com
- www.thehindubusinessline.com
- www.indiaretailnews.com

AN APPRAISAL OF PRADHAN MANTRI JAN DHAN YOJANA (PMJDY)

Deepak Bains,

Assistant Professor,

Department of Commerce, DAV College, Sadhaura, Yamunanagar

ABSTRACT

Pradhan Mantri Jan Dhan Yojana is a financial inclusion program of Indian government that aims to expand and make affordable access to financial services such as bank accounts, remittances, credits, insurance and pensions. Financial inclusion is where individuals and businesses have access to useful & affordable financial products & services that meet their needs that are delivered in a responsible & sustainable way.

It is defined as the availability & equality of opportunities to access financial services. PMJDY was a dominant step towards financial inclusion. This scheme was launched by PM NARENDRA MODI on 15 august 2014. This scheme aims to provide a basic platform to financially excluded sections of Indian society to connect with banking sector, help to save and mobilize their small savings and to contribute to the development of industries and nation.

Keywords: financial inclusion, financial services, access to services

INTRODUCTION

The government of India and the Reserve Bank of India has been making concerted efforts to promote financial inclusion as one of the important national objectives of the country. Some of the major efforts made in the last five decades include - nationalization of banks, building up of robust branch network of scheduled commercial banks, co-operatives and regional rural banks, introduction of mandated priority sector lending targets, lead bank scheme, formation of self-help groups, zero balance BSBD accounts, etc. The fundamental objective of all these initiatives is to reach the large sections of the financially excluded Indian population.

Financial inclusion broadens the resource base of the financial system by developing a culture of savings among large segment of rural population and plays its own role in the process of economic development. Further, by bringing low income groups within the perimeter of formal banking sector; financial inclusion protects their financial wealth and other resources.

MAIN FINANCIAL INCLUSION PROGRAMME INTRODUCED BY INDIAN GOVERNMENT

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)

The PMJJBY is available to people in the age group of 18 to 50 years having a bank account who give their consent to join / enable auto-debit. The life cover is of Rs 2 lakhs under this scheme is provided with annual premium of Rs. 330(1). Risk coverage under this scheme is for Rs. 2 lakh in case of death of the insured, due to any reason. Aadhar is the

primary KYC for the bank account. The scheme is being offered by the Life Insurance Corporation and all other life insurers who are willing to offer the product on similar terms with necessary approvals and tie up with banks for this purpose. As on 31st March, 2017, cumulative gross enrollment reported by banks is over 3.10 crore under PMJJBY and a total of 62166 claims were registered under PMJJBY of which 59118 have been disbursed (2).

Pradhan Mantri Suraksha Bima Yojana (PMSBY)

The Scheme is available to account holders in the age group of 18 to 70 Years, who give their consent to join / enable auto-debit on or before 31st May for the coverage period 1st June to 31st May. The risk coverage under the scheme is Rs. 2 lakh for accidental death and full disability and Rs. 1 lakh for partial disability and the premium of Rs.12 per annum is to be deducted from the account holder's bank account through 'auto-debit' facility in one installment (3). As on 31st March, 2017, cumulative gross enrolment reported by Banks subject to verification of eligibility, etc. is over 9.94 crore under PMSBY. A total of 12,534 Claims were registered under PMSBY of which 9,403 have been disbursed (4).

Atal Pension Yojana (APY)

APY was launched on 9th May, 2015 by the Prime Minister. APY is open to all saving bank/post office saving bank account holders in the age group of 18 to 40 years. Subscribers would receive the guaranteed minimum monthly pension of Rs. 1,000 or Rs. 2,000 or Rs. 3,000 or Rs. 4,000 or Rs. 5,000 at the age of 60 years. Under APY, the monthly pension would be available to the subscriber, and after him to his spouse and after their death, the pension corpus, as accumulated at age 60 of the subscriber, would be returned to the nominee of the subscriber.

In the event of pre-mature death of the subscriber, Government has decided to give an option to the spouse of the subscriber to continue contributing to APY account of the subscriber, for the remaining vesting period, till the original subscriber would have attained the age of 60 years. The spouse of the subscriber shall be entitled to receive the same pension amount as that of the subscriber until the death of the spouse. After the death of both the subscriber and the spouse, the nominee of the subscriber shall be entitled to receive the pension wealth, as accumulated till age 60 of the subscriber. As on 31st March, 2017, a total of 48.54 lakh subscribers have been enrolled under APY with a total pension wealth of Rs. 1,756.48 crore (5).

Pradhan Mantri Mudra Yojana

The scheme was launched on 8th April 2015. This scheme is aimed to develop entrepreneurship among skillful youths who requires seed capital to start their business. Under this scheme a loan of up to Rs. 50,000 is given under sub-scheme 'Shishu'; between Rs. 50,000 to 5.0 Lakhs under sub-scheme 'Kishore'; and between 5.0 Lakhs to 10.0 Lakhs under sub-scheme 'Tarun'. Loans taken do not require collaterals (6).

Stand Up India Scheme

Government of India launched the Stand up India scheme on 5th April, 2016. The Scheme facilitates bank loans between Rs.10 lakhs and Rs.1 crore to at least one Scheduled

Caste/Scheduled Tribe borrower and at least one Woman borrower per bank branch for setting up Greenfield enterprises (the first time venture of the beneficiary in the of manufacturing, service and trading sector). Stand up India scheme caters to promoting entrepreneurship amongst those sections who facing hurdles due to lack of advice/mentorship as well as inadequate and delayed credit. It caters to both ready and trainee borrowers.

To extend collateral free coverage, Government of India has set up the Credit Guarantee Fund for Stand up India (CGFSI). Apart from providing credit facility, Stand up India Scheme also envisages extending hand-holding support to the potential borrowers. It provides for convergence with Central/State Government schemes. Applications under the scheme can also be made online on the dedicated Stand up India portal (www.standupmitra.in). As on 29.03.2017, Rs. 5,237.29 crore has been sanctioned in 25,435 accounts (20,305 – women, 1,086-ST and 4,044 – SC)(7).

PRADHAN MANTRI VAYA VANDANA YOJANA

Pradhan Mantri Vaya Vandana scheme was launched in the Budget Speech of financial year 2018-19. The Scheme was started by the central government for providing pensions benefits to the senior citizen (60 years and above age) of the country. The objective of PMVVY is to secure the future of citizens after their retirements. Under the PMVVY Scheme Life Insurance LIC provides an assured return of 8% per annum for 10 years. The eligible senior citizens of the country may invest the capital money under this scheme till 31st December 2020. The minimum amount of purchase is Rs. 1, 50,000/- and the maximum purchase price is Rs. 15, 00,000/-(8). Subscribers will get an assured pension based on a guaranteed rate of return of 8% per annum, payable monthly. Loan can be avail against the 75% of purchase price of the policy after 3 years of purchasing and the scheme is exempt from goods & services tax.

PRADHAN MANTRI JAN DHAN YOJANA (PMJDY)

As stated earlier, PMJDY was launched in august 2014, and an ambitious financial inclusion programme of Indian government. On the inauguration day of the scheme it set a world record with open most bank accounts in one week as a part of financial inclusion campaign is 18,096,130 from 23 august 2014 to 29 august 2014.(9) This is the result of well preparation of Indian government.

Census 2011 estimated that out of 24.67 crore household in the country, 14.48 crore (58.7%) had access to banking services. In the first phase of the scheme remaining household were targeted for inclusion through opening a bank account within a year of launch of the scheme.

Key benefits under PMJDY Scheme (10)

1. Interest on deposit.
2. Accidental insurance cover of Rs. 1.00 lakh
3. Account can be open with zero balance.

4. Life Cover of Rs. 30,000/- payable on death of the beneficiary, subject to fulfillment of the eligibility condition.
5. Easy Transfer of money across India.
6. Beneficiaries of Government Schemes will get Direct Benefit Transfer in these accounts.
7. After satisfactory operation of the account for 6 months, an overdraft facility will be permitted
8. Access to Pension, insurance products.
9. The Claim under Personal Accidental Insurance under PMJDY shall be payable if the Rupay Card holder have performed minimum one successful financial or non-financial customer induced transaction at any Bank Branch, Bank Mitra, ATM, POS, E-COM etc. Channel both Intra and Inter-bank i.e. on-us (Bank Customer/ rupay card holder transacting at same Bank channels) and off-us (Bank Customer/Rupay card holder transacting at other Bank Channels) within 90 days prior to date of accident including accident date will be included as eligible transactions under the Rupay Insurance Program 2016-2017.
10. Overdraft facility upto Rs.5000/- is available in only one account per household, preferably lady of the household.

Performance of scheme

Due to well preparation of government on inauguration day, 1.5 crore accounts were opened(11). By September 2014, 3.02 crore accounts were opened under this scheme. Amongst, public sector bank SBI had opened 30 lakh accounts, followed by PNB with 20.24 lakh, canara bank 16.21 lakh accounts, and central bank of India 15.98 lakh accounts and bank of Baroda with 14.22 lakh accounts. (12)

The balance in Jan Dhan accounts rose by more than 270 billion between 9th November 2016 to 23rd November 2016. (13)

19 Lakh householders have availed the overdraft facility of 2.56 billion by May 2016(14). Utter Pradesh and west Bengal have got 29% of the total deposits under the scheme (15).

Whereas Kerala and Goa became the first states in the country to provide one basic bank account to every household (16).

A total of 227 million Rupay cards have been issued by National Payments Corporation of India (NPCI) till august 2017. The amount of deposit rose to 656.97 billion by august 2017(17)

Near about 30 crore new families have got jandhan accounts in which almost Rs. 65000 crore have been deposited, PM NARENDRA MODI said on 28 august 2017, on the eve of 3rd anniversary of the scheme.

Pradhan Mantri Jan-DhanYojana statistics as on 26 December 2018 (All figures in crores) (18)

Bank Type	Number of Accounts				Balance in Accounts	Number of <u>RuPay</u> Cards
	Rural	Urban	Total	Female		
Public Sector Banks	14.62	12.43	27.05	14.23	₹69,083.71	22.10
Regional Rural Banks	4.67	0.88	5.55	3.06	₹14,838.24	3.79
Private Banks	0.62	0.43	1.05	0.55	₹2,398.85	0.98
Total	19.92	13.74	33.66	17.84	₹86,320.79 (US\$12 billion)	26.87

The inclusive aspect of this is evident from the fact that 16.87 crore(60%) of PMJDY accounts are in rural areas and 14.49 crore (over 51%) account holder under this scheme are woman and as on 26 December 2018 the total deposit in PMJDY accounts are Rs. 86320.79 crore .

Criticism

PMJDY was an ambitious scheme of the government for enhancement of financial inclusion but this scheme is criticized on the ground that accounts were re-opened of those accountholders who had existing one, this scheme increase the number of accounts not the transactions. To show the success of this scheme government pressurize banks to open unnecessary accounts and funds deposited under this scheme were not sufficient (average deposit per account Rs. 2235 in March 2017). (19)

We can conclude that performance of the scheme is not satisfactory and ways or methods were not sufficient for effective implementation.

Conclusions

1. Enhance banking habits of poor, labor and middle income sections of society.
2. Promotes small savings of the people and helps them to connect with digital and paperless banking (debit cards and green cards).
3. When these small saving channelize through financial institutions to industries, it will result in growth of industries and economy and also ensures social welfare.
4. It also generates interest income for the account holders and provide a basic platform to a normal citizen to connect with banking system.
5. Boost other financial inclusion programme.

References-

- 1) https://www.business-standard.com/article/current-affairs/jan-suraksha-social-security-for-masses-pricing-woes-for-insurers-115050900786_1.html
- 2) <https://financialservices.gov.in/new-initiatives/schemes>
- 3) <https://sbi.co.in/portal/documents/23399/6910053/rules+pmsby.pdf/af2252cc-ac49-41eb-8eec-da119c73c879>
- 4) <https://financialservices.gov.in/new-initiatives/schemes>
- 5) <https://financialservices.gov.in/new-initiatives/schemes>
- 6) <https://www.mudramitra.in/>
- 7) <https://financialservices.gov.in/new-initiatives/schemes>
- 8) <https://pmil.in/central-government-scheme/pradhan-mantri-vaya-vandana-scheme/>
- 9) <https://indianexpress.com/article/business/business-others/jan-dhan-yojana-enters-into-guinness-book-record-with-1-5-cr-accounts/>
- 10) <https://www.pmjdy.gov.in/scheme>
- 11) <https://economictimes.indiatimes.com/news/economy/policy/pm-jan-dhan-yojana-launched-1-5-crore-bank-accounts-opened-in-a-day/articleshow/41093413.cms>
- 12) <https://economictimes.indiatimes.com/industry/banking/finance/banking/sbi-takes-lead-in-opening-bank-accounts-under-jan-dhan-yojana/articleshow/422879>
- 13) <https://economictimes.indiatimes.com/news/politics-and-nation/keep-the-black-money-deposited-in-your-account-pm-to-jan-dhan-holders/articleshow/55771854.cms>
- 14) <https://economictimes.indiatimes.com/industry/banking/finance/banking/financial-inclusion-gets-a-boost-with-jan-dhan-yojana/articleshow/52214010.cms>
- 15) https://www.business-standard.com/article/economy-policy/why-jan-dhan-yojana-is-gaining-currency-in-uttar-pradesh-west-bengal-116052600920_1.html
- 16) <https://timesofindia.indiatimes.com/city/goa/Over-26k-Jan-Dhan-bank-accounts-in-Goa-have-zero-balance/articleshow/52543726.cms>
- 17) <https://www.thehindubusinessline.com/money-and-banking/jan-dhan-scheme-going-strong-3-years-on/article9818227.ece>
- 18) <https://www.pmjdy.gov.in/account>
- 19) https://www.indiaonline.com/article/news-top-story/pradhan-mantri-jan-dhan-yojana-pmjdy-average-deposit-per-account-multiplies-in-2-years-117052401102_1.html

ANALYSIS OF FINANCIAL ACTIVITES OF INDIAN BANKING SECTOR

Yashwanti Sihmar

Designation..Assistant professor of Commerce

Govt. College Alewa, Jind

ABSTRACT

A number of financial activities are performed in the banks. Banking industry is an important branch of the Indian financial sector. The most common banking type is the retail banking where all the information of users' accounts is kept from the initialization of the account to the termination.

With the advancement in the modern technology, the banks have also started providing a lot of services like ATM, online fund transfer and internet banking etc. Hence, most of the people are connecting with the banking industry. Also, some banks provide good rate of interest on the fixed deposit. Hence, a number of services are provided by the banks so that more and more customers can be attracted. The current paper highlights the analysis of the financial activities of Indian banking sector.

KEYWORDS:Financial, Banking, Management

INTRODUCTION

After independence, not an effective growth was observed in Indian banking sector. As a result, the process of nationalization of Indian banks was performed by the Indian government so that there could be some progress in the profitability.

According to a report, there are 11,75,150 employees working in different 1,09,811 bank branches. It is reported that nearly an amount of Rs. 67504.54 billion are deposited every year in the Indian banks whereas the bank credit is reported to be Rs. 52604.59 billion annually.

Indian government is taking continuous decisions so that the situations of the banks and especially of the public banks can be improved effectively. For this purpose, Pradhan Mantri Jan DhanYojna was initiated by the government where a number of zero balance accounts are opened.

In India, there are a number of banks. Some of the banks come under the category of private sector and some banks fall in the category of the public banks. Some public sector banks are Punjab National Bank, State Bank of India and Indian Bank etc. The banks such as HDFC Bank, Axis Bank and ICICI bank come under the category of the private sector banks. The customer service of the private banks is considered as much better as compared to that of the public sector banks.

Recently, the task of the transformation in Indian public sector bank was performed by the Indian government where the merger of some public sector banks was done with the State Bank of India. This step was necessary to maintain the financial activities of the public sector organizations.

Generally, the graph of net asset of private banks tends to move upward as compared to that of the public sector banks. In the session 2016-17, increase in the percentage of net assets of HDFC banks was reported to be 8.84% whereas in the same session, the increment in the net asset percentage was observed to be 6.28% in case of the public sector banks. This data shows that a higher net asset is observed in private sector banks as compared to the public sector banks.

Similarly, in the session 2016-17, an increase in the percentage of net profit was observed to be 26.04% in case of HDFC bank (private bank) whereas negative percentage of net profit was observed in Punjab National Bank for the same session.

If we compare the return of fluctuation of HDFC bank and PNB bank for the year 2016-17, then we analyze that in case of HDFC bank, the increment in the percentage of fluctuation return was observed to be 1.72. On the other hand, 0.60% was observed in the percentage of fluctuation return in case of PNB.

ANALYSIS OF FINANCIAL ACTIVITIES OF INDIAN BANKING SECTOR

A financial year for the Indian banks start from 1st April every year and ends on 31st March. After the termination of the financial year, the performance of all Indian banks is evaluated in terms of net assets and net profit growth.

During analysis, it is observed that an increment in the percentage of net assets is found in both; public sector banks and private sector banks; from last decade. A variance in the trend of net profit percentage is reported in Indian banks from last decade.

The performance of the private and public banks is found to be relative as both kinds of banks provides good support to the customer. It is also observed that the annual profit of the private banks is higher than that of public banks every year.

The reason behind the good profit rate of private banks can be the fact that the private banks offer good percentage of interest to their customers. Also, a number of offers are provided by the private banks to their customers in terms of debit and credit cards. With the help of e-banking, customers get the facility of performing the bank related activities without physically going to the related bank.

Table 1: Net Assets

Year	Punjab National Bank				HDFC Bank		
	Net Assets (in Lacs)	Total Assets (in Lacs)	(in % of Net Assets)	Net Assets (in Lacs)	Total Assets (in Lacs)	% of Net Assets	
2007-08	816130	12624128	6.46	452028	5142900	9.76	
2008-09	937636	14526738	6.45	529960	7350639	9.53	
2009-10	1043546	62422149	6.42	643315	9123561	7.05	
2010-11	1231835	19902036	6.19	1149724	13317661	8.63	
2011-12	1465363	24691862	5.93	1505273	18327077	8.21	
2012-13	1772292	29663277	5.97	2152249	22245857	9.67	
2013-14	2150856	37832526	5.68	25,37927	27735260	9.1	
2014-15	27,81707	458,19401	6.06	29,92468	33790951	8.85	
2015-16	31,24805	477,44819	6.54	36,21414	40033189	9.04	
2016-17	34,48714	549,01174	6.28	4347863	49159950	8.84	

Table 1 reveals that Net Assets of Punjab National Bank indicated a Compound Annual Growth Rate (CAGR) of 15.5% whereas that of HDFC Bank indicated an annual compound growth rate of 25.4%. All this indicate that net assets of HDFC Bank Limited increased quicker than that of Punjab National Bank Limited. Growth rate of Net Assets of Punjab National Bank and HDFC Bank has been computed by way of annual compound growth rate

As per **Table 2**, it can be observed that the net profit of PNB was 141012 lac in 2016-17 and it rose to 334258 lac in 2016-17 which is 1.37 times but the growth of HDFC is much higher than PNB as HDFC has a net profit of 66556 lac in 2007-08 and it rose to 847838 lac in 2016-17 which is 11.73 times. Net profit growth rate of PNB is 9.01% and the HDFC is 28.98%. This implies that the performance of HDFC is better times as PNB in the corresponding years. In 2014-15 and in 2015-16 PNB has shown a negative growth in the profit which is -2.7 and -29.5 respectively, as compared to HDFC it is very low. The growth rate of PNB is 15.5% and HDFC growth rate is 25.4%. The net profit of both the banks HDFC indicate annual compound growth rate of 28.98% where as PNB shows 9.01%

Table 2: Net Profit Growth of PNB and HDFC Bank

Year	PNB			HDFC	
	Net Profits in lac	% Increase over Previous Years	over	Net Profits in lac	% Increase over Previous Years
2007-08	141012	-----		66556	-----
2008-09	143931	2.07		87078	30.83
2009-10	154008	7.00		114155	31.08
2010-11	204876	33.0		159018	39.31
2011-12	309088	50.86		224494	41.17
2012-13	390536	26.35		294870	31.34
2013-14	443350	13.52		392640	33.15
2014-15	488420	10.16		516709	31.59
2015-16	474767	-2.7		672628	30.17
2016-17	334258	-29.5		847838	26.04

Table 3: Ratio of SBI

Year	CR	LR	NPR	DER	ICR
2012	0.05	12.05	10.99	13.94	1.52
2013	0.04	12.15	11.78	13.87	1.43
2014	0.03	13.88	7.98	13.34	1.38
2015	0.04	10.78	8.59	13.87	1.41
2016	0.07	10.84	6.07	13.55	1.42
Average	0.046	11.94	9.08	13.714	1.432

Source: Money control Website

The above table and figures highlights that the average ratio of CR is recorded higher than CR of different years. Moreover, the current ratio of SBI was not recorded according to the standard norms of CR i.e. 2:1. On the other hand the LR was recorded very high. The

liquidity position of the company is not recorded sound. In respect of profitability position, it was found that the NPR of SBI recorded fluctuating trend.

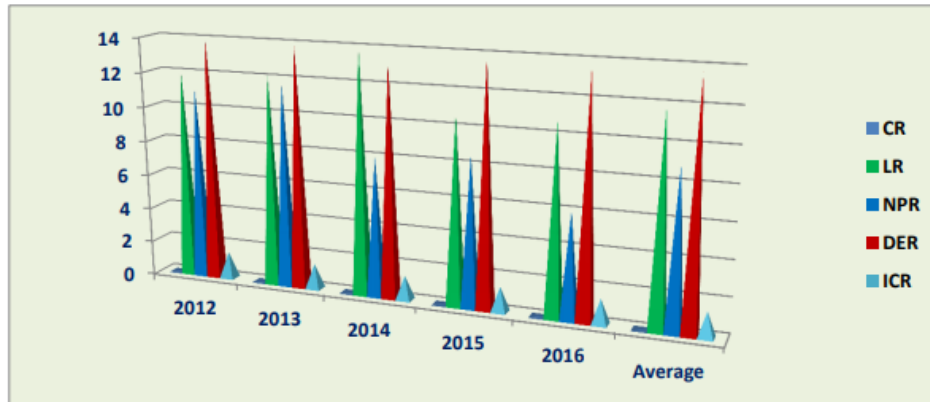


Figure 1: Ratio of SBI

Furthermore, in the year 2014, 2015 and 2016 the NPR was recorded below the average profit of five years. The solvency position of the SBI is recorded in a sound condition. And, DER and ICR maintain uniformity.

The following table highlights the liquidity position, solvency position and profitability of ICICI. It reveals that the average ratio of CR is recorded higher than CR of different years i.e. 0.088.

Table 4: Ratio of ICICI

Year	CR	LR	NPR	DER	ICR
2012	0.07	16.71	19.27	6.55	1.48
2013	0.09	10.53	20.77	6.57	1.52
2014	0.09	11.31	22.20	6.65	1.62
2015	0.06	13.81	22.76	6.64	1.68
2016	0.13	14.97	18.44	6.86	1.78
Average	0.088	13.466	20.688	6.654	1.616

Source: Money control Website

Moreover, the current ratio of ICICI was not recorded according to the standard norms of CR i.e. 2:1. On the other hand the LR was recorded very high.

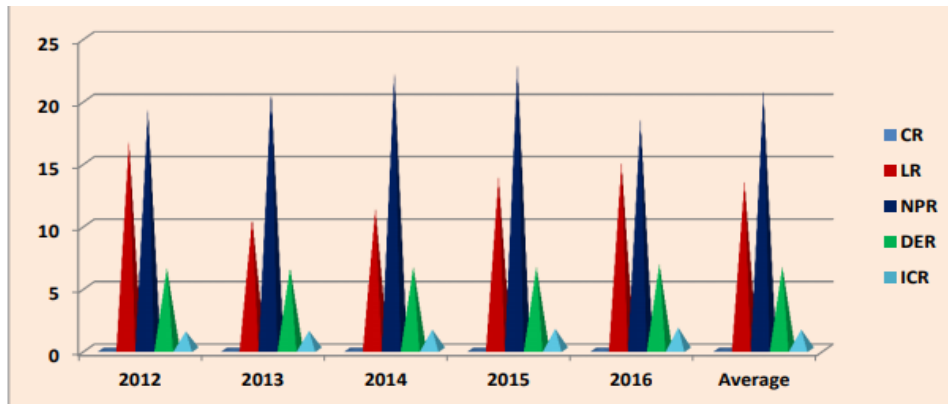


Figure 2: Ratio of ICICI

The liquidity position of the company is not recorded sound because in the case of CR it couldn't record more than the current assets. And, in the case of LR it was recorded very high. In respect of profitability position, it was found that the NPR of ICICI recorded uniform trend. Furthermore, in the year 2014 and 2015 the NPR was recorded higher than the average net profit ratio of five years. The solvency position of the ICICI is recorded in a sound condition.

DISCUSSION

Looking at the next basis which is Return on assets, HDFC grew from 1.29% to 1.72% but PNB went down stairs from 1.11% to 0.60%. So as in comparison to PNB, HDFC utilizes its assets more efficiently and giving better performance. Further the Net NPA ratio of both the banks indicate the true story of the banks that how much loans are bad and how much is recovered, who is managing its NPA more efficiently to lower it down to maximize the true profit.

The bank of any country plays very important role in the economic development of the country. Finance is regarded as the oxygen of trade and industry. The development of banks in the country and develop through banks in the country has placed India amongst the top 5 fastest growing economics in the world. The whole of the world is looking towards India a prospective dominant player in the world's markets. The banks today have touched the lives of every citizen. Whether he has to keep his money at midnight from the bank, to keep is valuable safe; to book the tickets for rail and air journeys; to pay insurance premium, telephone bills, electricity bills; to purchase/sell securities from the capital market, to take a loan for business, for education, for a house or for consumer items, everywhere the bank is present. Basically, the banks can be divided into two sectors commercial banks and co-operative banks. Banks, which have a national network and provide services are further divided into 2 sectors Public sector banks and private sector banks. Public sector banks are fully controlled by the government (i.e. central government) and private sector banks have private ownership. The present research was conducted keeping in view the sharp difference between Private Sector and Public Sector Banks in the adoption of technology in banking services in Twin Cities. Banking in India was generally fairly mature in terms of supply, product range and reach even though reach in rural India and to the poor still

remains a challenge. The government has grown capability to address this through the State Bank of India expanding its branch network and through the National Bank for Agriculture and Rural Development with things like microfinance.

CONCLUSION

Net NPAs are those type of NPAs, in which the bank has deducted the provision regarding NPAs. Net NPA shows the actual burden of banks. Since in India, bank balance sheets contain a huge amount of NPAs and the process of recovery and write off of loans is very time consuming. The provisions the banks have to make against the NPAs according to the central bank guidelines are quite significant.

Net assets of HDFC show annual compound growth rate of 25.4% which is much higher than PNB that is 15.5%. While comparing the net profit of both the banks, HDFC indicate annual compound growth rate of 28.98% whereas PNB shows 9.01% so there is a huge difference between profits of these two banks, as the net profit of PNB in year 2013 and 2014 indicate negative growth rate from corresponding years.

REFERENCES

1. Apropos(2014) The Soundness of Public Sector Banks. Finance India: 12.
2. BholeLM (2010) Financial Institution & Markets. Tata McGraw Hill Publications Ltd, New Delhi.
3. Garima C (2014) Performance Comparison of Private Banks with Public Sector Banks. International Journal of Emerging Research in Management & Technology.
4. Desai, Vasant (2012) Indian Financial System, Himalaya Publishing House, New Delhi.
5. Dutt, Ruddar, Sundaram KPM (2013) Indian Economy, S. Chand & Company Pvt. Ltd, New Delhi.
6. Gupta R, Sikarwar NS (2013) A Comparative Study of Growth Analysis of Punjab National Bank of India and HDFC Bank Limited. IJAIEM2: 60-68.
7. Ahmad, I. (2016). Analysis of Financial Performance of Hindustan Petroleum Corporation Limited. International Journal of Research in Management, Economics and Commerce, 6(4), 1-14.
8. Gupta, S. (2014). An empirical study of financial performance of ICICI bank- a Comparative analysis. IITM Journal of Business Studies (JBS), (1)1, 1-14.
9. Jaiswal, A., & Jain, C. (2016). A Comparative Study of Financial Performance of SBI and ICICI. International Journal of Scientific Research in Computer Science and Engineering, 4(3), 1-6.
10. Singh, A., & Tandon, P. (2012). A study of financial performance: A comparative analysis of SBI and ICICI Bank. International Journal of Marketing, Financial Services & Management Research, 1(11), 56-71.
11. Tirkey, M.R., & Saleem S.E.A. (2013). A Comparative Study of Financial Statement of ICICI and HDFC Through Ratio Analysis. International Journal of Accounting and Financial Management Research (IJAFMR), 3 (4), 89-96.

AN ANALYTICAL STUDY ON ATTITUDE AND BEHAVIOUR PATTERN OF CONSUMERS IN RESPECT OF GREEN MARKETING

Dr. Syeda Shagufta Naaz

Department of Commerce,

Gubarga university Kalaburagi, Karnataka

Abstract:

In today's changing world environmental issues plays an important role in marketing. Most all the governments is surrounded with the world which have been concerned about green marketing activities that they have actually attempted to regulate them.

Green marketing: Environmentally is responsible or "green" marketing refers actually to the satisfaction of consumer needs, wants and their desires in conjunction with the preservation and conservation of the natural environment. Green marketing also manipulates the four elements of the marketing mix (product, price, promotion and distribution) and to sell products and services which is offering superior environmental benefits in the form of reduced waste, increased energy efficiency, and even decreased release of toxic emissions.

Key-words: environmental issues, Marketing mix, efficiency, preservation.

Introduction:

Marketing is termed as a dynamic and ever evolving field and so is its definition. Its actual definition which will serve as starting point for the other definitions. Marketing has been defined by Bauer &Berács (1992) as the philosophy of the company that concentrates on the needs of the consumers.

Environmentally it is responsible or "green" marketing refers to the satisfaction of consumer needs, wants, and desires in conjunction with the preservation and conservation of the natural environment. Considered an oxymoron by many environmentalists (because it still promotes consumption), green marketing and also manipulates the four elements of the marketing mix (product, price, promotion and distribution) to sell products and services offering superior environmental benefits in the form of reduced waste, increased energy efficiency, and/or decreased release of toxic emissions. Green or Environmental Marketing also consists of all activities designed to actually generate and facilitate any exchanges which is intended to satisfy human needs or wants, such that the satisfaction of these set of needs and wants occurs, with the minimal detrimental impact on the natural environment.

According to the American Marketing Association, Green Marketing is termed as marketing of products that are presumed to be environmentally safe in nature. Thus green marketing incorporates a very broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising. Yet defining green marketing is not that simple task where there are several meanings which intersect and even

contradict each other; an example of this which will be the actual existence of varying social, environmental and retail definitions which has been attached to this term. Other similar terms used are Environmental Marketing and Ecological Marketing as well.

Review Literature:

According to Elkington, (1994), The growth of green marketing and green consumer is "perhaps the biggest opportunity for enterprise and invention the industrial world has ever seen" (Cairn cross 1992: 177). A green consumer can be identified to be one who avoids any product which may harm damage to any living organism, cause deterioration of the environment during process of manufacturing or during process of usage, consume a large amount of non renewable energy, involves unethical testing on animals or human subjects.

As per Hart (1997), Companies have a responsibility to drive the development towards greater sustainability and becoming greener, so that a company's aim is to create markets for more environmentally friendly products and services and educate and influence customers to change.

According to Gadenne, 2011; Wulf and Schroder, (2003) recommended that in order to predict specific behaviors the attitudes measured have to be directed at a specific environmental issue like purchasing of green products.

As per Jain & Kaur (2004), In their study Attitudinal and behavioral analysis of Indian Consumers, The findings reveal that the respondents do believe in genuineness of sudden rise in environmental concern and that the Indians are ready to take steps further in environmental protection. Respondent don't see Government, politicians playing their responsible role in the matter and see laws as not enforced with strictness. Respondent see their restricted role in the matter of helping improve environment. Respondents are seen to conspicuously lack the knowledge about environmental legislation.

Objectives.

1. To observe the awareness of consumers regarding green products.
2. To develop in new market and launch its new product innovation
3. To facilitate the challenges of the consumers and to perceive the way of adopting the green lifestyle.
4. To analyze its attitude and behaviour of Indian consumers towards green products.
5. To gain an advantage over competitors for sustaining in the market.

Hypothesis:

H0: There is actual relationship between consumer's attitude and the purchase behaviour of green products.

H1: There is no such actual relationship between consumer's attitude and the purchase behaviour of green products.

Research Methodology:

Research is a common term which actually refers to a search for knowledge. It is a scientific and systematic search for specific information on a specific topic. In fact, research is an art of scientific investigation research is also an academic activity and as such, the term should be used in a technical sense. A research also includes defining and re-defining problems, formulating hypothesis or suggested solution, collecting, organizing and evaluating data and making deduction and reaching conclusion and at last carefully testing the conclusion to determine whether they fit formulating hypothesis.

Research also covers the search for and retrieval of information for a specific purpose. Research has many categories from medical research to literacy research. Research is defined essentially as a fact of finding process which influences decision making. It is a careful search or inquiry into any subject or subject matter, which is an endeavor to discover or find out valuable facts, which would be useful for further application or research, is studies conducted towards long range questions or advancing scientific knowledge.

Data Collection:

Methods of Data Collection:-

Data collection is termed as the most important activity or process in research. Data collection also plays a vital role in finding the actual problem and solution to that problem. Generally there are two methods for finding the data.

1. Primary Data
2. Secondary Data

Primary Data:-

Primary data have been collected through questionnaires and by informal interaction with the Supervisors and even by various heads of department. This gives the actual reason of job satisfaction and dissatisfaction. Since some workers were not ready to give their fair opinion while filling the questionnaires.

Secondary Data:-

The secondary data on the other hand are those, which have already been collected by someone else and which have already been passed through the statistical process.

- Published material on internet
- Reports and records of the company
- Books and Magazines.

Data Analysis and Data Interpretation:

In this study of consumer behaviour, various demographic characteristics also play a vital role. It is said that consumer attitude and behaviour also depends and is greatly on the demographic attributes which they carry. Keeping in view the various set of objective of finding out the relationship between demographic attributes and their respective environmental concerns, the present study took up one way ANOVA test. In the test

quantitative demographic variables such as age and income level of the respondents were separately taken to see the relationship between demographics and environmental concern.

The relationship between attitudes and behaviour is one, which has been explored in a variety of contexts. In the environmental literature, the question has been addressed by exploring the relationship between the attitudinal construct, environmental concern, and various behavioral measures and/or observations. For establishing a relationship between attitude and both types of behaviours i.e. purchase and conservation, the Chi Square test was used. The first attitude question (Column) was tested with all purchase behaviour questions (Rows). The table value of χ^2 for 9 d.f. at 5% level of significance is 16.9. The calculated value of χ^2 in each case was much higher than the table value which means that, the calculated value cannot be said to have arisen just because of chance. It is significant. Hence, the hypothesis holds good. This means that the attitude of considering oneself capable of doing something good to the environment portrayed by the respondents does relate with the purchase behaviour of green products. Hypothesis is accepted.

Conclusion:

The actual fact remains that in India the concept of Green marketing is relatively a new notion to the most of the consumers and the same for Marketers also. However, the green marketing is the marketing of product that are presumed to be environmentally safe. Therefore, it actually becomes very essential to understand the dualism which is between green marketing and the growing price of the green product, so that the green product can be within the reach of the consumers easily of different hierarchy. But it is not as easy as Green Marketing is pretence and has to face the challenges which also requires innovative technology so that the 'green products' can fetch wider range in the market.

It require a periodic review of the 'green product', so that the products may also become 'ecological viable' as well as 'economical viable' for the consumers, especially it belongs to middle and low income groups. A clever marketer is one where it should not be considered as just one more approach to marketing and ultimately who not only convinces the consumer, but also involves the consumer in marketing his product by taking live demonstration and feedback. Green marketing should, but also needs to be pursued with much greater dynamism, as it has an environmental and social dimension to it. It has to become the general norm to actually use energy-efficient lamps and other electrical goods.

Green marketing also assumes even more importance and its nearby relevance in developing countries like India. Marketers also have the responsibility to make the consumers understand the need for and benefits of green products as compared to non-green ones. Finally, it can be said that consumers, industrial buyers and even suppliers actually needs to pressurize effects on minimize the negative effect on the environment-friendly. Green marketing also assumes even more importance and its relevance in developing countries like India.

Suggestions:

1. For Spreading Green Product awareness in NGOs and have many Tie ups with schools and colleges along with various association leads to create healthy environment.
2. It also advices that only on single media like TV may not be fruitful, the use of a wide-range of media in combination, to communicate eco friendly approach as relying.
3. To lure the rational consumers, eco friendly alternatives should be linked with the rewards, for ensuring positive purchase behaviour such as use of CFLs will result in lower electricity bills, use of microwave oven can save on fuel etc
4. To open multiple number of organic retail stores for sale of green products.
5. To boost all the consumers to use green packages like jute bags, dotted cloth bags and so on.
6. Spread awareness amongst others and understand them the benefits of organic food and must teach them the ways to identify what food products are organic and how it gets benefit.
7. Minimize scare natural resources and use the resources optimally like use products without waste like food items, medicines, fruits and vegetables, cosmetics and other products.
8. Recycle the recyclable waste material

Bibliography:

1. Balderjahn I. "Personality variables and environmental attitudes as predictors of ecologically responsible consumption patterns", *Journal of Business Research*, Volume 17, Issue 1,1988;pp. 51-56.
2. Ottman, Jacquelyn A. "Industry's Response to Green Consumerism", *Journal of Business Strategy*, Vol. 13 Iss: 4, 1992; pp.3 – 7.
3. . Raymond De Young, "Changing Behavior and Making it Stick The Conceptualization and Management of Conservation Behavior", *Environment and Behavior* vol. 25 no. 3 May 1993; pp. 485-505.
4. Roome D. N. and Hinnells, M., "Environmental factors in the management of new product development: Theoretical framework and some empirical evidence from the white goods industry". *Business Strategy and the Environment*, no.2:1993; pp. 12–27.

A STUDY ON ISSUES AND CHALLENGES OF WOMEN EMPOWERMENT IN INDIA

Madhu,
Assistant Professor,
Guru Nanak Girls College,
Santpura, Yamuna Nagar, Haryana, India.

Abstract :

Women Empowerment includes the action of raising the status of women through education, raising awareness, literacy & training. For development of a country it is necessary to develop women of that country and for this various schemes are introduced by the government for providing them safety, health but still their benefit does not reach to all because of unawareness, less education so there is need to take steps in this direction. In this paper researcher find out the awareness among women about women empowerment, study the schemes of government for women empowerment, study factor that affect women empowerment, discuss the obstacles in women empowerment and give suggestions for women empowerment.

Keyword :- Women Empowerment, Literacy, Education, Health, Government, Schemes.

Introduction:-

Empowerment is the process that creates power in individuals over their own lives, society and in their communities. People are empowered when they are able to access the opportunities available to them without limitations and restrictions such as in education, profession and lifestyle.

Feeling entitled to make your own decision creates a sense of empowerment.

Empowerment includes the action of raising the status of women through education, raising awareness, literacy and training. Women empowerment is all about equipping & allowing women to make life determining decisions through the different problems in society.

Forms of Empowerment :

Economic Empowerment :

Economic Empowerment means access to formal government programs, mobility outside the home, economic independence and purchasing power. Strengthening women's access to property inheritance and land rights is another method used to economically empower women.

Political Empowerment :-

Political Empowerment supports creating policies that would best support gender equality and agency for women in both the public & private spheres. Increase women's right to vote, voice opinions and the ability to run for office with a fair chance of being elected.

Measurement of Women Empowerment :-

GEM (Gender Empowerment Measure):-

GEM shows women's participation in a given nation, both politically and economically. GEM is calculated by tracking the shares of seats in parliament held by women, of female legislators, senior officials and managers and of female profession and technical workers and gender disparity in earned income reflecting economic independence. It then ranks countries given this information.

GDI (Gender Related Development Index):

The GDI is a way in which the United Nations Development Programme (UNDP) measures the inequality between genders within a country.

Review of Literature:

Deflo E. (2011) Women's Empowerment and Economic Development, National Bureau of Economic Research Cambridge. The study argues that the inter relationships of the Empowerment and Development are probably too weak to be self sustaining and that continuous policy commitment to equality for its own sake may be needed to bring about equality between men and women.

H. Subrahanyam (2011) Compares women education in India at present and past. Author highlighted that there has a good progress in overall enrolment of girls students in schools. The empower means to give lawful power or authority to act. It is the process of acquiring some activities of women.

Venkata ani and Venkatraman (2005) focus on the effects of SHG on women participation and exercising control over decision making both in family matters and in group activities.

M. Bhawani Sankara Rao (2011) has highlighted that health of women of SHG have certainly taken a turn to better. It clearly shows that health of women members discuss among themselves about health related problems of other members and their children and make them aware of various government provisions specially meant for them.

Sethuraman K. (2008) The role of women's Empowerment and Domestic Violence in Child Growth and under nutrition in a Tribal and Rural Community in South India. The research paper explores the relationship between women's Empowerment and Domestic Violence, maternal nutritional status and growth over six months in children aged 6 to 24

months in a rural and tribal community. This longitudinal observational study undertaken in rural Karnataka India included tribal and rural subjects.

Objectives of the Study:-

- 1) To define the concept of women empowerment.
- 2) To assess the awareness of women empowerment in India.
- 3) To know the various schemes of government for women empowerment.
- 4) To study various factor influencing empowerment of women.
- 5) To identify the obstacles in the path of women empowerment.
- 6) To give suggestions for women empowerment.

Research Methodology:-

This paper is based on descriptive research. In this paper women empowerment in India is analyzed. Both primary and secondary data is used for the research. Primary data is collected through structured questionnaire and secondary data is collected from books, magazines, journals according to the need of the study.

RESULT & DISCUSSIONS:-

Awareness about women Empowerment :-

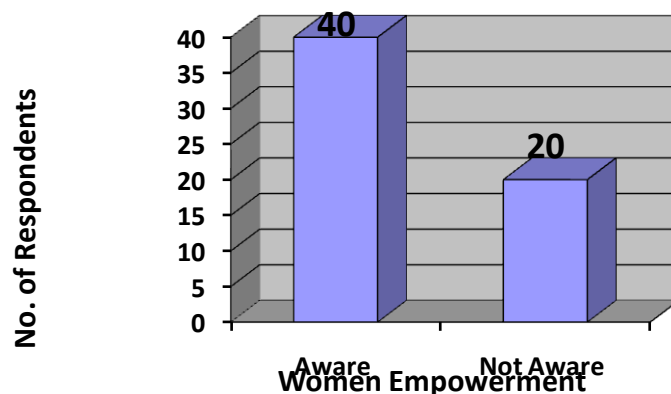
To know the awareness about the concept women empowerment a survey was conducted and result of that have been shown in following table :-

Awareness About Women Empowerment (Table 1)

Sr. No.	Awareness	No. of Respondents	Percentage (%)
1	Aware	40	66.67%
2	Not Aware	20	33.33%
	Total	60	100.00%

Source : Primary Data

Above table shows that most of the respondents are aware about women empowerment as percentage is 66.67% and 33.33% are not aware.



Awareness About Government Schemes for women Empowerment :-

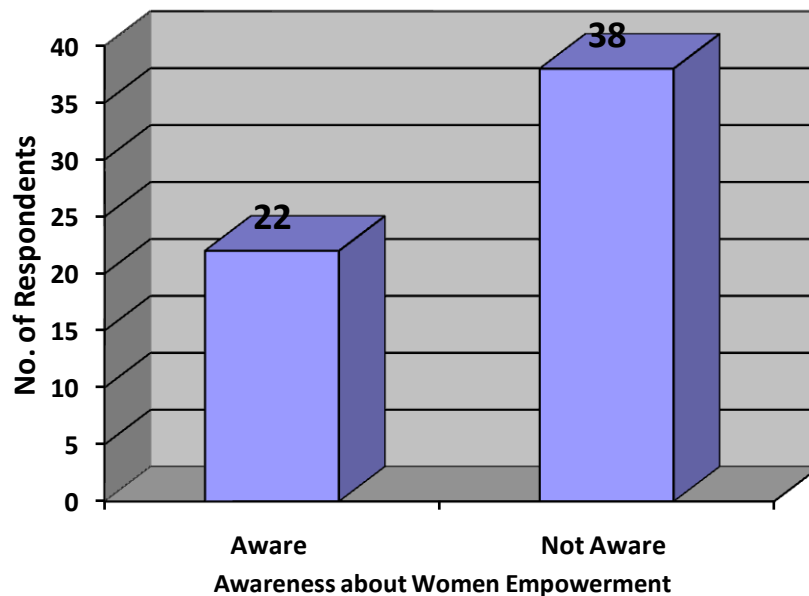
A survey was made among the respondents to know their awareness about schemes and result of that have been shown in following tables :-

Awareness about Govt. Schemes for women empowerment (Table 2)

Sr. No.	Awareness	No. of Respondents	Percentage (%)
1	Aware	22	36.67%
2	Not Aware	38	63.33%
	Total	60	100.00%

Source : Primary Data

Above table shows that out of 60 respondents 36.67% are aware about government schemes for women empowerment and 63.33% are not aware. Mostly respondents in rural areas are not aware about government schemes for women empowerment.



Present Position of Women in India :-

- 1) In India acid attacks on women who dared to refuse a man's proposal of marriage have been rising.
- 2) In 2011, National Crime Records Bureau reported 8,618 dowry deaths.
- 3) Rape cases in India have been increasing day by day.
- 4) A study shows that 80% of women in India had experienced sexual harassment.
- 5) Cases of Honor Killings where people marrying without their family acceptance increasing day by day.
- 6) Continuing abuse of dowry tradition has been main reason for sex selective abortions and female infanticides in India.
- 7) Cases of domestic violence have also been rising day by day.
- 8) Child marriage is still exist in rural areas.

Need of Women Empowerment :-

Women empowerment is needed because of many reasons like women are not allowing to participate in decision – making, Education is not provided to them and if they have education still job is not allowed, they suffer from domestic violence etc. there are many reasons. So for improvement in position of women, it is necessary to empower them. Situation of women is improving now but still many cases of domestic violence, deaths because of dowry happens so to improve situation of women it is necessary to empower them because if women have sufficient opportunities for education & job it also brings economic development of country.

Schemes of Government for women Empowerment :-

- 1) Mother and child Tracking System.
- 2) Beti Bachao Beti padhao Scheme.
- 3) Women Helpline scheme.
- 4) Ujjawala
- 5) Pradhan Mantri Matritva Vandana Yojana.
- 6) Rajiv Gandhi Scheme for Empowerment of Adolescent Girls – Sabla.
- 7) Rashtriya Mahila Kosh
- 8) Working women Hostel.

9) Support to Training & Employment Programme for women.

10) Rajiv Gandhi National creche scheme for the children of working mothers etc.

Obstacles in Empowerment of Women :-

1) Less education is given to women in many areas.

2) Dowry System is still exist.

3) Gender discrimination is also a obstacle which is still exist in many areas.

4) Child marriage is still exist.

5) Atrocities on women (Raped, Kicked, Killed, Subdued, humiliated almost daily)

6) Family responsibility is also a hindrance.

7) Female Infanticide is still exist.

8) Honor Killing is also increasing.

Challenges :-

There are several challenges that are in front of women empowerment such as :-

Inequality :-

Gender bias is shows in almost all places i.e. house, office. If equality is provided to them in almost all places only then women empowerment is possible.

Education :-

Providing Education to all women is also a challenge. The gap in education between women and men is severe. Women empowerment is possible only when all women's are educated.

Poverty :-

Poverty is considered the greatest threat; due to this women are exploited as domestic helps. Eradication of poverty should be a goal to achieve women empowerment.

Health and Safety :-

Health and Safety are an improvement factor in gauging the empowerment of women in a country. However there are alarming concerns where maternal health care is concerned. After taken all safety measures womens are not safe outside home for women empowerment proper health facilities & safety is provided to them.

Findings :-

- 1) Study reveals that most of the people are aware about the concept of women empowerment.
- 2) There are several government programmes in the country for empowerment of women but still there is wide gap that exist between those under protection & those not.
- 3) For empowering women first of all guarantee of health & safety is provided to them.
- 4) Study reveals that poverty & illiteracy are the main obstacles in women empowerment.
- 5) If we want to create a sustainable world, we must begin to empower women.
- 6) There is need to change the mind set of society towards women.

Suggestions for women empowerment:-

- 1) Education is provided to women so that they are aware about their rights.
- 2) Employment is provided to them so that they become self dependent.
- 3) Provide equality in all sphere of life.
- 4) Programmes which are for welfare of women should be strictly implemented.
- 5) Awareness programmes should be conducted in rural areas.
- 6) Providing minimum needs like nutrition, health, sanitation, housing to women.
- 7) Society should change the mentality towards women.
- 8) Encouraging women to develop themselves in their fields they are good.

Conclusions :-

Researcher find out that various schemes are introduced by government for improving position of women but there is still gap exist between where we are and where we want to reach for this awareness among women should be created, education is provided to them so that they take the benefit of schemes which are for the. Safety is very necessary because if they feel safe out of home only then they can take advantage of opportunities available to them.

So education & safety is most important and necessary for empowerment of women. And attitude of society is necessary to change because when they are supported only then they achieve success in every field of life. So for empowerment of women necessary steps should be taken such as provide safety, health benefits, awareness programmes and provide other facilities. When these facilities are provided to women only then women empowerment is possible which also leads to development of country. So if we want to develop a country first we developed women of that country.

References :-

- 1) World Economic forms (2012) The global Gender Gap Report – 2012.
- 2) Sunita Kishor and Kamla Gupta (2009) Gender Equality and Women Empowerment in India, National Family health survey (WFHS-3) India – 2005-06.
- 3) UNDP (2011) Human Development Report – 2017.
- 4) Femida Handy and Meenaz Kassam (2004) "Women Empowerment in Rural India" Paper presented at the ISTR conference, Toronto, Canada, July 2004.
- 5) Deflo E(2011) Women's Empowerment and Economic Development, National Bureau of Economic Research, Cambridge.
- 6) Goswami L (2013) Education for Women Empowerment ABHIBYAKTI: Annual Journal 1, 17-18.
- 7) www.iaspaper.net/women-empowerment-in-india/amp/
- 8) en.wikipedia.org/wiki/women_in.india
- 9) www.imporantindia.com/19050/essay-on-women-empowerment/

MEASUREMENT OF RISK AND RETURN PERFORMANCE OF SELECTIVE BALANCED INDIAN MUTUAL FUND SCHEMES

Dr. Sanjay Kumar Patel, Assistant Professor

Department of Commerce, Central University of Rajasthan,

Kishangarh, Ajmer-305817

E-mail : sanjaypatel@curaj.ac.in

Poonam Kumari, Research Scholar

Department of Commerce, Central University of Rajasthan,

Kishangarh, Ajmer– 305817

Abstract:

The balanced mutual fund scheme is the prevalent scheme amongst the moderate investors due to balanced risk and return aspect. A balanced fund is a hybrid funds stick to a relatively fixed mix of stocks and bonds component and, sometimes, a money market component, in a single portfolio reflects either a moderate (higher equity component) or conservative (higher fixed-income component) orientation. It is geared toward investors who are looking for a mixture of safety, income and modest capital appreciation.

The study measures the risk and return performance of balanced mutual fund of selected banks by setting the parameters such as Return, Standard Deviation, Sharpe's Ratio, Risk Adjusted CAGR, Expense Ratio, etc. The study finds that the growth option of balanced schemes are the good choice to the investors has different investing needs.

Key words: - Balanced Mutual Fund, NAV, AUM, Sharpe Ratio, Risk Adjusted CAGR.

Introduction:

A balanced fund¹ is a fund that combines a stock component, a bond component and, sometimes, a money market component, in a single portfolio. Generally, these hybrid funds stick to a relatively fixed mix of stocks and bonds that reflects either a moderate (higher equity component) or conservative (higher fixed-income component) orientation. This fund is design basically for investors having needs a mixture of safety, income and modest capital appreciation. The amounts that such a mutual fund invests into each asset class usually must remain within a set minimum and maximum.

Balanced funds with equal allocation to equities and fixed income securities are ideal for investors looking for a combination of return and moderate growth. The ratio is indicated in their offer document which affects the risks and the returns associated with the balanced fund. In case equities are allocated a higher proportion, investors would be

¹ <http://www.investopedia.com/terms/b/balancedfund.asp#ixzz4D2MWneaV>

exposed to risks similar to that of the equity market.

It is most appropriate for investors who aim to benefit from the positive aspect of equity markets exclusive of being very aggressive. They intend to trim down the risks of investing in stocks by having a stake in debt market. These schemes provide some elasticity in changing the asset in one hand debt brings stability during market depressions and unpredictable phases, on the other hand stocks offer growth. Since the return on diverse types of assets rise and fall at various times, the risk is more often lesser in balanced schemes as compared to that in solely growth or income schemes.

Review of Literature:

The investment decision of investors is highly associated with risk and return but it is changed as per the development of financial system in the country. Before liberalization, the expense associated with funds is very high. Thus, the expenses ratio plays a significant role in selecting the investment avenues (**Sharpe W. F. 1966**). After liberalization, the AMC's was ready to develop the scheme suited to the diverse range of investors and focusing the scheme of open ended as well as close ended. The close ended funds were performing better than open ended funds (**Sarkar & Majumadar, 1995**).

The volatility of market generated lots of issues related to the investment. Thus, the returns, benchmark comparison, diversification, selectivity & market timing skills in performance of mutual fund were considered the main factors of study (**Jaydev. M., 1996**). Further, the fund size, age, fund's sales charge, maturity, turnover ratio and cash ratio also play the role in investment decision (**Malhotra and McLeod (1997)**).

The clash of stock market pins the investor towards the regular return and income based schemes are now in main stream of the AMC's views (**Bala, Ramaswamy, Mathew, C. H. and Yeung , 2003**). The numbers of risk taker (investors) was growing rapidly in the market for higher returns entice the financial organization toward the growth schemes (**Sondhi, H.J., & Jain, P.K., 2010**).

The diversified need of investors and cut-throat competition generated several type of pressure on AMC's to offer the schemes having all matured features to satisfy the investors and capture the market share of competitors (**Goel & Gupta, 2014**). Thus, the financial organization developed the hybrid schemes which are mixture of income as well as growth schemes. The balanced mutual fund schemes are flourished leaps and bound. But, the question is which scheme provide better risk return trade-off for moderate investors (**Debasish, 2009**). The present study confined with some selected growth and dividend option balanced MF scheme sponsored by public sector banks.

The balanced scheme is very popular amongst the moderate investors due to balanced risk and return aspect. Therefore, a number of balanced schemes are floating in the markets to skim the market. The table-1 reflects a brief introduction of the features of selected balanced schemes. Fund category for all the selected schemes is Hybrid Equity Oriented. All the funds are open ended having growth option as well as dividend option available.

Table-1: Key Features of the Selected Balanced Schemes

Scheme Name	Date of Inception	Minimum Investment (Rs.)	NAV as on 1 st April 2005		NAV as on 31 st March 2015	
			D	G	D	G
SBI Magnum Balanced Fund	December 1995	5000	16.74	18.90	29.12	94.96
Baroda Pioneer Balanced Fund	September 2003	5000	16.09	16.04	25.86	43.49
Canara Robaco Balanced Fund	February 1993	5000	19.30	19.30	82.32	112.32

Source: valueresearchonline.com

Note: G = growth option

D= dividend option

Features like date of inception, minimum investment required, category, NAV in the beginning of the study and the end of the study are shown in table-1: Canara Robeco is the oldest fund in term of date of inception and Baroda Pioneer is newest balanced scheme in the selected fund (table 1). The minimum investment amount for all the scheme is equal i.e Rs. 5000. The growth option of the selected fund provides greater return than dividend option and Canara Robeco provides better result than other selected balanced fund.

Objective of the Study:

The study is basically concentrated on the measurement of risk and return performance associated with selected balanced mutual fund schemes. Therefore, the formulated objectives are:

- 1) To examine the growth pattern in terms of Schemes Number and Assets Under Management (AUM) of balanced mutual fund schemes.
- 2) To measure the return performance of selected balanced mutual fund schemes with the help of Average annual NAV, Total Return and its Compound Annual Growth Rate.
- 3) To measure the risk efficiency of SBI, Canara and BOB sponsored balanced mutual fund schemes with the help of Standard Deviation, Sharpe's Ratio, Expense Ratio.

Hypotheses of the Study: The hypotheses being tested are:

- 1) H₁: There is no significant difference between the risk and return performance of balanced scheme sponsored by SBI, Canara and BOB.
- 2) H₂: There is no significance difference between growth and dividend option of balanced mutual fund.

Significance of the Study:

The analysis of risk and return performance of balanced mutual fund scheme is helpful to know the risk-return association and its impact on return in term of regular income and capital appreciation. The study is also examined variance in dividend and growth option of selected balanced schemes. Thus, the study provides the information for selecting the best balanced schemes as per risk return trade-off for moderate investors.

Research Design:

Scope of the Study	Indian mutual fund industry
Period of the study	from 2006 to 2015
Nature and Source of study	Analytical research and secondary source of data collected from financial statements of the companies, SEBI and other reputed sources
Target population	Balanced mutual fund scheme sponsored by public sector banks
Sampling size	3 (SBI Magnum Balanced Fund, Baroda Pioneer Balanced Fund and Canara Robaco Balanced Fund)
Sampling Method	Stratified Random Sampling (Growth and Dividend Option Funds)
Analysis Design	Descriptive Statistics, Standard Deviation, Sharpe Ratio, Risk Adjusted CAGR, Expense Ratio and Analysis of Variances (ANOVA)
Variables	The risk and return performance are taken as Explanatory Variables

Results and Findings of Balanced Mutual Fund Schemes:

The hybrid mutual fund like balanced scheme is very popular amongst the investors. In the study, its performance measurement is done on the basis of defined parameters such as Number of Income Schemes and Assets Under management (AUM) of Income Schemes, Average annual NAV, Total Return, Standard Deviation, Sharpe's Ratio, Compound Annual Growth Rate, Expense Ratio and Statistical testing of significant difference.

1. Growth in the Numbers and AUM of Balanced Schemes:

Increasing the number and corpus of the scheme is simply measures the growth and popularity of the scheme. Table 2 presents detailed picture of the growth of all balanced schemes operating in the Indian Mutual Fund market which categorized as open ended and close ended scheme. It also shows the AUM as on 31st March of every year of the study period i.e. from 31st March 2006 up to 31st March 2015.

Table –2: Balance Schemes in India in terms of no. of schemes (As on 31st March)

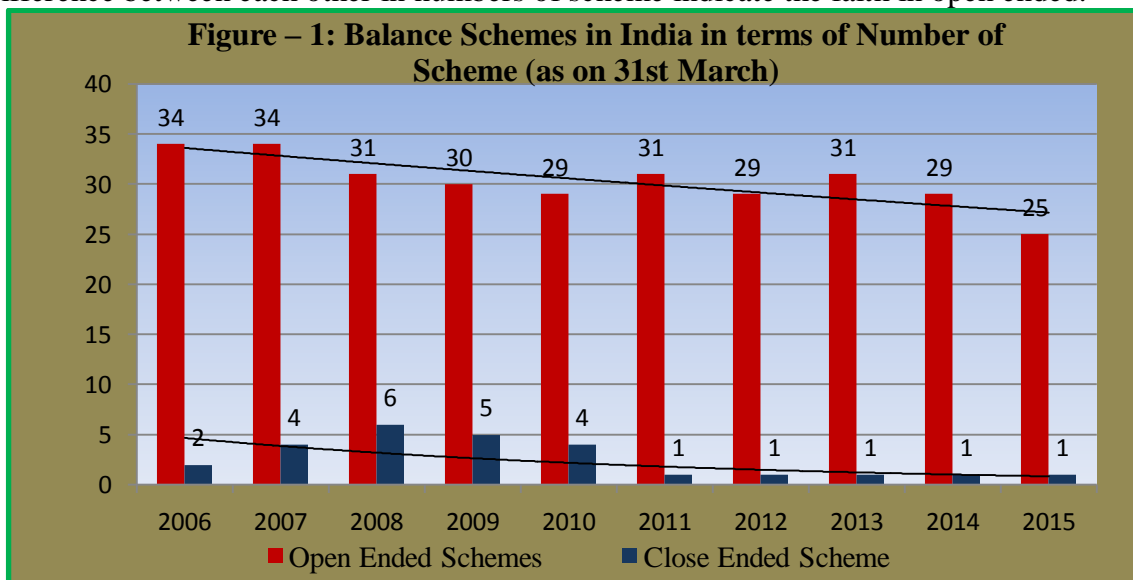
Year	Open Ended Scheme	Close Ended Scheme	Total Schemes	AUM (Cr.)
2006	34	2	36	7493
2007	34	4	38	9110
2008	31	6	37	16283
2009	30	5	35	10629
2010	29	4	33	17246
2011	31	1	32	18445
2012	29	1	30	16261
2013	31	1	32	16307
2014	29	1	30	16793
2015	25	1	26	26368
Mean	30	3	33	15494
SD	3	2	4	5396

CV	9	75	11	35
Max	34	6	38	26368
Min	25	1	26	7493
CAGR (%)	-3	-7	-3	13

Source- www.sebi.gov.in

It is clear from the table 2 that there is very high disparity between the status of open ended and close ended schemes. The maximum number of open ended scheme is 34 schemes and minimum number is 25 schemes over the period whereas the maximum number of close ended scheme is 6 schemes and minimum numbers is 1 scheme only. The average number of open ended scheme is 30 with variation of 6% over the period but the average number of close ended scheme is 3 schemes with 75% of variation. It indicates the strong concentration of investors on the open ended scheme.

The figure 1 also reflects the trend and pattern of open ended and close ended balanced fund. Both open ended and close ended schemes show downward trend but very high difference between each other in numbers of scheme indicate the faith in open ended.



Source: compiled from the table-2

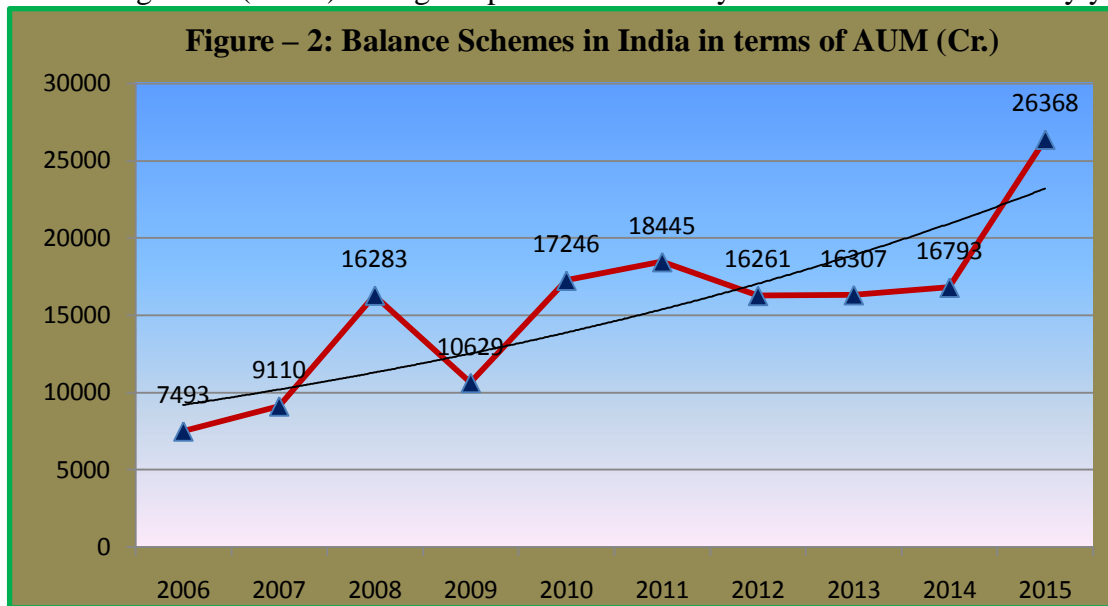
In the beginning, the total numbers of open ended balanced mutual funds schemes floating in the market were 34 and at the end of the study period they are at the level of 25. The open ended schemes were at the highest of 34 schemes in years 2006 and 2007. The best performance of close ended balanced mutual funds in terms of number of schemes floating in the market was on 31st March 2008 when they were at 6. On the whole, the scenario has been changed in the last decade as the total number of schemes (open and close ended) offered in this category has decreased from 36 in March 2006 to 26 in March 2015 after being at the maximum of 38 in March 2007.

Therefore, in terms of number of scheme, Open ended schemes are performing better than close ended schemes. It can be adjudged that people who invest in balanced mutual

funds are more interested in making some quick bucks rather than sticking to the same fund for years and waiting for the increase in their value. However, despite of their popularity, both types of schemes have seen a decrease trend in their numbers in the last few years.

2. AUM of Balanced Schemes:

The total value of assets that a mutual fund administers for itself and its customers is known as Assets Under Management. This value reflects position in the market and shows success. Figure 2 depicts the growth of all the balanced schemes of India in terms of total Assets Under Management (AUM) during the period of the study as on 31st March of every year.



Source: Compiled from the table-2

The Assets Under Management (AUM) of this category had seen a huge decline in the year 31st March 2008 to 31st March 2009 from Rs. 16,283 to Rs. 10,629 crores. On the other hand the highest growth was in the year 2008 from Rs. 9,110 crores (31st March 2007) to Rs. 16,283 crores and in 2015 from Rs. 16,793 to Rs. 26,368 crores. The average amount of AUM for the period is Rs. 15,494 crores with 35% variance. The CAGR for the period is 13% which shows increasing trends. The situation in totality i.e. total Assets Under Management of balanced schemes was more than three times in comparison to March 2006 and March 2015.

3. Average Annual Net Assets Value (NAV):

Net Assets Value is the best measure of profitability (return) performance of any scheme. Table-3 shows annual average NAVs and percentage growth over the previous year of the balanced schemes. The NAV of dividend option and growth option of all the selected balanced schemes have also been mentioned. The highest annual average NAV recorded by Canara Robeco balanced fund was Rs. 112.32 (growth option) in the year 2014-15

and minimum was Rs. 17.16 by Baroda Pioneer Balanced Fund (growth option) in the year 2007-08. Even in case of dividend option, Canara Robeco balanced fund provides highest NAV at Rs. 82.32. Growth option performs better than dividend option of balanced fund.

On the basis of average annual NAV Canara Robeco Balanced Fund has performed better during the study period with highest NAV of Rs. 112.32 (growth option) in the year 2014-2015. In terms of percentage growth, Canara Robeco balanced funds have provided maximum growth of 73.24% in the 2009-10 (in growth option). On the other hand the Baroda Pioneer Balance fund showed the most negative growth of -36.07% (growth option) in the year 2008-09.

As per table 3 Baroda Pioneer and SBI balanced schemes shows the fluctuating position during the study period where as Canara Robeco balanced schemes has shows an upward trend in the complete period of study except in the years 2008-09 which was the year of economic slowdown caused by the sub-prime crisis of America. All the schemes in this time period showed a negative growth rate.

Table –3: Comparative Table for Annual Average NAV of Selected Banks' Balanced Mutual Fund Schemes
(As on 31st March 2015)

YEAR	SBI Balanced Fund				Baroda Pioneer Balanced Fund				Canara Robeco Balanced Fund			
	D	%	G	%	D	%	G	%	D	%	G	%
2005-06	22.95		31.44		23.86		23.80		34.99		34.99	
2006-07	24.70	7.63	33.84	7.63	22.16	-7.12	22.07	-7.27	35.71	2.06	35.71	2.06
2007-08	26.30	6.48	40.67	20.18	27.12	22.38	26.84	21.61	43.62	22.15	43.62	22.15
2008-09	18.57	-29.39	28.73	-29.36	17.34	-36.06	17.16	-36.07	31.65	-27.44	31.65	-27.44
2009-10	26.00	40.01	48.46	68.67	26.07	50.35	25.81	50.41	47.57	50.30	54.83	73.24
2010-11	24.87	-4.35	50.51	4.23	29.57	13.43	29.57	14.57	52.34	10.03	60.31	9.99
2011-12	23.21	-6.67	47.14	-6.67	27.36	-7.47	27.36	-7.47	52.89	1.05	62.77	4.08
2012-13	23.45	1.03	54.52	15.66	27.23	-0.48	29.11	6.40	56.87	7.53	67.49	7.52
2013-14	22.86	-2.52	66.11	21.26	27.80	2.09	33.63	15.53	61.23	7.67	78.11	15.74
2014-15	29.12	27.38	94.96	43.64	25.86	-6.98	43.49	29.32	82.32	34.44	112.32	43.80
Mean	24.20		49.64		25.44		27.88		49.92		58.18	
SD	2.77		19.60		3.52		7.09		15.07		24.52	
CV	11.45		39.48		13.85		25.42		30.19		42.14	
Max	29.12		94.96		29.57		43.49		82.32		112.32	
Min	18.57		28.73		17.34		17.16		31.65		31.65	
CAGR (%)	2.41		11.69		0.81		6.21		8.93		12.37	

Source: www.sebi.gov.in

Note: G = growth option D = dividend option (% = % growth over the previous year NAV)

The least affected by this slowdown of economy was Canara Robeco Balanced Fund which declared a negative growth percentage of -27.44 % and the most effected was Baroda Pioneer Balanced dividend option plan which confirmed a growth percentage of -36.07%.

In the dividend option of balanced fund, The mean of NAV over the period is Rs. 24.20 with variation (CV) of 11.45% in SBI balanced, Rs. 25.44 with variation of 13.85% in Baroda Pioneer and Rs. 49.92 with variation of 30.19% in Canara Robeco (Table 3). In the growth option of balanced fund, the average NAV of Canara Robeco for the study period is Rs. 58.92 which is greater than the Baroda Pioneer (Rs. 27.88) and SBI balanced (Rs. 49.64). The overall growth rate (CAGR) of Canara Robeco is highest both in dividend option and growth option than other banks' balanced fund. Thus, it can be summed up that Canara Robeco balanced schemes are performing better than their counterparts.

4. Total Return

Total return is, the measurement of overall return performance of scheme, the difference between the net asset value (NAV) of two separate dates divided by the NAV of the preceding date. It has been calculated on the basis of the NAV in the beginning (as on 1st April 2005) of the study and at the end (as on 31st March 2015) of the study. Total returns earned in the last decade ending on 31st March 2015 by the selected balanced plans are mentioned in Table-4 for both growth and dividend options.

Table – 4: Comparative Table of Total Return in Balanced Schemes (%)
(As on 31st March 2015)

SBI Balance Fund		BOB Pioneer Balance Fund		Canara Robeco Balance Fund	
Growth	Dividend	Growth	Dividend	Growth	Dividend
402.43	73.95	171.13	60.72	481.97	326.53

Source: Calculated from the table -3

In term of total return, Canara Robeco Balanced Fund (growth option) recorded highest total return of 481.97% during the ten years of the study. SBI Balanced Plan (growth option) held the second position with a total return of 402.43% (table 4). It is clear from the given table that growth options of all the balanced schemes are giving high returns as compared to the dividend options. In the dividend option, Canara Robeco provides highest return in comparison to SBI's and BOB's balanced funds. Hence, it can be concluded that Canara Robeco balanced schemes is clear winner in terms of total return gathered in the last decade.

5. Standard Deviation

A higher value of standard deviation means more deviation from its average rate of return.

Table-5 depicts the standard deviation of selected balanced schemes as on 31st March 2015.

Table – 5: Comparative Table of Standard Deviation in Balanced Schemes (%)
(As on 31st March 2015)

SBI Balance Fund		BOB Pioneer Balance Fund		Canara Robaco Balance Fund	
Growth	Dividend	Growth	Dividend	Growth	Dividend
19.60	2.77	7.08	3.52	24.51	15.07

Source: compiled from table-3

The standard Deviation of dividend option of SBI Balanced Fund (2.77%) is lowest which means it is giving more consistent returns to its average return rate. Second position is held by BOB Pioneer balanced plan dividend option (3.52%). The highest standard deviation is recorded at 24.51% by Canara Robeco Balance plan growth option. However, it is only due to the tremendous increase in the return over the period. On the basis of the above table it can be concluded that BOB Pioneer balanced schemes have provided returns in more propinquity to their average returns but Canara Robeco have incremental return opportunity for the investors.

6. Sharpe's Ratio

If value of the Sharpe's ratio is higher, the fund is expected to be more risk adjusted. Sharpe's ratio, is a ratio of returns generated by the fund over and above risk free rate of return and the total risk related with it. The table 6 represents the Sharpe's ratio of all the selected schemes as on 31st March 2015. Table 6 shows that all the selected balanced schemes are giving a positive Sharpe's ratio. As the sharpe's ratio indicates that the fund with the higher ratio will be more risk adjusted or better performer. Hence, the SBI Balance fund with dividend option (6.23) has been able to reduce the loss per unit of risk of investors.

Table – 6: Comparative Table of Sharpe's Ratio in Balanced Schemes (%)
(As on 31st March 2015)

SBI Balance Fund		BOB Pioneer Balance Fund		Canara Robaco Balance Fund	
Growth	Dividend	Growth	Dividend	Growth	Dividend
2.18	6.23	2.95	5.26	2.09	2.73

Source: Compiled from table- 3

The riskiest corpus is of Canara Robeco Balanced Fund growth option inwhich Shape's ratio is 2.09. As far as the risk factor is concerned it can be concluded that all three public sector bank sponsored balanced funds are not equally volatile. This is because of the continuous variation in the market seen in the last decade. One more thing which can be said on the basis of the above table that unlike in case of other parameters, under Sharpe's ratio both dividend and growth options are not performing similarly except Canara Robeco Balance Fund.

7. Compound Annual Growth Rate:

The growth rate of Balanced Schemes calculated on the basis of average annual return of the year starting from 2000-2001 up to 2014-2015. The table 6.38 shows the Compound Annual Growth Rate of the selected Balanced Schemes.

Table – 7: Comparative Table of CAGR in Balanced Schemes (%)
(As on 31st March 2015)

SBI Balance Fund		BOB Pioneer Balance Fund		Canara Robeco Balance Fund	
Growth	Dividend	Growth	Dividend	Growth	Dividend
11.69	2.41	6.21	0.81	12.37	8.93

Source: compiled from table 3

Table 7 clearly indicates that there is a huge variation in the CAGR values of selected balanced fund. The CAGR of Canara Robeco is highest in both Dividend option and growth option in the study period and BOB Pioneer has poor performance in both cases. Therefore as per the CAGR, the Canara Robeco provides best growth opportunity to the investors seeking investment in the balanced fund.

8. Expense Ratio:

An expense ratio is annual operating expenses divided by average annual net assets of a fund. This can be interpreted as the costs of running the fund, divided by the value of the assets under the purview of the fund's manager. Lower the expense ratio the better it is. The table 6.39 reflects the average expense ratios of the selected balanced schemes for the period starting from 1st April 2006 to 31st March 2015.

The minimum expense ratio recorded by Canara Robeco balanced plan at 1.00% during the study period. It indicates that only 1.00% of AUM was diverted towards the cost of operating of fund. The Baroda Pioneer shows the maximum ratio at 3.25% which indicates it is too costly than other selected fund. SBI Magnum Balanced Plan shows superior result than others in case of average expenses ratio which is 2.12% with variation of 13.13%. Hence on an overall basis it can be concluded that according to this parameter SBI Balance fund is performing better in comparison to other selected balanced schemes.

Table-8: Comparative Table of Expense Ratio of Balanced Scheme (%)
(As on 31st March 2015)

Scheme Name	SBI Balance Fund	BOB Pioneer Balance Fund	Canara Robeco Balance Fund
2005-06	2.14	1.61	1.00
2006-07	1.89	1.08	1.23
2007-08	2.50	2.50	2.44
2008-09	2.50	2.21	2.43
2009-10	1.78	1.25	2.39
2010-11	1.81	2.50	2.38
2011-12	1.82	2.50	2.38
2012-13	2.21	3.25	2.76
2013-14	2.28	3.19	2.80

2014-15	2.26	2.80	2.80
Average	2.12	2.29	2.26
SD	0.28	0.76	0.63
CV	13.13	33.01	27.93
Maximum	2.50	3.25	2.80
Minimum	1.78	1.08	1.00
CAGR (%)	0.55	5.69	10.84

Source: www.valueresearchonline.com

9. Measurement of Difference between Average NAVs of Selected Balanced Schemes:

The data for the balanced schemes was tested separately of growth and dividend option. All selected schemes have been justified by trying to know whether there is significant difference between the average NAVs of their balanced schemes or not. The ANOVA is applied to test the null hypothesis i.e. There is no significant difference between the mean of average NAVs of the selected balanced schemes.

Table – 9: ANOVA Results for Mean of NAVs of Balanced Schemes

		Sum of Squares	df	Mean Square	F	Sig.
GROWTH Option	Between Groups	4880.166	2	2440.083	7.070	.003
	Within Groups	9318.366	27	345.124		
	Total	14198	29			
Dividend Option	Between Groups	4207.345	2	2103.672	25.522	.000
	Within Groups	2225.420	27	82.423		
	Total	6432.766	29			

Table 6.40 shows the output of the ANOVA analysis and whether we have significant difference between the group means. In the case of both options significance level is 0.003 for growth and 0.000 for dividend, which is less than 0.05 and therefore null hypothesis is rejected. Therefore the mean of NAVs of the both options of the selected balanced schemes are significantly different. It indicate that the investors who invest in balanced mutual funds are more interested in making some quick return with liquidity rather than capital appreciation by blocking the fund over the period.

Conclusion:

The mutual funds in India are giving good returns, attracting more investments and have the caliber to handle market risks. A balanced fund is a fund that combines a stock component, a bond component and, sometimes, a money market component, in a single portfolio formulated for satisfying the diverse needs of investors such as safety, income and

modest capital appreciation. Canara Robeco is the oldest fund in term of date of inception and Baroda Pioneer is newest balanced scheme in the selected balanced mutual fund. The average number of open ended scheme is much higher than close ended scheme over the period. It indicates the strong concentration of investors in the open ended scheme. The conclusion as per the objectives is:-

- The average amount of AUM of balanced schemes was more than three times in March 2015 in comparison to March 2006 and The CAGR shows continuous increasing trends. The average annual NAV Canara Robeco Balanced Fund is highest and it shows an upward trend in the complete period of study. It can be summed up that Canara Robeco balanced schemes are performing better than their counterparts. The growth options of all the balanced schemes are giving high returns as compared to the dividend options. Canara Robeco Balanced Fund (growth option) recorded highest total return. Also, the CAGR of Canara Robeco is highest in both Dividend option and growth option of balanced fund in the study period
- The standard Deviation of dividend option of SBI Balanced Fund is lowest which offers lowest risk opportunity for the investors. The Canara Robeco is provided riskiest corpus of Balanced Fund. However, the minimum expense ratio recorded by Canara Robeco balanced plan which depict less costly than other selected fund. It concluded that if there is a possibility of extension the market and return, the Canara Robeco balanced plan will provide magnify growth in return.
- The significance level of both dividend and growth option balanced fund (ANOVA analysis) is less therefore null hypothesis is rejected. It mean of NAVs of the both options of the selected balanced schemes are significantly different. It can be adjudged that people who invest in balanced mutual funds are more interested in making some quick bucks rather than sticking to the same fund for years and waiting for the increase in their value.

References:

- Acharya, Debashis & Sidana, G. (2007). Classifying Mutual Funds in India: Some results from clustering. *Indian Journal of Economics and Business*, 6(1): 71-79.
- Bhole, L.M., (1999), *“Financial Institutions and Markets: Structure, Growth and Innovations” (Third Edition)*, Tata McGraw-Hill Publishing Company Limited, New Delhi, India.
- Campbell, David, “Industry Restructuring in Asia”, *Insurance Digest*, PWC, Asia Pacific Edition (April 2004), 22–25.
- Chang, Eric C., & Lewellen, Wilbur G. (1984). Market Timing and Mutual Fund Investment Performance. *The Journal of Business*. 57(1), 57-72.
- Debasish & Sathya, S. (2009). Investigating Performance of Equity-based Mutual Fund Schemes in Indian Scenario. *KCA Journal of Business Management*, 2(2):1-15.

Goel & Gupta (2014), Mutual Fund Industry in India: An Overview, International Journal of Emerging Research in Management & Technology ISSN: 2278-9359 (Volume-3, Issue-5)

Gujarati, D.N and Sangeetha., (2007), "*Basic Econometrics*" (Fourth Edition), Tata McGraw-Hill Publishing Company Limited, New Delhi, 396-450.

Gupta, M. and Aggarwal, N. (2007), "Performance of Mutual Funds in India: An Empirical Study", The IUP Journal of Applied Finance, Vol. 13, No. 9, pp. 5-16.

Gupta, Manak C. (1974). Mutual Fund Industry and Its Comparative Performance. The Journal of Quantitative and Financial Analysis. 9(5) (1974 Proceedings), 891-92.

Gupta, O.P. & Sehgal, S., (1997), Investment Performance of Mutual Funds-The Indian Express', 'Indian Capital Market-Trends & Dimensions', published in Tata McGraw Hill Publishing Company Ltd. pp 1-41.

J.Thomas Connelly "Board Characteristics and Firm Performance : Evidence from the Life Insurance Industry Thailand" Chulalongkorn, Journal of Economics 16(2) 2004.

Jayadev, M. (1996), "Mutual Fund Performance: An Analysis of Monthly Returns", Finance India, Vol. X, No.1, pp. 73-84.

Jaydev. M., (1996) Mutual Fund Performance: An Analysis of Monthly Returns', Finance India Vol. X, No. 1, (March), pp. 73-84.

King, R. G. and Levine, R., (1993b), "Finance, Entrepreneurship and Growth: Theory and Evidence", *Journal of Monetary Economics*, 32, 513-542.

Levine, R., (1997), "Financial Development and Economic Growth: Views and Agenda", *Journal of Economic Literature*, June, 35 (2), 688-726.

Malhotra & McLeod. (1997). An Empirical Analysis of Mutual Fund Expenses. Journal of Financial Research. 17(2), pp:145-164

Risk adjusted performance evaluation of Indian Mutual Funds, Finance India Vol. XX No. page 965-983.

Risk adjusted performance evaluation of Indian Mutual Funds, Finance India Vol. XX No. page 965-983.

Sarkar, J. & Majumadar S., (1995) Weak form of Efficient Market Hypothesis'. A Special Analytical Investigation', Vikalpa, (April-June)pp.25-30.

Sharpe, William F. (1966). Mutual Fund Performance. The Journal of Business. 39(1) Part 2: Supplement on Security Prices, 119-138.

Sharpe, William F. (1966). Mutual Fund Performance. The Journal of Business. 39(1) Part 2: Supplement on Security Prices, 119-138.

Sondhi, H.J., & Jain, P.K. (2010). Market Risk and Investment Performance of Equity Mutual Funds in India: Some Empirical Evidence. Finance India, XXIV (2):443-464.

Tripathy, N. P. (2006), "Market Timing Abilities and Mutual Fund Performance: An Empirical Investigation into Equity Linked Saving Schemes", XIMB Journal of Management, Vol. 3, No. 2, pp. 127-138.

Turan, M.S. and Bodla, B.S. (2001), Performance Appraisal of Mutual Funds, Excel Books, New Delhi.

Website:

www.investopedia.com

www.moneycontrol.com

www.barodapioneer.in

www.canararobeco.com

www.mutualfundsindia.com

www.rbi.org.in

www.sbimf.com

www.sebi.gov.in

www.valueresearchonline.com

A STUDY OF MARKETING PRACTICES OF ORGANIZED RETAIL OUTLET IN INDIA



ANJU (NET/UGC)

COMMERCE

MAHARSHI DAYANAND UNIVERSITY, ROHTAK

Abstract

India's retail market is expected to increase by 60 per cent to reach US\$ 1.1 trillion by 2020, on the back of factors like rising incomes and lifestyle changes by middle class and increased digital connectivity. Online retail sales are forecasted to grow at the rate of 31 per cent year-on-year to reach US\$ 32.70 billion in 2018. India is expected to become the world's fastest growing e-commerce market, driven by robust investment in the sector and rapid increase in the number of internet users. Various agencies have high expectations about growth of Indian e-commerce markets. Luxury market of India is expected to grow to US\$ 30 billion by the end of 2018 from US\$ 23.8 billion 2017 supported by growing exposure of international brands amongst Indian youth and higher purchasing power of the upper class in tier 2 and 3 cities, according to ASSOCHAM. The Indian retail trading has received Foreign Direct Investment (FDI) equity inflows totalling US\$ 1.59 billion during April 2000–December 2018, according to the Department for Promotion of Industry and Internal Trade (DPIIT). With the rising need for consumer goods in different sectors including consumer electronics and home appliances, many companies have invested in the Indian retail space in the past few months. Beccos, a South Korean designer brand is set to enter the Indian market with an investment of about Rs 1.00 billion (US\$ 14.25 million) and open 50 stores by June 2019. Walmart Investments Cooperative U.A has invested Rs 2.75 billion (US\$ 37.68 million) in Wal-Mart India Pvt Ltd.

Introduction

Retailing in India is one of the pillars of its economy and accounts for about 10 percent of its GDP. The Indian retail market is estimated to be US\$ 600 billion and one of the top five retail markets in the world by economic value. India is one of the fastest growing retail markets in the world, with 1.2 billion people. As of 2003, India's retailing industry was essentially owner manned small shops. In 2010, larger format convenience stores and supermarkets accounted for about 4 percent of the industry, and these were present only in large urban centers. India's retail and logistics industry employs about 40 million Indians (3.3% of Indian population). Until 2011, Indian central government denied foreign direct investment (FDI) in multi-brand retail, forbidding foreign groups from any ownership in supermarkets, convenience stores or any retail outlets. Even single-brand retail was limited to 51% ownership and a bureaucratic process. In November 2011, India's central government announced retail reforms for both multi-brand stores and single-brand stores. These market reforms paved the way for retail innovation and competition with multi-brand retailers such as Walmart, Carrefour and Tesco, as well single brand

majors such as IKEA, Nike, and Apple. The announcement sparked intense activism, both in opposition and in support of the reforms. In December 2011, under pressure from the opposition, Indian government placed the retail reforms on hold till it reaches a consensus. In January 2012, India approved reforms for single-brand stores welcoming anyone in the world to innovate in Indian retail market with 100% ownership, but imposed the requirement that the single brand retailer source 30 percent of its goods from India. Indian government continues the hold on retail reforms for multi-brand stores. In June 2012, IKEA announced it had applied for permission to invest \$1.9 billion in India and set up 25 retail stores. An analyst from Fitch Group stated that the 30 percent requirement was likely to significantly delay if not prevent most single brand majors from Europe, USA and Japan from opening stores and creating associated jobs in India. On 14 September 2012, the government of India announced the opening of FDI in multi-brand retail, subject to approvals by individual states. This decision was welcomed by economists and the markets, but caused protests and an upheaval in India's central government's political coalition structure.

Road Ahead

E-commerce is expanding steadily in the country. Customers have the ever increasing choice of products at the lowest rates. E-commerce is probably creating the biggest revolution in the retail industry, and this trend would continue in the years to come. India's e-commerce industry is forecasted to reach US\$ 53 billion by 2018. Retailers should leverage the digital retail channels (e-commerce), which would enable them to spend less money on real estate while reaching out to more customers in tier-2 and tier-3 cities. It is projected that by 2021 traditional retail will hold a major share of 75 per cent, organised retail share will reach 18 per cent and e-commerce retail share will reach 7 per cent of the total retail market. Nevertheless, the long-term outlook for the industry is positive, supported by rising incomes, favourable demographics, entry of foreign players, and increasing urbanisation. Exchange Rate Used: INR 1 = US\$ 0.0139 as on Q3 FY19. References: Media Reports, Press Releases, Deloitte report, Department of Industrial Policy and Promotion website, Union Budget 2017–18, Consumer Leads report by FICCI and Deloitte - October 2018

Challenges

A McKinsey study claims retail productivity in India is very low compared to international peer measures. For example, the labour productivity in Indian retail was just 6% of the labour productivity in United States in 2010. India's labour productivity in food retailing is about 5% compared to Brazil's 14%; while India's labour productivity in non-food retailing is about 8% compared to Poland's 25%. Total retail employment in India, both organised and unorganised, account for about 6% of Indian labour work force currently - most of which is unorganised. This about a third of levels in United States and Europe; and about half of levels in other emerging economies. A complete expansion of retail sector to levels and productivity similar to other emerging economies and developed economies such as the United States would create over 50 million jobs in India. Training and development of labour and management for higher retail productivity is expected to be a challenge.

India Retail Reforms

Until 2011, Indian central government denied foreign direct investment (FDI) in multi-brand Indian retail, forbidding foreign groups from any ownership in supermarkets, convenience stores or any retail outlets, to sell multiple products from different brands directly to Indian consumers.

The government of Manmohan Singh, prime minister, announced on 24 November 2011 the following:

- India will allow foreign groups to own up to 51 per cent in "multi-brand retailers", as supermarkets are known in India, in the most radical pro-liberalisation reform passed by an Indian cabinet in years;
- single brand retailers, such as Apple and Ikea, can own 100 percent of their Indian stores, up from the previous cap of 51 percent;
- both multi-brand and single brand stores in India will have to source nearly a third of their goods from small and medium-sized Indian suppliers;
- all multi-brand and single brand stores in India must confine their operations to 53-odd cities with a population over one million, out of some 7935 towns and cities in India. It is expected that these stores will now have full access to over 200 million urban consumers in India;
- multi-brand retailers must have a minimum investment of US\$100 million with at least half of the amount invested in back end infrastructure, including cold chains, refrigeration, transportation, packing, sorting and processing to considerably reduce the post harvest losses and bring remunerative prices to farmers;
- the opening of retail competition will be within India's federal structure of government. In other words, the policy is an enabling legal framework for India. The states of India have the prerogative to accept it and implement it, or they can decide to not implement it if they so choose. Actual implementation of policy will be within the parameters of state laws and regulations.

The opening of retail industry to global competition is expected to spur a retail rush to India. It has the potential to transform not only the retailing landscape but also the nation's ailing infrastructure.,

A Wall Street Journal article claims that fresh investments in Indian organised retail will generate 10 million new jobs between 2012–2014, and about five to six million of them in logistics alone; even though the retail market is being opened to just 53 cities out of about 8000 towns and cities in India

Single-Brand Retail Reforms Approved

On 11 January 2012, India approved increased competition and innovation in single-brand retail. The reform seeks to attract investments in operations and marketing, improve the availability of goods for the consumer, encourage increased sourcing of goods from India, and enhance competitiveness of Indian enterprises through access to global designs, technologies and management practices. In this announcement, India requires single-brand retailer, with greater than 51% foreign ownership, to source at least 30% of the value of products from Indian small industries, village and cottage industries, artisans and craftsmen. Mikael Ohlsson, chief executive of IKEA, announced IKEA is postponing its plan to open stores in India. He claimed that IKEA's decision reflects India's requirements that single-brand retailers such as IKEA source 30 percent of their goods from local small and medium-sized companies. This was an obstacle to IKEA's investment in India, and that it will take IKEA some time to source goods and develop reliable supply chains inside India. Ikea announced that it plans to double what it sources from India already for its global product range, to over \$1 billion a year, within three years. IKEA in the near term, plans to focus expansion instead in China and Russia, where such restrictions do not exist. On 19 Feb 2013 Tamil Nadu became the first state in the country to stoutly resist MNC 'invasion' into the domestic retail sector. In Chennai, Tamil Nadu CMDA authorities placed a seal on the massive warehouse spreading across 7 acres that had reportedly been built for one of the world's leading multinational retail giants, Wal-mart. Slowly and gradually the domestic retail players like Future Retail, Avenues Supermarket and Aditya Birla Fashion and Retail started flourishing and brought about a massive change in the retail environment in India. These local retailers have been challenging the MNCs trying to foray into the country like Walmart, Carrefour, etc. and making the invasion even more difficult for them.

Controversy Over Allowing Foreign Retailers

Critics of deregulating retail in India are making one or more of the following claims:

- Independent stores will close, leading to massive job losses. Walmart employs very few people in the United States. If allowed to expand in India as much as Walmart has expanded in the United States, few thousand jobs may be created but millions will be lost.
- Walmart's efficiency at supply chain management leads to direct procurement of goods from the supplier. In addition to eliminating the "middle-man", due to its status as the leading retailer, suppliers of goods are pressured to drop prices in order to assure consistent cash flow.
- The small retailer and the middle man present in the retail industry play a large part in supporting the local economy, since they typically procure goods and services from the area they have their retail shops in. This leads to increased economic activity, and wealth redistribution. With large, efficient retailers, goods are acquired in other regions, hence reducing the local economy.
- Walmart may lower prices to dump goods, get competition out of the way, become a monopoly, then raise prices. It is argued this was the case of the soft drinks industry, where Pepsi and Coca-Cola came in and wiped out all the domestic brands.
- India doesn't need foreign retailers, since homegrown companies and traditional markets have been able to do the job.
- Work will be done by Indians, profits will go to foreigners.
- Like the East India Company, Walmart could enter India as a trader and then take over politically.
- There will be sterile homogeneity and Indian cities will look like cities anywhere else.
- The government hasn't built consensus.
- The government claims modern retail will create 4 million new jobs. This cannot be true because Walmart, with over 9000 stores worldwide, has only 2.1 million employees. By allowing modern retail there could be more stores in total than Walmart has over the world, it's not unfeasible for 20,000 stores in India which would indeed create more than 4 million jobs. Let's not forget that India has ~3 times the population of the United States.
- The Democratic staff of the U.S. House Committee on Education and the Workforce Report- Wal-Mart's low wages and their effect on taxpayers and economic growth

Opposition To Retail Reforms

Within a week of retail reform announcement, Indian government has faced a political backlash against its decision to allow competition and 51% ownership of multi-brand organised retail in India. Despite the fact that Salman Khurshid, India's law minister, claiming that many opposition parties, including the Bharatiya Janata Party, had privately encouraged the government to push through the retail reform, the intense criticism now targets Congress-led coalition government, and its decision to push through one of the biggest economic reforms in years for India. Opposition parties claim supermarket chains are ill-advised, unilateral and unwelcome. The opposition claims the entry of organised retailers would lead to their dominance that would decimate local retailers and force millions of people out of work. Mamata Banerjee, the chief minister of West Bengal and the leader of the Trinamool Congress, announced her opposition to retail reform, claiming "Some people might support it, but I do not support it. You see America is America ... and India is India. One has to see what one's capacity is". Other states whose Chief Ministers have either personally announced opposition or announced reluctance to implement the retail reforms: Tamil Nadu, Uttar Pradesh, Bihar and Madhya Pradesh. Chief Ministers of many states have not made a personal statement in opposition or support of India needing retail reforms. Gujarat, Kerala, Karnataka and Rajasthan are examples of these states. Both sides have made conflicting claims about the position of chief ministers from these states. A Wall Street Journal article reports that in Uttar

Pradesh, Uma Bharti, a senior leader of the opposition Bharatiya Janata Party (BJP), threatened to "set fire to the first Wal-Mart store whenever it opens;" with her colleague Sushma Swaraj busy tweeting up a storm of misinformation about how Wal-Mart allegedly ruined the U.S. economy.

On 1 December 2011, an India-wide "bandh" (close all business in protest) was called by political parties opposing the retail reform. While many organisations responded, the reach of the protest was mixed. The Times of India, a national newspaper of India, claimed people appeared divided over the bandh call and internal rivalry among trade associations led to a mixed response, leaving many stores open day-long and others opening for business as usual in the second half of the day. Even Purti Group, a network of stores owned and operated by Nitin Gadkari were open for business, ignoring the call for bandh. Gadkari is the president of BJP, the key party currently organising opposition to retail reform. The Hindu, another widely circulated newspaper in India, claimed the opposition's call for a nationwide shutdown on 1 December 2011, in protest of retail reform received a mixed response. Some states had strong support, while most did not. Even in states where opposition political parties are in power, many ignored the call for the shutdown. In Gujarat, Bihar, Delhi, Andhra Pradesh, Haryana, Punjab and Assam the call evoked a partial response. While a number of wholesale markets observed the shutdown, the newspaper claimed a majority of kirana stores and neighborhood small shops – for whom apparently the trade bandh had been called – remained open, ignoring the shutdown call. Conflicting claims were made by the organisers of the nationwide shutdown. Contrary to eyewitness reports, one Trader union's secretary general claimed traders across the country participated wholeheartedly in the strike. The political parties opposing the retail reforms physically disrupted and forced India's parliament to adjourn again on Friday 2 December 2011. The Indian government refused to cave in, in its attempt to convince through dialogue that retail reforms are necessary to protect the farmers and consumers. Indian parliament has been dysfunctional for the entire week of 28 November 2011 over the opposition to retail reforms.

Support For Retail Reforms

In a pan-Indian survey conducted over the weekend of 3 December 2011, overwhelming majority of consumers and farmers in and around ten major cities across the country support the retail reforms. Over 90 per cent of consumers said FDI in retail will bring down prices and offer a wider choice of goods. Nearly 78 per cent of farmers said they will get better prices for their produce from multi-format stores. Over 75 per cent of the traders claimed their marketing resources will continue to be needed to push sales through multiple channels, but they may have to accept lower margins for greater volumes. A study in India on title 'Foreign Direct Investment In Indian Retail Sector: Drawing lessons from the international experience', concluded that the entry of FDI in multi brand retail in India can be growth enhancing only if proper safeguards are in place and the market environment is regulated. Firstly, the resources should be dedicated for a comprehensive study of retail and its related industries. Secondly, the number of big retail outlets in a particular city should be decided on the basis of population criterion and the employment level of local youth in the retail business. Thirdly, the format of these retail chains should also be regulated as is done in Malaysian case. They should not be in the form of neighborhood convenience store and there should be minimum and maximum limit of the size of these stores. Fourthly, it is important to ensure that no single retailer monopolizes the procurement operations in an area, district or state in order to protect the local suppliers. Lastly, the predatory pricing and the anti competitive practices of these international retailers should be prohibited in order to create a playing field for local retailers.

Farmer groups

Various farmer associations in India have announced their support for the retail reforms. For example:

- Shriram Gadhve of All India Vegetable Growers Association (AIVGA) claims his organisation supports retail reform. He claimed that currently, it is the middlemen commission agents who benefit at the cost of farmers. He urged that the retail reform must focus on rural areas and that farmers receive benefits. Gadhve claimed, "A better cold storage would help since this could help prevent the existing loss of 34% of fruits and vegetables due to inefficient systems in place." AIVGA operates in nine states including Maharashtra, Andhra Pradesh, West Bengal, Bihar, Chhattisgarh, Punjab and Haryana with 2,200 farmer outfits as its members.
- Bharat Krishak Samaj, a farmer association with more than 75,000 members says it supports retail reform. Ajay Vir Jakhar, the chairman of Bharat Krishak Samaj, claimed a monopoly exists between the private guilds of middlemen, commission agents at the sabzi mandis (India's wholesale markets for vegetables and farm produce) and the small shopkeepers in the unorganised retail market. Given the perishable nature of food like fruit and vegetables, without the option of safe and reliable cold storage, the farmer is compelled to sell his crop at whatever price he can get. He cannot wait for a better price and is thus exploited by the current monopoly of middlemen. Jakhar asked that the government make it mandatory for organised retailers to buy 75% of their produce directly from farmers, bypassing the middlemen monopoly and India's sabzi mandi auction system⁴.
- Consortium of Indian Farmers Associations (CIFA) announced its support for retail reform. Chengal Reddy, secretary general of CIFA claimed retail reform could do lots for Indian farmers. Reddy commented, "India has 600 million farmers, 1,200 million consumers and 5 million traders. I fail to understand why political parties are taking an anti-farmer stand and worried about half a million brokers and small shopkeepers". CIFA mainly operates in Andhra Pradesh, Karnataka and Tamil Nadu; but has a growing members from rest of India, including Shetkari Sanghatana in Maharashtra, Rajasthan Kisan Union and Himachal Farmer Organisations.
- Prakash Thakur, the chairman of the People for Environment Horticulture & Livelihood of Himachal Pradesh, announcing his support for retail reforms claimed FDI is expected to roll out produce storage centers that will increase market access, reduce the number of middlemen and enhance returns to farmers. Highly perishable fruits like cherry, apricot, peaches and plums have a huge demand but are unable to tap the market fully because of lack of cold storage and transport infrastructure. Sales will boost with the opening up of retail. Even though India is the second-largest producer of fruits and vegetables in the world, its storage infrastructure is grossly inadequate, claimed Thakur.
- Sharad Joshi, founder of Shetkari Sangathana (farmers association), has announced his support for retail reforms. Joshi claims FDI will help the farm sector improve critical infrastructure and integrate farmer-consumer relationship. Today, the existing retail has not been able to supply fresh vegetables to the consumers because they have not invested in the backward integration. When the farmers' produce reaches the end consumer directly, the farmers will naturally be benefited. Joshi feels retail reform is just a first step of needed agricultural reforms in India, and that the government should pursue additional reforms.

Economists and entrepreneurs

Many business groups in India are welcoming the transformation of a long-protected sector that has left Indian shoppers bereft of the scale and variety of their counterparts in more developed markets. B. Muthuraman, the president of the Confederation of Indian Industry, claimed the retail reform would open enormous opportunities and lead to much-needed investment in cold chain, warehousing and contract farming.

Organised retailers will reduce waste by improving logistics, creating cold storage to prevent food spoilage, improve hygiene and product safety, reduce counterfeit trade and tax evasion on expensive item purchases, and create dependable supply chains for secure supply of food staples, fruits and vegetables. They will increase choice and reduce India's rampant inflation by reducing waste, spoilage

and cutting out middlemen. Fresh investment in organised retail, the supporters of retail reform claim will generate 10 million new jobs by 2014, about five to six million of them in logistics alone.

Organised retail will offer the small Indian farmer more competing venues to sell his or her products, and increase income from less spoilage and waste. A Food and Agricultural Organisation report claims that currently, in India, the small farmer faces significant losses post-harvest at the farm and because of poor roads, inadequate storage technologies, inefficient supply chains and farmer's inability to bring the produce into retail markets dominated by small shopkeepers. These experts claim India's post-harvest losses to exceed 25%, on average, every year for each farmer., Unlike the current monopoly of middlemen buyer, retail reforms offer farmers access to more buyers from organised retail. More buyers will compete for farmers produce leading to better support for farmers and to better bids. With less spoilage of staples and agricultural produce, global retail companies can find and provide additional markets to Indian farmers. Walmart, since its arrival in India's wholesale retail market, already sources and exports about \$1 billion worth of Indian goods for its global customers.

Not only do these losses reduce food security in India, the study claims that poor farmers and others lose income because of the waste and inefficient retail. Over US\$50 billion of additional income can become available to Indian farmers by preventing post-harvest farm losses, improving transport, proper storage and retail. Organised retail is also expected to initiate infrastructure development creating millions of rural and urban jobs for India's growing population. One study claims that if these post-harvest food staple losses could be eliminated with better infrastructure and retail network in India, enough food would be saved every year to feed 70 to 100 million people over the year. Supporters of retail reform, The Economist claims, say it will increase competition and quality while reducing prices helping to reduce India's rampant inflation that is close to the double digits. These supporters claim that unorganised small shopkeepers will continue to exist alongside large organised supermarkets, because for many Indians they will remain the most accessible and most convenient place to shop. Amartya Sen, the Indian-born Nobel Prize-winning economist, in a December 2011 interview claims foreign direct investment in multi brand retail can be good thing or bad thing, depending on the nature of the investment. Quite often, claims Professor Sen, FDI is a good thing for India

Conclusion

Existing Indian retail firms such as Spencer's, Foodworld Supermarkets Ltd, Nilgiri's and ShopRite support retail reform and consider international competition as a blessing in disguise. They expect a flurry of joint ventures with global majors for expansion capital and opportunity to gain expertise in supply chain management. Spencer's Retail with 200 stores in India, and with retail of fresh vegetables and fruits accounting for 55 percent of its business claims retail reform to be a win-win situation, as they already procure the farm products directly from the growers the involvement of middlemen or traders. Spencer's claims that there is scope for it to expand its footprint in terms of store location as well as procuring farm products. Foodworld, which operates over 60 stores, plans to ramp up its presence to more than 200 locations. It has already tied up with Hong Kong-based Dairy Farm International. With the relaxation in international investments in Indian retail, India's Foodworld expects its global relationship will only get stronger. Competition and investment in retail will provide more benefits to consumers through lower prices, wider availability and significant improvement in supply chain logistics.

References

1. [*"The Bird of Gold - The Rise of India's Consumer Market". McKinsey & Company. May 2007.*](#)

2. [Dikshit, Anand \(12 August 2011\). "The Uneasy Compromise - Indian Retail". *The Wall Street Journal*.](#)
3. ["Winning the Indian consumer". McKinsey & Company. 2005.](#)
4. [Majumder, Sanjoy \(25 November 2011\). "Changing the way Indians shop". *BBC News*.](#)
5. ["FE@CAMPUS MASTERMIND: Response by Mahavir Accha to question for Jan 7-13". *Indian Express*.](#)
6. ["Retailing in India Unshackling the chain stores". *The Economist*. 29 May 2008.](#)
7. [Agarwal, Vibhuti; Bahree, Megha \(7 December 2011\). "India puts retails reforms on hold". *The Wall Street Journal*.](#)
8. [Sharma, Amol; Sahu, Prasanta \(11 January 2012\). "India Lifts Some Limits on Foreign Retailers". *The Wall Street Journal*.](#)
9. [Sharma, Amol \(24 June 2012\). "IKEA Knocks on India's Door". *The Wall Street Journal*.](#)
10. ["Ikea shelves Indian retail market move". *The Financial Times*. 22 January 2012.](#)
11. ["Times of India Newsreport".](#)
12. ["Department of Industrial Policy & Promotion \(FC-I Section\), Press Note No.5 \(2012 Series\) - multi-brand retail" \(PDF\). Ministry of Commerce & Industry, Government of India. 20 September 2012. "Department of Industrial Policy & Promotion, Press Note No.4 \(2012 Series\) - Single brand retail" \(PDF\). Ministry of Commerce & Industry, Government of India. 20 September 2012.](#)
13. ["FDI in multi-brand retail comes into effect; way clear for Walmart". *The Economic Times*. 20 September 2012.](#)
14. ["SMEs welcome FDI in retail". *CIOL*. 6 December 2012..](#)
15. [Gurjar, Omkar; Bhattacharya, Kunal \(June 2016\). "Organized Retail Sector in India" \(PDF\). *International Journal of Recent Research Aspect*. 3 \(2\): 46–49. ISSN 2349-7688.](#)
16. ["ICRIER Begins Survey of Indian Retail Sector." 19 March 2007.](#)
17. ["Indian Express, Indian Retail System".](#)
18. [RETAILING IN INDIA: A REVIEW OF PRESENT SCENARIO, Chapter 4 \(2011\)](#)
19. ["Global Economy: China, India confront WalMarts". *Asia Times*. 31 January 2004.](#)
20. ["FDI AND IMPACT ON INDIAN ECONOMY" \(PDF\). *International Journal of Research in IT, Management and Engineering. IJRIME*. 2012.](#)
21. [GROWTH AND NECESSITIES OF FDI IN RETAILING IN INDIA](#)
22. [Services Sector, Government of India Budget Document, Chapter 10 \(2012\)](#)
23. [Investing in India, KPMG](#)
24. [Mukherjee, Arpita; et al. \(2006\). *FDI in Retail Sector: INDIA, A Report by ICRIER*. Academic Foundation. ISBN 978-81-7188-480-3.](#)
25. [Mehta and Chatterjee \(June 2011\). "Growth and Poverty - the great debate" \(PDF\). *CUTS International*.](#)
26. [Bhagwati, Jagdish \(14 December 2010\). "Hiren Mukerjee Memorial Parliamentary Lecture: Parliament of India" \(PDF\). Columbia University, Parliament of India.](#)
27. ["India again tops global retail index." 22 /6/ 2007.](#)
28. ["Economic and financial indicators" 3 July 2008.](#)
29. ["Indian Retail story from Myths to Mall." 11 August 2007.](#)
30. [Bahree, Megha \(25 November 2011\). "India Unlocks Door for Global Retailers". *The Wall Street Journal*.](#)
31. ["Wal-Mart Waits With Carrefour as India Wins Instant Gain: Retail". *Bloomberg BusinessWeek*. 30 November 2011.](#)
32. ["Indian retail: The supermarket's last frontier". *The Economist*. 3 December 2011.](#)
33. ["INDIAN RETAIL INDUSTRY: A Report" \(PDF\). *CARE Research*. March 2011.](#)

REPERCUSSION OF GOODS AND SERVICES TAX

Maninder Kaur Walia

Research Scholar, Department of Commerce, MDU, Rohtak, Haryana, India

ABSTRACT

On July 6, 2009 the then Finance minister Pranab Mukherjee while presenting the budget, vocalized that GST would come into effect from April 2010 so as to solve the issues undrunk by VAT. However, it came into effect from July 1, 2017 via 101st amendment by the Indian Government. The goods and services Tax (GST) proved to be a significant improvement in the indirect tax system of the country. GST is an economic reform which eliminated multiplicity of taxes for goods and services by deciding a uniform rate for both. It has led to the abolition of taxes such as octroi, central sales tax, state level sales tax, entry tax, stamp duty, telecom license fees, turnover tax, tax on consumption or sale of electricity, etc. The tax rates, rules and regulations are governed by the Goods and Services Tax Council which comprises finance ministers of centre and all the states. It has gravely reshaped the country's 2 trillion-dollar economy. Integration of goods and services taxation has given India a world class tax system and is expected to improve further tax collections. This study is aimed to know the impact of GST on various sectors like Start-up Business, E-Commerce, IT, Hospitality & Tourism, Automobiles and Media & Entertainment etc. It has been found that GST has positive impact on some sectors while negative impact on others.

KEYWORDS GST, CGST, SGST, IGST

INTRODUCTION

Two types of taxes are levied by Indian government namely direct tax and indirect tax. Direct tax includes income tax levied by the central government payable by individuals, companies, body of individuals and association of persons etc. Another one is indirect tax which is levied on goods manufactured, provision of services and consumption. Central government levies taxes on production of goods and services. On the contrary, state government levies taxes on consumption of these goods and services. Every coin has faces, likewise this taxation system too possess multiple benefits along with underlying problems. Taking all these things into consideration, the decision was taken to introduce a tax reform in the form of GST.

GST was very first implemented in France in 1954 and subsequently about 140 countries have adopted this taxation system. The idea of GST in India was taken up by BJP government in 2007 but the party was unable to implement it due to rejection by many states. GST is an indirect tax which engulfed multiple indirect taxes levied by both centre and the states. The umbrella of Central taxes included central excise duty, additional excise duty, service tax, central sales tax, countervailing duty and special additional duty of customs and state taxes included value added tax/sales tax, entertainment tax, octroi and entry tax, purchase tax, luxury tax, taxes on lottery, betting and gambling. However, with the introduction of GST, all these taxes have been subsumed by the GST.

GST is an indirect tax levied on goods and services from manufacturer to consumers. Under GST, uniform tax is levied on manufacturing, sale and consumption of goods and services. GST is paid only on "value addition" at each stage by deducting taxes already paid at each stage and hence the cost for consumers will be reduced by input tax credit. This will result in the reduction in the cascading effect of taxes on taxes. Indian government has implemented the

Canadian Model for GST. Two components are: Centre Goods and Service Tax (CGST), State Goods and Service Tax (SGST).

BENEFITS OF GST

- It has resulted in uniform tax rate for goods and services which will reduce the complexity in division of transaction values in goods and services.
- It will also lead to easiness in compliance because there will be single reporting of records and returns.
- There will be considerable reduction in the prices due to input tax credit.
- It will result in the increase in the revenue of government as more business entities would be covered under this taxation system and would result in reduction in the tax evasion.
- Competitiveness would be increased in the Indian as well as International market due to reduction in cost of doing business.
- Simple and easy to administer.

CHALLENGES

- There is strict need for sound IT infrastructure for administering GST which itself is a challenge for implementation.
- State government would have to compensate for all the losses if any occur due to GST.
- As GST is a consumption-based tax so higher consumption will earn higher revenue.

OBJECTIVES OF THE STUDY

1. To make a comparison of revenue collection via GST.
2. To study the impact of GST on various sectors of Indian economy.

RESEARCH METHODOLOGY

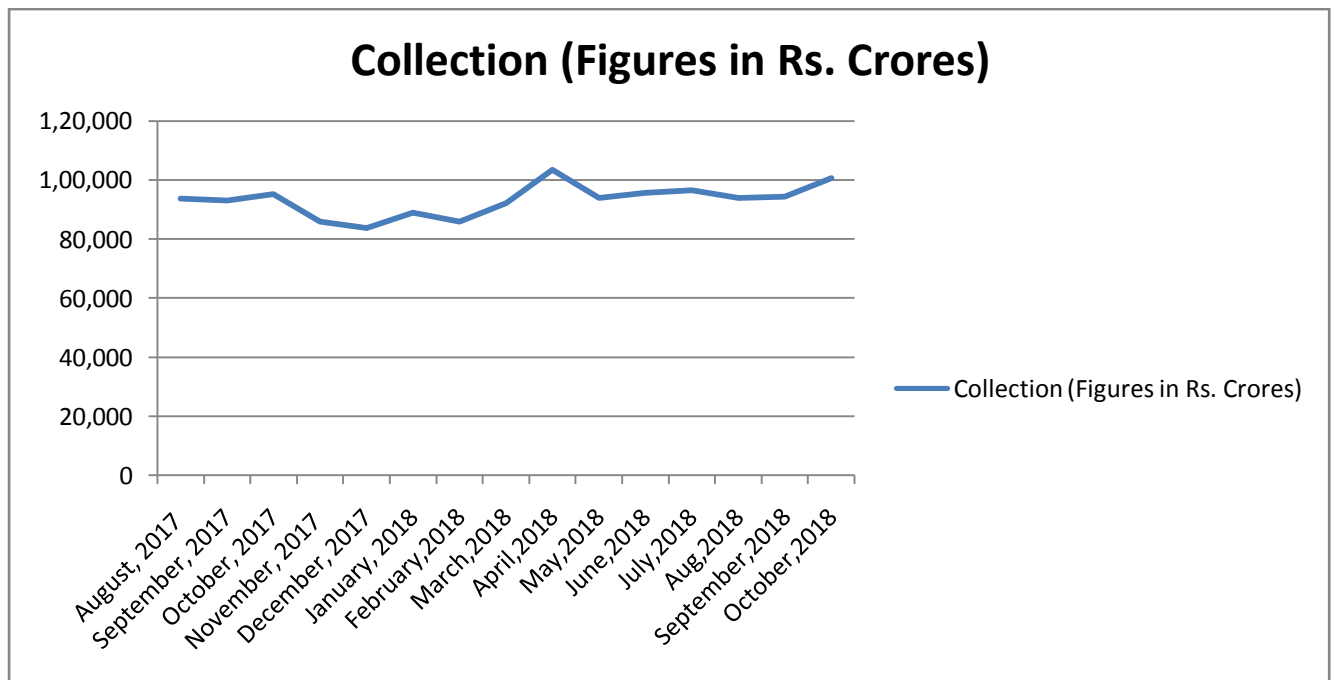
This study is descriptive in nature. Here, we have explained the impact of GST on various sectors of the economy. For this secondary data has been collected through different articles, research papers and reports published about GST. This study also highlights comparison of GST collection from August, 2017 to October, 2018. Data has been collected from Publication of Press Information Bureau (PIB) and site of GST council.

GST COLLECTION

Month	Collection (Figures in Rs. Crore)
August, 2017	93,590
September, 2017	93,029
October, 2017	95,132
November, 2017	85,931
December, 2017	83,716
January, 2018	88,929
February, 2018	85,962
March, 2018	92,167
April, 2018	103,459
May, 2018	94,016
June, 2018	95,610
July, 2018	96,483
August, 2018	93,960
September, 2018	94,442
October, 2018	100,710

It can be observed from the given data that the revenue collection initially reduced in September 2017, then increased in October 2017 which substantially started to reduce in

November and December 2017. The data is evident that there was maximum revenue collection in the month of April, 2018. So, it can be briefed that there is a mixed trend with both increase as well as decrease in the revenue collection via Goods and Services Tax. However, it can be seen from the figure that revenue collection is expected to move up in the subsequent years as the line representing it is moving upward.



IMPACT OF GST

• Impact of GST on Start-up Business

1. Under GST, a simplified uniform process and centralized registration is required for starting business in different states which is in direct contradiction to registration of each firm under VAT.
2. Earlier start-up business has to spend a lot of time and energy in managing various taxes according to different regulation in different states. GST is substitute for all indirect taxes levied by state and central government.
3. Now businesses that pay both sales and service tax like restaurants will get benefit from GST due to taxation on all once.
4. Now registration, returns and payments will be online due to IT system so start-ups can easily follow rules.
5. GST will lead to reduction in the latent cost of doing business by minimizing cascading of taxes due to availability of input tax credit throughout value chain.
6. Cost of manufacturing goods & services will be reduced due to phasing out of CST, merging of centre & state tax in GST and reduction in compliance cost which will make our goods and services competitive in international market.

• Impact of GST on Automobiles Sector

1. Currently, tax revenue of Indian government from automobile sector is 30-47% but after GST, it will be in the range of 20-22%. Cost of vehicles will also drop by 8-19% for end users.
2. Organized battery and other spares would become more cost effective and gain market share.

- Impact of GST on Hospitality and Tourism Industry

1. Supplies of hotels and restaurants will be taxed under single rate.
2. Input tax credit will be available on services related to renovation or construction of hotels and resorts.

- Impact of GST on Hospitality

1. Due to inverted duty structure, cost of domestic manufacturers is high which can be reduced by removing inverted duty structure and refund of accumulated credit under GST.
2. Indirect tax paid by Pharmaceutical companies could be increased for service-oriented industries like health, insurance and diagnostic centres.

- Impact of GST on FMCG Sector

1. GST will be beneficial for some companies. Tax at 27% (12.5% excise and VAT at 12 to 14.5% on top of excise) was paid by FMCG industries. However, GST rate is lower hence benefitting this sector.
2. Now most companies establish warehouse in each state to avoid CST on interstate sales. Warehouses were opened from tax point rather than market proximity and transport considerations. Under GST, India will merge as a single largest common market so local and interstate supply would be neutral. So, companies will be in beneficial position due to savings in warehousing and distribution cost.
3. FMCG distributors and retailers can set off input tax credit from services such as transport, rent against GST tax liability which was not available earlier.

- Impact on E-Commerce

1. Up to now, many indirect taxes like VAT, excise duty, CST and service tax by categorizing offering into goods and services while some offerings like digital downloads including software, music, e-books cannot be categorized into goods & services so to decide which will be charged was a challenge. By GST, all goods & services will be taxed at single rate so there is no problem of categorizing.
2. Issues related to interstate movement of goods and services like entry taxes with the requirement of statutory form, way bills, road permits, and local registration will be resolved under GST.
3. Reduction in cost due to elimination of cascading effect of taxes on prices.
4. Now the tax will be collected at source and it is the duty of e-commerce firms to file monthly and annual returns and collect tax on supplies of goods & services made by supplier so TCS guideline in the GST will increase workload and cost for e-commerce firms.
5. As small-scale businesses are exempted up to 10 lacs but under GST, E-Commerce firms have to collect tax on every transaction whether related to small scale. So firstly, small firms have to pay tax then they apply for refund impacting negatively the working capital of small firms.
6. Tax Collected at Source (TCS) will be affected negatively for goods sold for cash on delivery and later being rejected because firms have to bear tax from their own capital then apply for refund after cancellation.
7. Under TCS, firm will pay tax on price when it purchases the goods from supplier and will have to bear extra burden.

• Impact on IT Sector

1. It is good for IT industry that GST will eliminate multiple levies and no difference between goods and services for taxation purpose.
2. Cost of electronics like mobile phones, laptops will rise because GST rate is more than current duty on manufactured goods.

• Impact on Media & Entertainment

1. Currently many taxes like entertainment tax, service taxes etc. are charged. Under GST, a uniform tax will be charged (less than multiple taxes) so it will decrease prices of tickets.
2. Cost will also reduce due to availability of input tax credit which cannot be claimed earlier.

FINDINGS

Overall impact of GST has been positive on start-up business, automobile sector, tourism industry, FMCG sector, media & entertainment industry while negative in case of hospitality, alcoholic products as well as e-commerce sector. It can also be concluded that in the coming years, GST will prove to be a major source of revenue for the government.

REFERENCES

- Asawa, P.(2016). What is the difference between the current taxation and the new goods and services tax (GST) in India_?What is the impact_? Retrieved from <https://www.quora.com/What-is-the-difference-between-the-current-taxation-and-the-new-gst-impact-across-sectors-take-a-look-at-the-winners-and-losers/articleshow/53532907.cms>
- GST impact across sectors: Take a look at the winners and (2016, August 4). The Economic Times. Retrieved from <http://economictimes.indiatimes.com/news/economy/policy/gst-impact-across-sectors-take-a-look-at-the-winners-and-losers/articleshow/53532907.cms>
- GST may address dual taxation impact on media sector_: Deloitte. (2016, July 17). Business Today. Retrieved from <http://www.businesstoday.in/current/economy-politics/gst-may-address-dual-taxation-impact-on-media-sector-saysdeloitte/story/235108.html>
- Infotech, S. A. G., Articles, G. S. T., Last, T., & Pdf, P. (2016). How GST Bill Will Benefit Startups & Small Businesses in India_? What is GST_? Retrieved from <http://blog.sagininfotech.com/gst-bill-benefits-startups-and-small-businesses-in-india>
- Raghavendra, S. H. (2016). What is the impact of GST on FMCG sector_? Retrieved from <https://www.quora.com/What-is-the-impact-of-GST-on-FMCG-sector>
- Raghavendra, S. H. (2016). What will be the impact of GST on IT Sector_? Retrieved from http://www.moneycontrol.com/news/economy/budget-2015-how-will-gst-impact-it-sector_1285592.html
- Raghavendra, S. H., (2016). What will be the impact of GST on Hotel sector_? Retrieved from <https://www.quora.com/What-will-be-the-impact-of-GST-on-Hotel-sector>.
- GST revenue collection report. Retrieved from http://pib.nic.in/SearchResults.aspx?q=gst&cx=0039196XXXXXXXXX02515%3a4lg1hrnhj_k&cof=FORID%3a9
- Correspondent, S. (2016, June 15). E-commerce transactions in GST net. The Hindu. Retrieved from <http://www.thehindu.com/business/goods-and-services-tax-GST-in-India-What-is-the-impact?article8728976.ece>
- Wadhwa, P. (2016, August 4). How the GST Bill will impact various sectors and stocks. Business Standard. Delhi. Retrieved from <http://smartinvestor.business-standard.com/market/read-401678-readdet>

Prioritisation of sub-watersheds: a case study of Dohan and Krishnawati rivers in Mahendergarh, Haryana

Gulshan Mehra (Lecturer, GSSS Kamoda, Kurukshetra, Haryana, India)

Abstract: Delineation of watersheds within a large drainage basin and their prioritisation within administrative boundary is required for proper planning and execution of plan for management of natural resources and sustainable development. In the present paper, a detailed characteristics of two sub watersheds of Krishnawati and Dohan river falling in Mahendergarh district in Haryana has been studied and their mini-watersheds have been prioritised for sustainable development. The parameters for prioritisation have been taken from the theme layers of hydrogeomorphology, landuse/landcover, slope, soil, underground water prospects, drainage density and rainfall distribution. The terrain information for these layers has been obtained from geocoded satellite data and their corresponding toposheet maps on 1:25,000. Groundwater prospects and rainfall data has been obtained from secondary sources. In order to measure the high priority areas, weightages have been assigned to 7 parameters, using Saaty's analytical hierarchy process in both the sub-watersheds of Dohan and Krishnawati rivers. A composite picture of priority areas of both the sub-watersheds have been presented for conservation and better management of natural resources in the area.

Keywords: Micro-watershed, prioritisation, remote sensing, geographical information system analytical hierarchy process, sub-watershed.

1. Introduction:

A watershed is a natural hydrogeological entity which allows surface runoff to a defined channel, drain, stream or river at a particular point (Chopra et al, 2005). Watershed is considered an ideal unit for management and sustainable development of its natural resources. Watershed management is the process of carrying out a course of action to achieve specified objectives. It is also a well-known fact that regional planning and its implementation in our country is largely based on administrative divisions rather than on natural divisions. Though, the importance of natural divisions based watershed approach cannot be denied and land resource development programmes are applied on a watershed basis, even then the implementation is always carried out by individual administrative units. Hence, delineation of watersheds within a large drainage basin and overlapping district/administration boundaries is equally important (Gulshan and Rajeshwari, 2012). Further their prioritisation is also required for proper planning and management of natural resources for sustainable development. The prioritisation of watersheds is generally for proper management in the most vulnerable parts of the watershed, which has been attempted by number of scientists in various areas (NWDPR, 1991; Adinarayana et. al., 1995; Rajora, 1998; Kumar and Kumar, 2011).

In high altitude areas, watersheds are prioritised applying sediment yield models. Literature reveals that a number of sediment yield models, both empirical and conceptual, are in practice to address wide ranging soil and water management problems (Shinde et. al., 2010). It may be noted that All India Soil and Land Use Survey provides large scale watershed boundaries at various levels of hierarchy using empirical formula on the basis of Sediment yield index and annual erosion losses (GOI, 1990). In case of arid and semi areas, however, it is necessary to conserve and develop resources in the watersheds of the size ranging between 500 ha. and 1000 ha. (NWDPR, 1991; IMSD, 1995; Joshi et. al., 2008). It has been documented that the size of

500 ha of micro-watershed is a functional watershed development unit (Rajora, 1998; GOI, 2003). Literature suggest that the development of micro-watersheds which are lying within a district boundary may be suitable unit of development due to easy and effective implementation within a reasonably short period and which may have demonstration effect.

In this context, in the present paper an attempt has been made to study the major watershed characteristics and its prioritisation for further augmentation of resources for sustainable development in one administrative unit of Haryana comprising two sub-watersheds (sws) of Dohan and Krishnawati rivers.

2. Objectives:

- i) to present a detailed watershed characteristics of Krishnawati and Dohan sub-watersheds of Mahendergarh district in terms size, drainage, soil, terrain, hydrogeomorphology, landuse and ground water prospects.
- ii) to study and highlight the high priority micro-watersheds (based on 7 major themes) in both sub-watersheds of the region for better management.

3. Study area and its characteristics:

Haryana state enjoys two river basins namely Ghaghar and Yamuna basins. Mahendergarh district, situated in south-western part of Haryana, has a geographical area of 1927.72 sq. km. The district is part of Yamuna basin, as reported in Soil and Landuse Survey (Watershed atlas of India 1988) and this district comprises two sws of two seasonal rivers i.e. Krishnawati and Dohan Rivers. Figure 1 presents the shape of these two sws falling in Mahendergarh district. The climatic condition in the district varies from arid to semi-arid. The summer months are very hot whereas, winter season is fairly cool and dry. The average annual rainfall of the district is 592.5mm. About 75 percent of annual rainfall is received during the south west monsoon in the months of. July, August and September. The land tract of the district dealt with an Indo Gangetic alluvial plain marked vast stretch of flat land. Upland tract areas are situated between Mahendergarh, Narnaul and Nangal Chaudhary hills in Mahendergarh and Narnaul tehsils. The highly dissected upland situated between 284m and 302m above mean sea level belong to Aravalli system. Rocky outcrops traverse through most part of the district in roughly southwest to northeast direction. The hills are longer than its width, forming roughly parallel series of ridges. Mobile sand dunes also occur at a few places in south and southwest of Mahendergarh town. Stabilized sand dunes are most significant and largely confined to Mahendergarh and Satnali area. It is dominated by dry lands with presence of inland streams, sandy plains, shifting sand dunes, stabilized sand dunes, dissected upland tracks and often barren, denuded, rocky hill ranges and their outcrops. Overall relief is undulating with a regional slope (Chaudhary, 2003). The soil depth and texture varies from place to place. In the plains, the soil is deep but shallow on hill slopes. The soils texture various from sandy loam to clay loam in plains and sandy loam to sandy on the hills (District Gazetteer, Mahendergarh, 1988).

Dohan and Krishnawati streams of the district make irregular flood plains, which are ephemeral. The flood plain occurs in association with sandy terrain and dunes to variable morphology. Dohan originates from Jaipur hills about 6 kilometres short of Nim ka thana (Rajasthan) and flows 29 kilometers in Rajasthan territory before entering the Mahendergarh Tehsil. Dohan is an important source of drinking water for the areas of the Narnaul and Mahendergarh tahsils. It runs a length of about 50 kilometres in the district (District Gazetteer,

Mahendergarh, 1988). The total area of Dohan seasonal river which is draining Mahendergarh district is 732.31 square kilometer. This has been classified into 15 micro-watersheds (Gulshan and Rajeshwari 2012). Krishnawati originates about 1.6 kilometers south east of Nim ka thana in Jaipur hills (Rajasthan). Flowing in northerly direction it enters Narnaul Tehsil near Bhadanti and Dostpur, about 25 kilometers south of Narnaul town. The stream has a course of about 49 kilometers which terminates near Dahina village at the northern boundary of the Rewari Tehsil of Rewari district. The total area of Krishnawati seasonal river which is draining Mahendergarh district is 1195.49 square kilometer. This has been classified into 25 micro-watersheds (Gulshan and Rajeshwari 2012). These rivers after entering the district gradually shrink and loose water at high rate of evaporation and excessive percolation in sandy material. The rivers are active only during the rainy seasons which raise the fresh quality sub soil water. The seasonal flow in Dohan and Krishnawati periodically raises the level of fresh quality subsoil water. Besides, it also helps base flow during early part of the dry season. Now since Rajasthan has made a number of dams in the upstream of the river, as a result there is no appreciable water flow in these rivers even in rainy season (District Gazetteer, Mahendergarh, 1988).

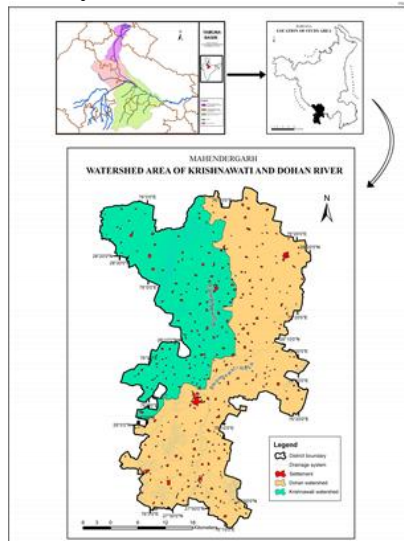


Figure 1: Location map of Study area

4. Data sources and methodology:

Realizing the importance of a comprehensive and integrated approach to the problem, various data from different sources were obtained. Broadly two types of data has been used. The first is Survey of India (SOI) topographical maps and another is satellite data. In addition to this, ground water level data has been obtained from Ground water Cell of Mahendergarh district for 83 wells. The drainage was derived from SOI toposheet and later masking it with IRS-LISS IV FCC of 2008. The slope map was prepared by creating digital elevation model (DEM) from contours. The micro-watershed boundaries were demarcated on the basis of contour values, slope, relief and drainage flow. The geomorphological features were obtained by IRS-LISS IV FCC of 2008. The geology map of the district was also used to for corroboration of Google imageries were used and SOI toposheet were used. The soil map was taken from Haryana Space Applications Centre, Hisar and the same classification of soil types is being used as presented by HARSAC, Hisar. Landuse/landcover categories has been identified using LISS IV

and PAN merged data for the year 2008. The 5 year average from 2005 to 2009 of rainfall data for 16 stations has been mapped, using moving average method.

In order to prioritise areas for conservation and better resource management, seven themes/layers namely hydrogeomorphology, landuse/cover, slope, soil, underground water table, drainage density and rainfall distribution have been taken into account. For ranking of areas with high and low priority, Saaty's Analytic Hierarchy Process has been used (Saaty, 1980).

Parameters	Data sources	Factor/Priority
Hydrogeomorphology	Satellite data of IRS 1D-LISS IV and PAN merged (Year 2008).	The more vulnerable terrain, more the priority.
Slope	23 topographic sheets of Survey of India on the scale of 1:25,000.	More the sloppiness, more the priority.
Landuse/cover	Satellite data of IRS 1D-LISS IV and PAN merged (Year 2008).	Parameter of wasteland has been considered. More the wasteland, more the priority.
Soil	Derived from Haryana space applications centre (HARSAC).	More the soil depth, less the priority.
Drainage density	23 topographic sheets of Survey of India (1:25,000).	Higher the drainage density, more the priority.
Underground water depth	83 hydrograph station's data are used.	More the water depth, higher the priority.
Rainfall	16 location's data has been used.	Less the rainfall, higher the priority.

Table 1: A comprehensive detail of its methodology

5. Results and discussion

5.1 Characteristics of Dohan and Krishnawati sws:

5.1.1 Hydrogeomorphology

Hydrogeomorphology generally describes the subsurface hydrological characteristics of a region based on its geological and geomorphological aspects (NRDMS, 2004). The terrain influences the surface water hydrology by modelling the movement of water over the land surface. In the present paper, different hydrogeomorphological units of both sws are being categorized into 9 classes. For this, IRS LISS IV FCC image was visually interpreted for delineation of physiographic units of the sws. Different image elements such as colour, texture, pattern, association were considered to identify and delineate both physiographic units and hydrogeomorphology. These were corroborated with the hydrogeomorphological categories as delineated by NRDMS (NRDMS, 2004). Ancillary data from SOI toposheets and other secondary sources were utilised to delineate these features. The detailed features of both the sws are presented as Figure 2. Majority of the area in the sample study region is under eolian plain in both the sws i.e. 85.05 percent in Dohan and 87.74 percent in Krishnawati sws. Table 2 presents a detail account of these units. It shows that sand dunes account around 6 percent area in Krishnawati sub-watershed and about 3.2 percent in Dohan. Similarly pediment and rocky outcrops (i.e. structural, denudational and residual hills) account for 5 percent and 7 percent of total area in respective sws.

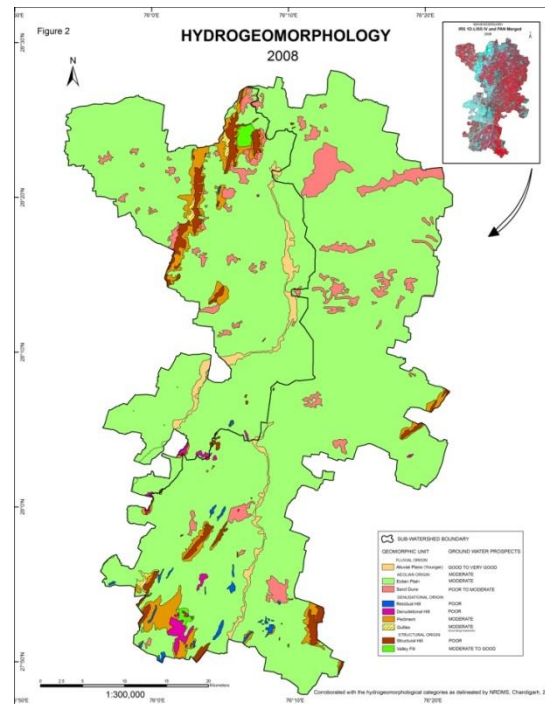


Figure 2: Hydrogeomorphology map of study area

5.1.2 Landuse/Land cover:

The landuse affects rates of runoff, infiltration and types and quality of vegetation. Suitable landuse minimizes the soil erosion and reduces the runoff. The landuse/landcover mapping of the watershed has been carried out by standard visual interpretation techniques. Satellite data of IRS 1D-LISS IV and PAN (merged) for year 2008 has been used for studying the landuse/landcover pattern. Eight broad land use categories have been identified in both the sws (Figure 3). These are (i) agricultural land, (ii) barren/rocky, (iii) forest, (iv) open scrub, (v) river course/channel (vi) sand dunes, (vii) settlements or built-up area and (viii) other water bodies i.e. dry and fill ponds.

Since the study area represents a typical rain-fed characteristic, agriculture is the primary landuse activity for livelihood. Table 2 reveals that agriculture land occupies a total of 1547.62 sq.km area accounting for 81.51 and 80.36 percent of Dohan and Krishnawati river sws respectively. The uncultivated area, which largely consist of barren or rocky land is quite considerable i.e. 6.3 and 4.4 percent of the Dohan and Krishnawati sws respectively (Table 2). In both sws, settlements or built-up area accounts for about 3 to 3.5 percent of total geographical area. It may also be noted that sand dunes occupy 6 percent area in Krishnawati sub-watershed, while it is 2 percent in Dohan sub-watershed. Forest cover is relatively high in Dohan sub- watershed (4 percent), as compared to Krishnawati sub-watershed, where it is 1.16 percent.

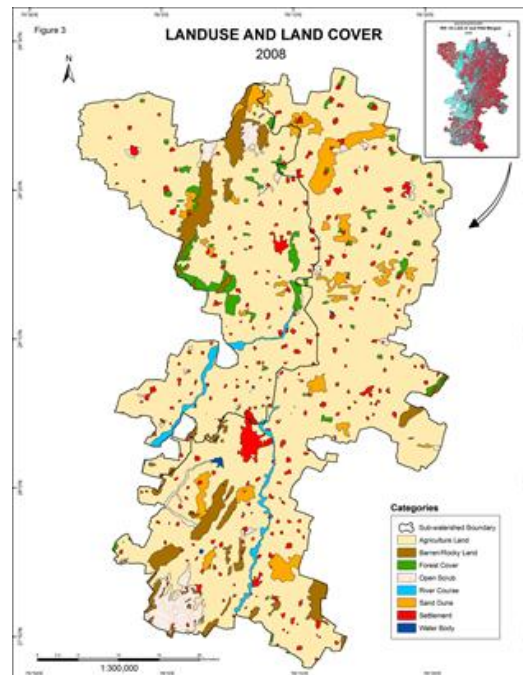


Figure 3: Landuse/landcover map of study area

5.1.3 Soil:

The soil of an area determines the infiltration of water, percolation of water, runoff and soil erosion. Soil types affect the productivity and production of agricultural, horticultural, forest lands and grasslands. The soil of the watershed also determines the amount of water percolation and correction measures needed. As revealed by landuse pattern, more than 80 percent area of total geographical area is under agriculture. Remaining are habitation, road, hillocks, degraded land, water bodied, forest land, etc. The soil type is sandy loam and it covers a 73.38 and 89.98 percent of sample study area, accounting for Dohan and Krishnawati sws respectively (Table 2). The underdeveloped soils (Lithic Ustorthents and loamy skeletal) occur on the hilly region with steep slopes and on undulating lands. Fine-grained eolian sand (Typic torripsamments) is found in west of Krishnawati sub-watershed. Dohan river sub-watershed have much more sandy soil as compare to Krishnawati river sub-watershed. The well developed very deep coarse loamy soils (Typic Udipsamment and typic haplustepts) are situated generally on nearly level sloping areas of both the sws (Figure 4).

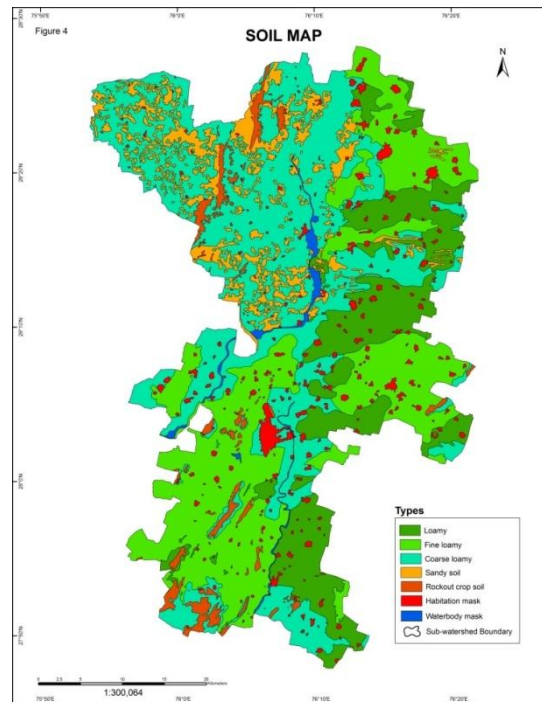


Figure 4: Soil map of study area

5.1.4 Slope:

Slope and aspect of a region are vital parameters in deciding suitable land use, as the degree and direction of the slope decide the land use that it can support. Slope is also very important while determining the land irrigability and land capability classification and has direct bearing on runoff (GOI, 2008). The degree of slope sets limits on land use for annual crops, plantation and even on land reclamation, depending on soil depth, stoniness etc (Tideman, 1996).

In the present paper, slope analysis has been carried out with the help of 1:25,000 SOI toposheet (10 m contour interval). After following the standard procedure for calculating the slope degree, slope has been categorized as gently sloping (less than 5 degree), moderately sloping (5-10 degree), steep sloping (10-15 degree) and very steep sloping (more than 15 degree). The detail slope map of study area depicting slope of the micro-watersheds is presented as Figure 5. Overall about 93.28 percent area is of gentle slope accounting 91.93 and 94.64 percent in Dohan and Krishnawati sws respectively. About 4.21 percent area of the total geographical is of steep to very steep slope accounting 5.21 and 3.22 percent in Dohan and Krishnawati sws respectively. It also reveals a highly dissected upland situated between 284 meters and 650 meters above mean sea level belong to Aravalli system and spread from south to north direction (District Gazetteer, Mahendergarh, 1988).

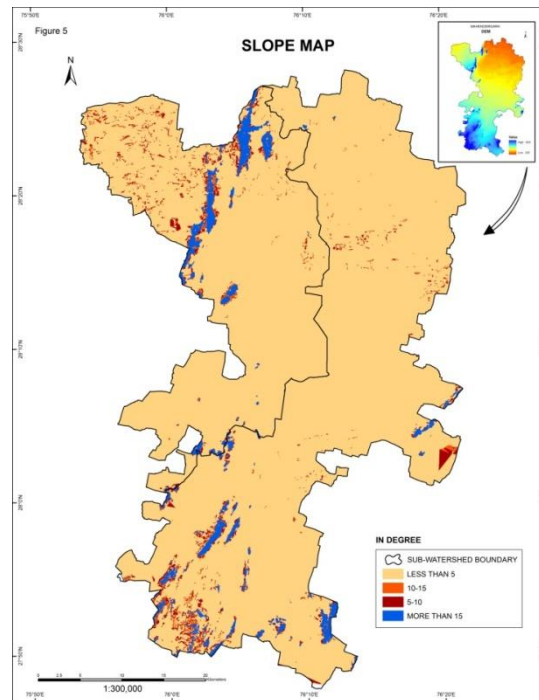


Figure 5: Slope map of study area

5.1.5 Drainage density:

Drainage density has direct relationship with erodibility. High drainage density watershed drains runoff water rapidly. The coarser the drainage texture, the higher the conductivity (Tideman, 1996). Very high priority watersheds are very severe in dendritic and radial drainage patterns and low priority watershed in trellis, rectangular and annular drainage patterns. Drainage density, which is characterized by the average length of streams per unit area (Adinarayana et. al., 1995). In the term of watershed, Mahendergarh district is unique in the sense that it is a dry land which has presence of inland seasonal streams. Both the Dohan and Krishnawati river, and its tributaries are non- perennial in nature (Figure 6). Drainage density has been calculated in the sample study Figure 6 shows drainage density ranging from nil to low, medium and high drainage density categories. Generally, the drainage density is exhibited high in the hilly terrain, followed by pediments in both the watersheds. In Dohan sub-watershed, many streams in north of sub-watershed lose their water in in dry land without joins Dohan river and in Krishnawati sub-watershed most of the tributaries flows towards north-east and finally joins the Krishnawati river in several parts. Overall about 589.37 km² area is of less (0.001-2.336) to high (4.547-9.099) category accounting 27.90 and 29.95 percent in Dohan and Krishnawati sws respectively (Table2). Area under high drainage density is 5.34 and 1.74 percent in Dohan and Krishnawati sws respectively.

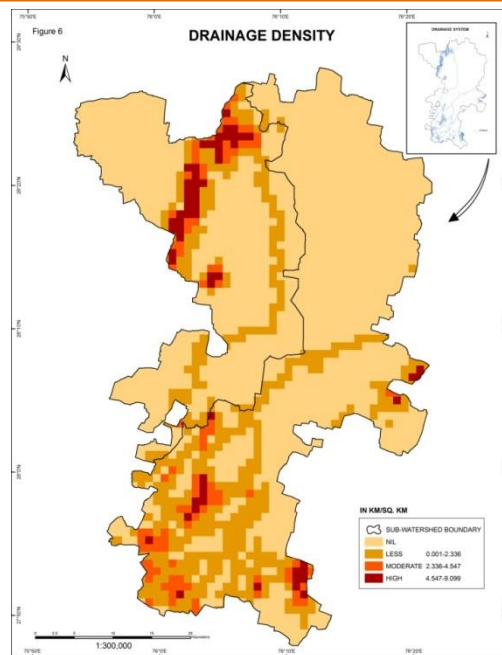


Figure 6: Drainage density map of study area

5.1.6 Underground water table depth:

The amount of water quality, quantity and regime of the underground water determines the behavior of watershed. The declining rate of ground water Table affects recharge adversely. In Mahendergarh district, there is acute shortage of water. The district has suffered a prolonged period of aridity. The area under water bodies have been declining drastically in the district (Chaudhary, et. al., 2003). A detail characteristic of underground water Table has been present in Figure 7. Total 83 hydrograph stations data were located their coordinate to prepare well location map. For underground water depth map, underground depth values at these locations were attached with well location map in form of attribute Table. After that spatial distribution maps were generated by carrying out point interpolations using moving average (inverse distance) method. The spatial variation of groundwater depth was classified into 25-45, 45-65, 65-85 and below 85 meters ranges. The underground water Table of Krishnawati sub-watershed is much better than Dohan river sub-watershed. In 2010, the underground depth in Dohan sub-watershed was in the range of 65-85 meters. It occupies a 271.66 km² which is 37.10 percent of its total geographical area. It may also be noted that 28.45 km² area is having worst underground depth. The water Table tends to be close to the surface (25 to 45 meters) in Krishnawati sub-watershed and covered 72.19 percent of the total area (Table 2).

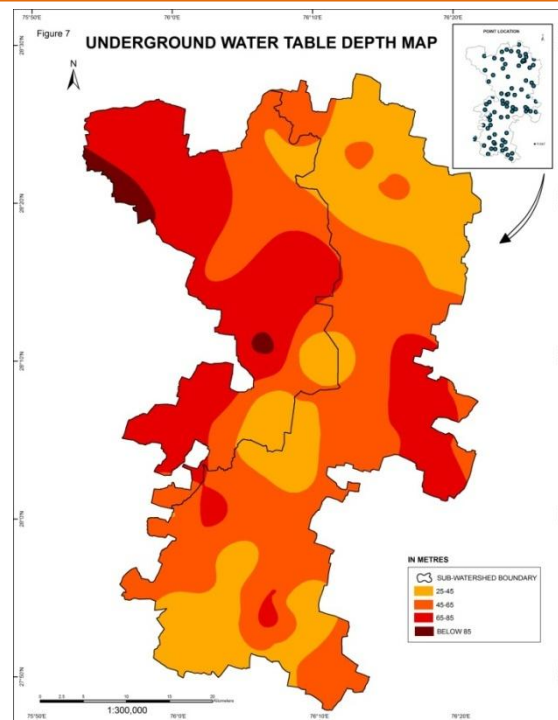


Figure 7: Underground water table depth map of study area

5.1.7 Rainfall distribution:

The 5 year average of rainfall data for 16 stations has been mapped, with the interpolated isohyets, spatial distribution of rainfall was generated. It was overlaid with boundaries of both sws and resultant distribution is shown in Figure 8. It reveals that the average annual rainfall varies from 350 to 710 mm. Rainfall distribution has been classified into four zones: (i) less than 350 mm, (ii) 350-450 mm, (iii) 450-550 mm, and (iv) more than 550 mm. The spatial pattern shows that it decreases from south to northward in both of sws. The highest rainfall occurs in south-west of Krishnawati sub-watershed and covers almost 26.5 percent of the total area (Table 2).

The low rainfall area of this sws accounts for 24.26 percent of its total geographical area. In case of Dohan sub-watershed, only 2.79 percent area receives scanty amount of rainfall.

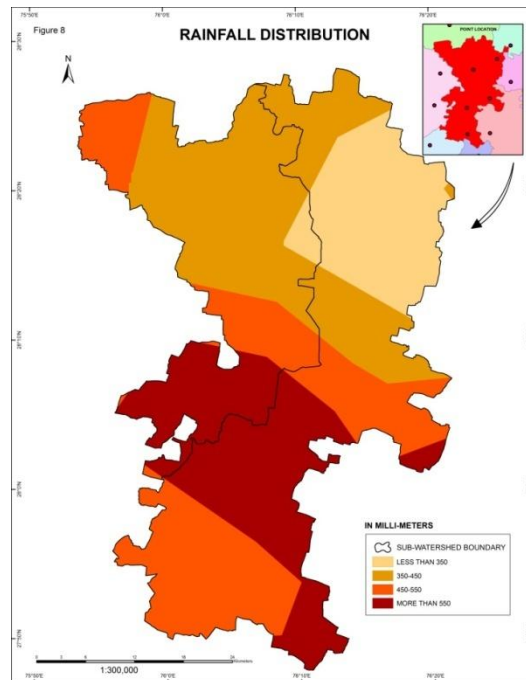


Figure 8: Rainfall distribution map of study area

Table 2: Watershed Characteristics of Dohan and Krishnawati rivers.

Dohan sub-watershed			Krishnawati sub-watershed	
Hydrogeomorphology	Total area in Km ²	Percent area	Total area in Km ²	Percent area
Alluvial Plane (Younger)	21.66	2.96	10.17	0.85
Sand Dune	23.43	3.20	68.65	5.74
Eolian Plain	622.84	85.05	1048.94	87.74
Gullies	2.93	0.40	1.68	0.14
Pediment	29.94	4.09	30.91	2.58
Valley Fill	8.66	1.18	4.14	0.35
Residual Hill	0.40	0.05	6.44	0.54
Denudational Hill	2.11	0.29	7.86	0.66
Structural Hill	20.67	2.82	16.77	1.40
Total Geographical area	732.31	100.00	1195.49	100.00
Drainage density in Km ²				
Nil	527.97	72.10	837.46	70.05
Less (0.001-2.336)	132.63	18.11	279.36	23.37
Moderate (2.336-4.547)	32.61	4.45	57.86	4.84
High (4.547-9.099)	39.10	5.34	20.81	1.74
Total Geographical area	732.31	100.00	1195.49	100.00
Slope in degree				
<5 Gentle slope	673.19	91.93	1131.43	94.64
5-10 Moderate slope	20.91	2.85	25.29	2.12
10-15 Steep slope	12.02	1.64	15.23	1.27
>15 Very steep slope	26.16	3.57	23.38	1.95
Total Geographical area	732.31	100.00	1195.49	100.00
Landuse/cover				
Agriculture Land	596.89	81.51	960.73	80.36
Barren/Rocky	45.71	6.24	52.25	4.37
Forest	28.92	3.95	13.92	1.16
Open Scrub	14.83	2.03	42.31	3.54
River Course/channel	11.71	1.60	9.22	0.77
Sand Dune	13.21	1.80	71.91	6.01
Settlement/builtup	20.68	2.82	43.33	3.62
Other water Bodies	0.36	0.05	1.82	0.15
Total Geographical area	732.31	100.00	1195.49	100.00
Soil types				
Loamy	16.37	2.24	318.53	26.64
Fine loamy	88.91	12.14	475.17	39.75
Coarse loamy	432.05	59.00	282.04	23.59
Sandy soil	140.56	19.19	27.23	2.28
Rock out crop soil	25.97	3.55	33.47	2.80
Habitation mask	13.80	1.88	54.90	4.59
Water body mask	14.65	2.00	4.15	0.35
Total Geographical area	732.31	100.00	1195.49	100.00
Underground water prospects (depth in mts).				
25-45	175.18	23.92	863.01	72.19
45-65	257.01	35.10	309.89	25.92
65-85	271.66	37.10	22.55	1.89
Below 85	28.45	3.89	0.00	0.00
Total	732.31	100.00	1195.49	100.00
Rainfall distribution in mm.				
Below 350	20.42	2.79	290.08	24.26
350-450	395.59	54.02	215.81	18.05
450-550	158.88	21.69	373.10	31.21
Above 550	157.43	21.51	316.49	26.47
Total	732.31	100.00	1195.49	100.00

5.2 Prioritisation of area for conservation of resources and sustainable development:

In this section, a composite picture of prioritised area of both Dohan and Krishnawati rivers sws has been presented. The basic premise is to identify and give priority to those areas which are vulnerable and where intervention is needed on urgent basis for management of natural resources and development. In order to prioritise such areas, seven theme based layers are being used. These are hydrogeomorphology, landuse/landcover, slope, soil, underground water table, drainage density and rainfall. Saaty's Analytic Hierarchy Classification has been used for weights and to measure the area (Saaty, 1980). The most vulnerable has been given higher weightage or rank and are considered for higher priority. In case of slope parameter, the areas with gentle slope have been given low priority and with very steep slope have been considered for prioritisation. Soil mapping has been carried out using HARSAC map as discussed in earlier section. The map area depicting deep soils with sandy clay and which are moderately deep and well drained are considered for prioritisation. In case of landuse/landcover, high forest cover has been given less values. While high waste land and sand dunes are being ranked high and considered for priority. Similarly ground water prospects has been ranked, where high rank has been assigned to areas where its prospects are low in term of deep water table. The drainage pattern of any terrain reflects the characteristics of surface as well as subsurface information. Its density (in terms of km/km²) indicates the closeness of spacing of channels. It characteristics the run-off in the area. Hence, lesser the drainage density, higher is the probability of recharge or potential groundwater zone (Vittala, et.al, 2008). In case of drainage density layer, higher density (4.547-9.099) has been given highest value. Similarly, the highest rainfall region has been given low priority. Applying the above said ranking values, a composite picture has been obtained which has been presented in Figure 9. This presents the overall composite picture of vulnerable area in the district comprising of both sws. A segregated picture of both river sws is presented in Table 3.

Priority categories	Dohan sub-watershed		Krishnawati sub-watershed	
	Total area in Km ²	Percent area	Total area in Km ²	Percent area
Low priority	665.07	90.82	1130.96	94.60
Moderate priority	28.05	3.83	33.43	2.80
High priority	22.14	3.02	22.02	1.84
Very high priority	17.06	2.33	9.074	0.76
Total	732.32	100.00	1195.49	100.00

Table 3: Composite profile of prioritised area.

Both Figure 9 and Table 3 shows that in Dohan sws, about 40 sq. km. area accounting for about 5.4 percent of its total area falls in high priority. In case of Krishnawati sws, about 31 sq. km. area accounting for 2.5 percent of total has come in the category of urgent attention. Overall it account for 70 sq. km. of the study area. Hence the study highlights that this area can be taken up for sustainable development and management of resources with immediate effect.

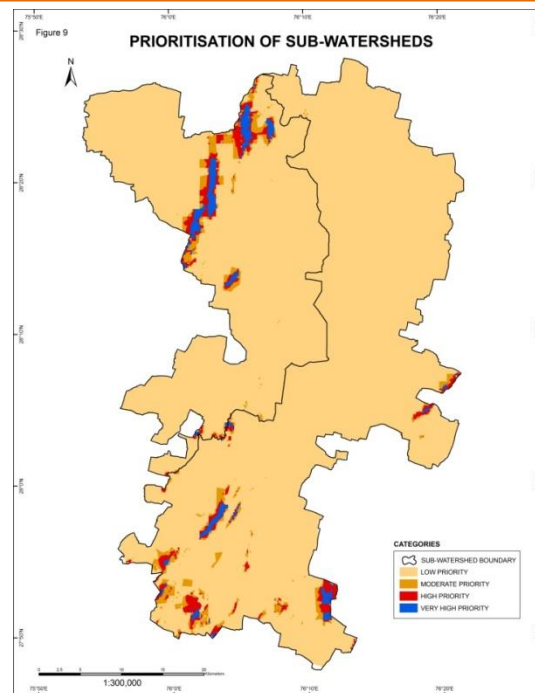


Figure 9: Prioritisation of sub-watersheds

6. Conclusion:

Characterization and analysis of watershed is prerequisite for the management of natural resources in any area. The present paper studies the detailed characteristics of Dohan and Krishnawati sws falling in one administrative unit of Haryana i.e. Mahendergarh district. It presents a detailed analysis of hydrogeomorphology, soil, drainage density, landuse, groundwater prospects and rainfall distribution of both sws. In order to highlight the area for planned action and implement, it prioritise the sws within two sws taking seven parameters of above said themes. Overall the paper suggests 70 km. sq. area as high priority area. The high priority area for Dohan sws is 39.20 sq. km. and for Krishnawati sws is 31.76 sq. km.

7. References:

Adinarayana, J., N. Rama Krishna and K. Gopal Rao (1995). An Integrated Approach for Prioritisation of Watersheds, *Journal of Environmental Management*, 44, 375-384.

All India Soil and Land Use Survey (1990). *Watershed Atlas of India*, Department of Agriculture and Corporation, Government of India, IARI Campus, New Delhi, Plate Number 10, 14.

Kumar, B. and U. Kumar (2011). Micro watershed characterization and prioritization using Geomatics technology for natural resources management, *International Journal of Geomatics and Geosciences*, Volume 1, No. 4, 789-802.

Chaudhary, B. S. and A. K. Sinha (2003). Study on Land use/Land cover Evolution in Southern Part of Haryana, India Using Remote Sensing and GIS. XII World Forestry Conference, Quebec City, Canada.

Chopra, R., R. Dhiman and P.K. Sharma (2005). Morphometric analysis of sws in Gurdaspur District, Punjab using remote sensing and GIS Technique, Journal of the Indian Society of Remote Sensing, 33(4), 531-539.

Department of Land Resources (DOLR) (2003). Guidelines for Hariyali, Ministry of Rural Development, Government of India, New Delhi, India.

Government of India (1991). District Gazetteer of Mahendergarh, Haryana, Government of Haryana, pp. 20-66.

Government of India (1991). WARASA Guidelines-National Watershed Development Project for Rainfed Area (NWDPR), Ministry of Agriculture, New Delhi. pp. 1-119.

Government of India (2008). Common Guidelines for Watershed Development Project, GOI, New Delhi. Detailed Project Report of all micro-watershed of IWMP-III, J.P. Nagar. pp 1-124.

Haryana Space Applications Centre (HARSAC), CCS HAU Campus, Hisar, Haryana.

Joshi, P.K., A.K. Jha, P. Wani Suhas, T.K. Sreedevi and F.A. Shaheen (2008). Impact of Watershed Program and Conditions for Success: A Meta-Analysis Approach., Global Theme on Agroecosystems, Report no. 46, Patancheru 502-324, Andhra Pradesh, India, International Crops Research Institute for the Semi-Arid Tropics, pp. 1-18.

Mehra, G. and Rajeshwari (2012). GIS Based Delineation of Micro-watershed and its Applications: Mahendergarh District, Haryana, International Journal of Human Ecology, 38(2) 155-164.

National Remote Sensing Agency (1995). Integrated Mission for Sustainable Development (IMSD) Technical Guidelines, Dept. of Space, Govt. of India, Balanagar, Hyderabad, pp. 1-127.

National Watershed Development Programme for Rain fed Areas (NWDPR) (1990-91). Guidelines for Watershed Development Projects issued by the National Rainfed Area Authority (NRAA), Department of Agriculture and Cooperation, Government of India.

Rajora, R. (1998). Integrated Watershed Management, Rawat Publications, Jaipur, pp. 27-43.

Saaty, T. L. (1980). The Analytic Hierarchy Process, McGraw Hill International, New York.

Shinde, V., K.N. Tiwari and M. Singh (2012). Prioritisation of Micro-watersheds on the basis of Soil Erosion Hazard using Remote Sensing and Geographic Information System,

International Journal of Water Resources and Environmental Engineering, Vol. 2(5), pp. 130–136.

Tideman, E.M. (1996). Watershed Management Guidelines for Indian Conditions, Omega scientific publishers, New Delhi, pp. 11.

Vittala, S. S., S. Govindaiah and H. H. Gowda (2008). Prioritization of sub-watersheds for sustainable development and management of natural resources: An integrated approach using remote sensing, GIS and socio-economic data, Current Science, Volume 95, No. 3, 345-354.

AN ANALYTICAL STUDY ON DIRECT TAX REVENUE OF INDIA

ROBIN

Research Scholar

Department of Commerce

MDU, Rohtak

ABSTRACT

The government of every country requires financial resources to promote the economic and social wellbeing of citizens of the nation. This pressing need of finance have propelled the government of many nations to introduce various means of raising finances for economic growth and development and to execute its socio-economic obligations to the public. Taxation structure plays an important role in country's development. India has a well-developed tax structure. The power to levy taxes and duties is distributed among the three tiers of Government which includes the central government, the state government and the local authorities. In this study we have analyzed the direct tax revenue collection of India which includes trends in direct tax revenue, composition of direct tax revenue in India. Along with these we have also described some major problems affecting the direct tax revenue generation and collection in India. These problems show that Indian taxation system requires some major reforms in the future ahead to address all this problems.

Keywords: Tax structure, Direct tax, Indirect Tax, Tax evasion, Tax Revenue.

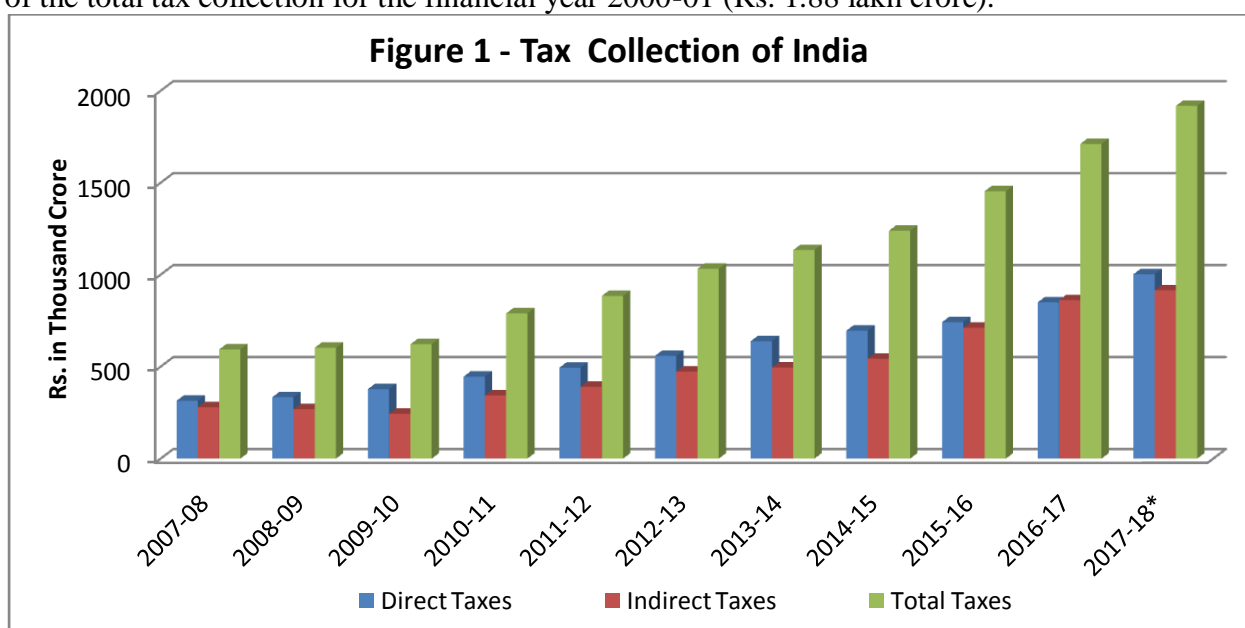
INTRODUCTION

India being a developing country requires funds to achieve the socio-economic objectives for the betterment of the society. Along with the revenue generation it plays a positive role in stimulating growth, economic stability, income distribution and equality, etc. The government imposes tax so that it can make use of such resources for the underprivileged. The government has to keep in mind while designing the tax structure of the country about the socio-economic needs of the people of the country as well because the laws are made for the benefit of the masses. Taxation structure in India can be divided into two parts namely direct taxes and indirect taxes. **Direct Taxes** are those which are paid directly by the individual or organization to the imposing authority. The government levies tax on the residents, business entities and non-business entities. Because of progressive taxation the Burden of direct Taxes is less on poor people and more on rich people. As far as direct taxes are concerned, the tax payer is certain as to how much he is expected to pay, as the tax rates are decided in advance. The Government can also estimate the tax revenue from direct taxes with a fair accuracy. Direct taxes are generally economical to collect. The direct taxes can help to control inflation. During inflationary periods, the government may increase the tax rate. With an increase in tax rate, the consumption demand may decline, which in turn may reduce inflation. With an increase in income and wealth of individuals and companies, the yield from direct taxes will also increase. Elasticity also implies that the government's revenue can be increased by raising the rates of taxation. An increase in tax rates would increase the tax revenue. Some of important examples of direct taxes are: corporate tax, Income tax, Land revenue, Hotel receipt tax, Gift tax and Estate duty etc. **Indirect Taxes** are imposed on Manufacturers, sellers and traders but their ultimate burden is imposed on the consumers who buy the goods and services and thus the consumers are the final tax payers. They are convenient from point of view as taxpayer as he

pays indirect taxes in small amounts. Also they are convenient to government as they collect these taxes in lump sum from the manufacturer. So it is difficult to evade the tax when imposed in this form. Both rich and the poor pay the tax equally so it has a universal appeal. As Indirect Taxes increases the prices of the commodity, they are considered as inflationary. If Government depends more on indirect taxes, then Inflation will keep on increasing. It is a vast ocean as many number of taxes come under indirect taxes such as Customs, Goods and service tax, Excise duty, Road tax, and motor vehicle tax etc.

❖ TAX COLLECTION OF INDIA

Taxes are the main source of revenue to the government of any country. In India also revenue from taxes is the major source of revenue to the government of India. Total tax revenue of India contributes more than 80% part of total revenue of government of India. Revenue from taxes to Indian government is increasing year by year at a high growth rate. During the financial year 2015-16 and 2016-17 annual growth rates of total tax collection was more than 17%. For the financial year 2017-18 total tax collection was Rs. 19.18 lakh crore that is more than 10 times of the total tax collection for the financial year 2000-01 (Rs. 1.88 lakh crore).



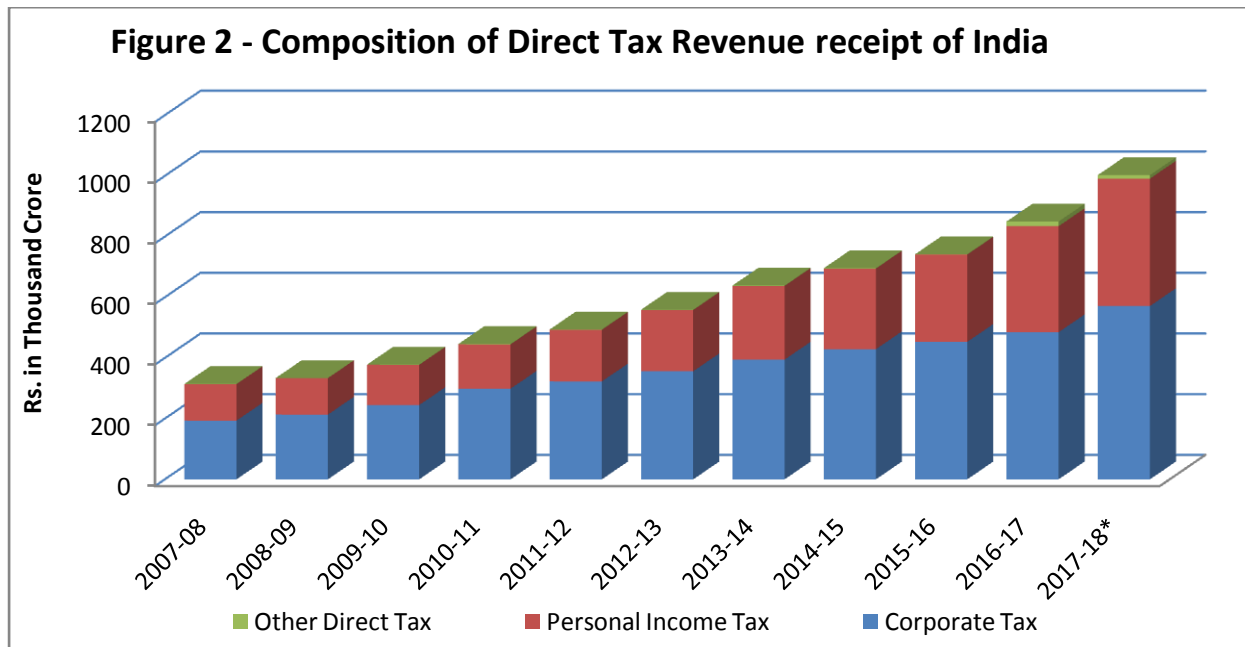
(Source: CBDT Data)

Figure 1 depicts the trends in the tax revenue of India from the financial year 2007-08 to financial year 2017-18. Total tax revenue has recorded an increase in each year since financial year 2007-08 i.e. growth rate of total tax revenue is positive for each year since the financial year 2007-08. During the decade (2008-09 to 2017-18) average annual growth rate of total tax revenue was 12.67% with highest growth rate of 26.96% for the financial year 2010-11. Direct tax revenue also showed growth in each year since the financial year 2007-08 but revenue from indirect taxes showed negative growth during the financial year 2008-09 and 2009-10 as compared to their respective previous years. During the decade (2008-09 to 2017-18) average annual growth rate of indirect tax revenue and direct tax revenue were 13.54% and 12.37% respectively. In spite of negative growth in two years average annual growth rate of revenue from indirect taxes was more than revenue from the direct taxes. This was because of the compensatory growth of 40.90% and 31.05% in the indirect tax revenue for the financial year

2010-11 and 2015-16 respectively. Proportion of direct tax and indirect tax in total tax revenue has experienced many fluctuations during the period of our study. In the year 2007-08 share of direct tax was 52.93% in total tax, it reached at 60.78% in the year 2009-10 and 49.65% in the year 2016-17. Share of Indirect tax in the total tax was 47.03% in the year 2007-08, further reached at 39.22% in the year 2009-10 and 50.35% in the year 2016-17. In the financial year 2017-18 share of direct tax revenue and indirect tax revenue was 52.29% and 47.71% respectively.

❖ COMPOSITION OF DIRECT TAX REVENUE OF INDIA

Direct tax is further divided into three parts i.e. corporate tax, personal income tax and other taxes. **Corporate tax** is paid by the companies registered under company law in India on the net profit that it makes from businesses. Domestic as well as foreign companies are liable to pay corporate tax under the Income-tax Act. While a domestic company is taxed on its universal income, a foreign company is only taxed on the income earned within India i.e. is being accrued or received in India. Unlike, individuals taxation, there are no slabs and income tax is applicable on the total taxable profits of the company. **Income Tax** taxes an individual or a Hindu Undivided Family or any taxpayer other than companies, on the income received. The law prescribes the rate at which such income should be taxed. If money is earned then tax has to be paid if it crosses a particular slab of income received. **Other direct taxes** includes all other direct taxes imposed by government of India like gift tax, land revenue, hotel receipt tax and estate duty etc.



(Source: CBDT Data)

During the financial year 2007-08 share of corporate tax revenue was much more in total direct tax collection as compared to personal income tax and other direct tax. For that year total direct tax collection of India was Rs. 314330 crore and proportionate share of corporate tax, personal income tax and other direct tax revenue was Rs. 193561 crore (61.58%), Rs. 120429 crore (38.31%) and Rs. 340 crore (0.11%) respectively. From the financial year 2007-08 to 2010-11

shares of corporate tax revenue and other direct tax increased every year while the share of personal income tax revenue decreased every year. For the FY 2010-11 respective shares of corporate tax, personal income tax and other direct taxes was 66.97%, 32.79% and 0.24%. After that proportionate share of personal income tax increased every year and reached up to 41.88% for the financial year 2017-18 from the 32.79% share for the FY 2010-11. On the other side corporate tax revenue lost its proportionate share during that period. And the share of other direct taxes has fluctuated much and reached at 1.15% in the FY 2017-18. During the period of our study (From the FY 2007-08 to 2017-18) corporate tax revenue, personal income tax revenue and other tax revenue has increased by 195.10%, 248.75% and 3294.42% respectively.

❖ COLLECTION OF DIRECT TAXES IN INDIA

In India tax authorities collect direct taxes from the tax return filers and by collecting tax deducted at source. Return filers are the persons or assesseees who files tax returns to tax department. A tax return is a form(s) filed with a taxing authority that reports income, expenses and other pertinent tax information. Various income tax forms are ITR 1, ITR 2, ITR 3, ITR 4, ITR 5, ITR 6 and ITR 7. Tax returns allow taxpayers to calculate their tax liability, schedule tax payments, or request refunds for the over-payment of taxes. In most countries, tax returns must be filed annually for an individual or business with reportable income (e.g., wages, interest, dividends, capital gains, or other profits). A Taxpayer is a person who either has filed a return of income for the relevant Assessment Year (AY) or in whose case tax has been deducted at source in the relevant Financial Year but the taxpayer has not filed the return of income. As per the data of Assessment Year 2017-18 total return filers and total taxpayers were 44704734 and 74127250 respectively. Individual return filers and taxpayers alone constitutes more than 93% share in total numbers of returns filers and taxpayers, followed by Firms, HUFs and Companies.

Table 1 - Collection of Direct Tax in India

Category	AY 2014-15		AY 2017-18	
	Return Filers	Taxpayers	Return Filers	Taxpayers
Association of Persons	84928	160116	122467	224399
Body of Individuals	3672	7077	4258	9290
Company	636024	748173	715200	838174
Firm	881063	1092692	1060326	1316305
Government	10	357	68	1313
Hindu Undivided Family	873758	1003089	1007742	1136853
Artificial Juridical Person	7377	10629	8479	11501
Local Authority	2267	7188	2579	9093
Individual	30497686	53911494	41591644	70319448
Association of Persons (Trust)	160587	217996	191971	260874
TOTAL	33147372	57158811	44704734	74127250

(Source: CBDT Data)

Table 1 depicts that during the period of three years (from AY 2014-15 to AY 2017-18) there was significant increase in the numbers of returns filers and taxpayers of each category. In the AY 2017-18 numbers of returns filers and taxpayers has increased by 34.86% and 29.68% respectively from the AY 2014-15. Individuals have shown highest growth in actual terms

while Government has shown highest growth in percentage term. It is to be noted that numbers of taxpayers are much more as compared to numbers of returns filers. Because a taxpayer is a person who either has filed a return of income for the relevant Assessment Year or in whose case tax has been deducted at source in the relevant Financial Year but the taxpayer has not filed the return of income.

❖ MAJOR PROBLEMS IN DIRECT TAXATION IN INDIA

High Rates of Taxes: As compared to other countries in India the rate of direct tax is very high. And high tax rates encourage tax evasion and avoidance on a large scale. It may be noted in this context that tax avoidance refers to arranging one's financial affairs within the law so as to minimize taxation liabilities, as opposed to tax-evasion which is failing to meet actual tax liabilities through, e.g., not declaring income or profit.

Low Contribution of Income Tax: Although the rate of income tax is the highest in India, the contribution from such is very low. Main reason for this is the high exemption limit in a country where per capita income is very low. In India, the exemption limit has been raised from time to time, but the levels of national and per capita incomes have failed to increase proportionately.

No tax on Agricultural Income: Another feature of India's tax system is that there is no tax on agricultural income. While the contribution of agriculture sector and related activities to India's GDP were more than 17% for the financial year 2015-16. But agriculture has failed to make any contribution to the tax revenue.

Progressive Taxes on Income: The Government has made the system of direct tax progressive and progressiveness is considered desirable in the interest of equity and for reducing the disparities in the distribution of income and wealth. But progressive taxes encouraged tax evasion and tax avoidance which ultimately increases inequalities of income and wealth.

Cost of Collection of Tax: For the FY 2000-01, total expenditure incurred on collection of direct taxes was Rs. 929 crore. Cost of collecting direct taxes is increasing year by year. These expenditures have increased in manifold and reached at Rs.6087 crore in the FY 2017-18.

Very low numbers of return filers: As per the direct taxes data provided by the income tax department up to financial year 2016-17 total PAN (permanent account number) allotted was 294426059 but for that year number of persons (including all categories of return filers i.e. companies, individuals, HUF etc.) filing returns was only 44704734. This data show that only 15.18% persons of total persons allotted PAN filed their returns.

Black Money: Black Money has an impact on the economy as it provides us with the false information about the actual economy. Due to which the economic planning loses its worth, because they are based on macroeconomic parameters, which completely ignore the black money. It will have a serious effect on the country's fiscal system as most of the government income is based on the taxes collected.

CONCLUSION

After the study it can be concluded that although direct tax revenue of India is increasing at a good annual growth rate, government needs to take some necessary steps towards levying taxes on agricultural income and lowering tax rates on other incomes and profits. Because of high tax rates the tax system has failed to stop tax evasion and curb the growth of parallel economy. In

India due to parallel economy the taxation systems and economy of country suffers from the problems like Inequality, tax evasion, inflation, etc. Necessary action are also required for increasing the numbers of person filing their returns as currently numbers of return filers is very low in India as compared to other countries and also as compared to the numbers of PAN allotted in India.

REFERENCES

- Akrani, G. (2010, April 12). Direct Taxes Meaning - Merits and Demerits of Direct Taxes [Web log post]. Retrieved from <https://kalyan-city.blogspot.com/2010/12/direct-taxes-meaning-merits-and.html>
- A. (2016, December 30). What are the problems in tax structure and administration in India [Web log post]. Retrieved from <https://blog.ipleaders.in/problems-in-tax-structure-and-administration-india/>
- Cleartax. Income Tax in India: Guide, IT Returns, E-filing Process 2019 [Web log post]. Retrieved from <https://cleartax.in/s/income-tax>
- Suman, S. 8 Major Defects in the Tax Structure of India [Web log post]. Retrieved from <http://www.economicdiscussion.net/taxes/defects/8-major-defects-in-the-tax-structure-of-india/12917>
- India, Central Board of Direct Taxes (CBDT), Department of Revenue. *Income Tax Department Time Series Data Financial Year 2000-01 to 2017-18*. Retrieved from <https://www.incometaxindia.gov.in/Documents/Direct%20Tax%20Data/time-series-data-2017-18.pdf>
- India, Central Board of Direct Taxes (CBDT), Department of Revenue. *Income Tax Department PAN Allotment Statistics Up to Financial Year 2016-17 & as on 31-10-2017*. Retrieved from <https://www.incometaxindia.gov.in/Documents/Direct%20Tax%20Data/Flag-B-FY2016-17-PAN-Statistics.pdf>
- India, Controller General of Accounts, Department of Expenditure. *Accounts at a Glance 2017-18*. Retrieved from <http://cga.nic.in/writereaddata/AccountAtAGlance20172018English.pdf>
- India, Press Information Bureau, Ministry of Finance. (2018). *Direct Tax and Indirect Tax Collections*. Retrieved from <http://pib.nic.in/newsite/PrintRelease.aspx?relid=186415>
- <http://www.mospi.gov.in>
- <https://www.wikipedia.org/>

ECONOMIC ANALYSIS OF THE MORBIDITY PATTERN AND HEALTH CARE UTILIZATION OF THE SCHEDULED CASTE WOMEN IN JAIPUR DISTRICT, RAJASTHAN

RASHI KEWALRAMANI*

ABSTRACT

The purpose of this paper is to study the morbidity pattern and health care utilization of the scheduled caste women in Jaipur district, Rajasthan. The sample of the study consists of 302 respondents, which were selected by Multistage Random Sampling Method. The major objectives of the study are:- 1. Socio-economic status of the scheduled caste women in the study area. 2. To analyze the morbidity pattern and utilization of health care facilities among the scheduled caste women in the study area. 2. To examine the disease wise treatment seeking behaviour of the sample respondents. The socio-economic and nutritional factors have direct effect on the health problems of the scheduled caste women. It was observed that at least 11 percent of the respondents were not taking any type of treatment for their health problems like fever, cough and cold and for other health problems, they went for treatment at the last stage when all the sacrifices and rituals and other measures have not yielded any result. Lack of knowledge regarding the gynecological problems or morbidities and fear to express them is a major cause of high prevalence. Pregnancy being considered as a natural phenomenon, they were not interested in having regular medical checkups, taking medicines during pregnancy and medical help during child birth because of lack of knowledge or lack of awareness about the diseases or health problems. From this study there should be an urgency to improve the health care services as well as health providers for better treatment and accessibility in the remote areas of the of the scheduled caste women. More education along with some awareness programmes through audio-visual means will be a panacea for improving the health problems among the scheduled caste women.

Keywords: Scheduled Castes, Morbidity Pattern, Health Care Utilization, Health Status, Health Seeking Behavior, Health Facilities, Sources of Treatment.

*Ph.D Research Scholar, Department of Commerce and Management, Bhagwant University, Ajmer, Rajasthan

Introduction

Health is a basic fundamental right of all citizens and health promotion forms an intrinsic part of health care. In a developing country like India, where the capital asset most people have, is their physical body, health assumes high significance for socio-economic development. The concept of health is an important and integrated part of economic development. Social scientists and economists have realized the importance of health in the economic development of a nation. Health has a positive and direct link with the productivity and efficiency of human capital. Good health makes creative thinking and creative thinking of the labour force make a nation to lead a good quality of life by increasing productivity and reducing absenteeism. The economic burden of the disease leads to a sense of deprivation regarding health and productive potential. The incidence of both acute and chronic diseases not only depletes household income and saving but also diverts resources away from other productive activities. The relationship between health and economic growth is closely interrelated. The disease reduces life expectancy and economic productivity adversely affecting the number and quality of the country's labour force. As opposed to this scenario, good health positively affects human capital, productivity and economic growth. Labour productivity increases as a result of lower man days and the reduction in disability and incapacity, this frees resources that would otherwise have been used for treatments and help to break the poverty trap (Alka Chandha, et al. 2007)

In developing countries, nutrition, economic condition of the family, size of the family in especially low-income groups, physical exercise, yoga and meditation contributing to mental well-being, lifestyle, family environment, hereditary factors, (which obviously cannot be easily defined), sanitation, education and the availability of good medical and public health services determine the physical and mental health status of the individuals and the community. In addition, the living and work environment also contribute to the health status of individuals. (Marmot and Wilkinson, 2006).

Health is an integral part of socio-economic development as perceived by the united nations in 1979 (WHO, 1989), while being an end in itself, has also become a major instrument of overall socio-economic development and creation of a new social order. Education and health constitute both satisfaction of human need and an investment in human resource development. The concept of well-being and fulfillment of individual potential is a central concern of WHO together with other organizations of the United Nations systems, like UNICEF, UNDP and more recently the World Bank. On this realization, human development is defined not only in terms of the creation of wealth but also as a longer life and acquisition of knowledge and also an improvement in productivity and quality of the population. Better health, in forms of reduced morbidity and mortality and improved living standards, becomes an end in itself. It corresponds to the satisfaction of a basic need. More ever, people are more energetic and productive when they are in good health, thus improved health status leads to higher economic growth and greater wealth (WHO, 1994).

For most individuals the choice to live a healthy life free from illness and ailments and a reasonable lifespan are crucial attributes in the notions of personal well-being. Similarly for a society, a transition from a high incidence of morbidity and mortality to a state where people generally enjoy long and disease free lives is considered a desirable and valued social change.

It is only natural then, that indicator of health and longevity, as well as indicators that variously capture demographic concerns of a society are important constituents in the framework for evaluating the development process under the human development approach (National Human Development Report, 2001).

Morbidity is an important indicator of health status. The morbidity estimated reflects the overall health status of the population. The researchers have tried to measure the health status of the population with a varied range of indicators such as mortality, morbidity, anthropometric measures, nutritional status or calorie intake. Among these, 'morbidity', a state of illness, has been increasingly recognized as a measurable indicator of health and well-being and also considered with a potential for replacing mortality rates as indices of social and personal well-being (Duriasamy, 1998). Morbidity or illness imposes a heavy burden on the individual and society. There is loss of earnings to the family and loss of productivity to the society due to illness. Morbidity or a feeling of being sick is a subjective phenomenon. Morbidity is a state of disease brought about by some external or internal agent acting on body functions directly or indirectly (Kopparty, 1994).

Review of Literature

Uma Ramaswamy (1974) in his study on "Scheduled Castes in Andhra: Some Aspects of Social Change" examined how far the Scheduled Castes in Andhra Pradesh have benefited from the various measures for their advancement. He found that the Scheduled Castes continue overwhelmingly in their traditional occupations in rural areas. Even in the urban areas only a fraction of the posts in the administration which are reserved for them is actually filled. Similarly, they are still steeped in illiteracy and only a small proportion of the population of school-going age actually attends school. Completion of formal education even up to the secondary level is negligible.

Kusum K. Premi (1974) has found that marked progress has been made by the Scheduled Castes in education, as is manifest from the rise in their literacy rates, enrolment co-efficients and the proportion of their numbers in Class I and II categories of jobs in Central and State services.

Sharma (1974) revealed the factors such as enrolment, hostels and scholarships related to the education of the Scheduled Castes. He found that Scheduled Castes' alarmingly backward condition is connected to the deprivation they suffer in relation to the higher status groups and to the differential treatment they receive from the power elites among themselves. Broadly, the distributive disparities affecting the Scheduled Castes are at three levels, namely, between the Scheduled Castes and the general population, between the various Scheduled Castes, and among Scheduled Castes in a particular district or area.

Sulabha Brahme (1975) analyzed the impact of various schemes meant for the socio educational and economic improvement of the scheduled castes, because who are at the lowest rung of the socioeconomic ladder, since the beginning of the planning era in India in 1950 to 1975. The Scheduled Castes continue to work largely as agricultural labourers, with inadequate work and low wages or cultivate some inferior piece of land, without complementary inputs. Only a few received some education. Only a few have gained from the schemes and have reached some position of social, political or economic importance, but such number is infinitesimal. He opined that the present approach of concessions and special schemes can

hardly deliver more than what it contains. It is time that in 1975 one tries to take a fresh look at the problem and see the downtrodden classes get a rightful place in the sociopolitical-economic structure.

Dubey (1975) has found that highest percentage of the students going for higher education are of parents having higher literacy status as well as doing white collar jobs. His study also found that majority of the urban scheduled caste students are going for higher education when compared to the rural scheduled caste students.

Kamble (1989) has stated that even after 33 years of independence, Scheduled Castes have very low level of education and consequently they are engaged in menial jobs which are looked down upon and have low income.

Objectives

1. To portray the socio-economic conditions of the scheduled caste women in the study area.
2. To analyze the morbidity pattern and utilization of health care facilities among the scheduled caste women in the study area.

Methodology

The researcher has selected the Jaipur district from the 34 districts of the Rajasthan. This district has relatively large number of scheduled caste population. The total number of Scheduled caste households of the given area as per census 2011 was 1003302. The sampling of the study is said to be Multi- Stage Random sampling method. The Jaipur district has 13 blocks namely Amber, Bassi, Chaksu, Dudu, Govindgarh, Janwa Ramgarh, Jhotwara, Kotputli, Phagi, Sambhar, Sanganer, Shahpura and Viratnagar. Out of these 13 blocks, two blocks namely Bassi and Dudu were selected on the basis of the high concentration of scheduled Caste population. The researcher has selected three villages from the selected two blocks, namely Toonga, Jatwara and Ranjipura were selected randomly from Bassi block. The three villages namely Bichoon, Gagardoo and Akoda were selected randomly from Dudu block based on the high concentration of scheduled caste population and a total sample of 302 respondents was randomly selected for the present study.

Analysis and Discussions

Classification of Morbidity

Morbidity can be categorized broadly as Acute and Chronic depending upon the duration and degree of severity. Acute disease is the one which starts suddenly reaches its formation quickly and terminates in a limited duration. Chronic diseases develop insidiously over a long duration and continue for prolonged periods with periodic flare-ups and progressive deterioration and more utilization of health services. Duration lasting for more than 30 days is treated as chronic morbidity episodes while episodes lasting for less than 30 days are treated as acute morbidity episodes for the present study.

For the present study data on morbidity episodes experienced over a three month period were collected from 324 respondents in the study area. Information for each respondent was obtained about all episodes of illnesses that each respondent suffered during the preceding three

months from the date of interview. A check-list of diseases/symptoms was used to help the respondents to recollect the episodes suffered by the respondents as accurately as possible. As generally happens in a tribal setting, other people of the village used to gather around whenever the data is collected. They often used to help the respondent to recollect the missing information. A three month recall period was taken for the study after preliminary exploration which showed that in longer recall period only, serious and prolonged morbidity episodes are reported. This makes to underreporting of short-term morbidity episodes.

Distribution of Total Morbidities

The study found that 426 morbidity episodes of both acute and chronic morbidities were reported from the respondents over a three months period of reference. Out of the 426 morbidity episodes, 272 episodes were of an acute type and 154 episodes were of a chronic type. In other words, for every 2 acute morbidities reported in the sample, there was approximately 1 chronic morbidity. The morbidity prevalence rate over a three month period for the sample was 131. The total morbidity cases are presented in table-1

Tabl-1
Morbidity Levels Across the Respondents in the Study area

S.No.	Response	Frequencies	Percentages
1.	No disease	127	42.1
2.	Single	36	11.9
3.	Two	85	28.1
4.	More than two	54	17.9
Total		302	100

Source: Computed from primary data

Table-1 shows the morbidity levels among the respondents in the study area. It was revealed from the table that 42.1 percent of the respondents have no diseases. The 11.9 percent of the respondents have single diseases followed by 28.1 percent of the respondents have two morbidities and 17.9 percent of the respondents have more than two diseases.

Table-2
Disease Wise Distribution of Respondents in the Study Area

Type of Disease	Diseases	Frequencies	Percentages
Acute	Fever	107	33
	Headache	104	32
	Cough	113	34.8
	Knee Swelling	68	21
	Shoulder Pain	91	28
	Hand and leg Pain	87	26.8
	Diarrhoea	26	8
	Disease of Eye	17	5.2
	Minor Accidents & Injuries	36	11
Chronic	Blood Pressure	64	19.7
	Asthma	48	14.8
	Allergy and Skin	59	18.2

diseases		
Back Pain	62	19.1
Cancer	10	3
Thyroid Disease	36	11.1
Jaundice	20	6.2
Heart disease	43	13.3
Disease of Kidney / Urinary	26	8
Diabetes	36	11.11
Leprocy	7	2.1
Gas Trouble & Peptic ulcers	23	7.1
Numbness	14	4.3

Source: Computed from primary data

Note: Figures in parentheses denote percentages

Table-2 shows the acute and chronic diseases distribution among the respondents in the study. Among the acute diseases, morbidity of cough, fever, headache, shoulder pain and hand and leg pain were the main health problems. The percentage of respondents having fever problem was 33. The percentage of respondents having headache problem was 32. The percentage of respondents having Shoulder Pain problem was 28. The percentage of respondents having hand and leg pain problem was 26.5. The percentage of respondents having Knee Swelling problem was 21. The percentage of respondents having Diarrhoea problem was 8. The percentage of respondents having Disease of Eye was 5.2. The percentage of respondents having Minor Accidents & Injuries was 11.

While in the case of chronic diseases, Blood Pressure, Asthma, Allergy and Skin Disease and Back Pain was the main health problem in the study area. The percentage of respondents having blood pressure problem was 19.7. The percentage of respondents having asthma problem was 14.8. The percentage of respondents having Allergy and Skin Disease was 18.2. The percentage of respondents having Back Pain problem was 19.1. The percentage of respondents having Thyroid Disease was 11.1. The percentage of respondents having Diabetes was 11.11. The percentage of respondents having Disease of Kidney / Urinary was 8. The percentage of respondents having Leprocy was 2.1. The percentage of respondents having Numbness was 4.3.

Table-3
Distribution of Acute and Chronic Diseases among the Respondents

S.No.	Type of Disease	Frequencies	Percentages
1.	No disease	127	42
2.	Acute	112	37.1
3.	Chronic	63	20.9
Total		302	100

Source: Computed from primary data

Table-3 shows the distribution of diseases among the respondents in the study area. The majority of the respondents 42 percent have no diseases, followed by 37.1 percent have acute diseases and 20.9 percent have chronic diseases in the study area. One of the important factors

we can understand from the survey is that most of the respondents who are affected by chronic diseases are from poor socio economic background. The field data from this micro study reveals that morbidity pattern of diseases is very high in female respondents.

Table-4
Age-Wise Morbidity Pattern of the Respondents in the Study Area

Type of Disease	Age Group (in years)				Total
	18-27	28-37	38-47	Above-47	
No disease	30 (23.5)	44 (34.6)	34 (27.2)	19 (14.7)	127 (100)
Acute	26 (23.3)	48 (43.4)	31 (25.8)	9 (7.5)	112 (100)
Chronic	8 (11.8)	13 (19.1)	24 (35.3)	23 (33.8)	63 (100)
Total	64 (21.2)	104 (34.4)	86 (28.5)	48 (15.9)	302 (100)

Source: Computed from primary data

Note: Figures in parentheses denote percentages to the row total

Age is considered as the vital demographic factor affecting the morbidity. From the interpretation of the table we can infer that as we go higher in the age group, chronic diseases may have the tendency to increase. Under the age group of 18-27 percent, the respondents 23.5 percent have no diseases, 23.3 percent have acute diseases and 11.8 percent have chronic diseases. Under the age group of 28-37, the respondents 34.6 percent have no diseases, 43.4 percent have acute diseases and 19.1 percent have chronic diseases. Under the age group of 38-47 percent, the respondents 27.2 percent have no diseases, 25.8 percent have acute diseases and 35.3 percent have chronic diseases. Under the age group of above-47, the respondents 14.7 percent have no diseases, 7.5 percent have acute diseases and 33.8 percent have chronic diseases

Table-5
Occupation-Wise Morbidity Pattern of the Respondents in the Study Area

Type of Disease	Occupation					Total
	Agricultural labourer	Casual labour	Businessmen	Govt. Employ	Private Employ	
No disease	35 (27.6)	68 (53.5)	14 (11)	4 (3.1)	6 (4.7)	127 (100)
Acute	37 (33)	57 (50.9)	9 (8)	4 (3.6)	5 (4.5)	112 (100)
Chronic	22 (34.9)	29 (46.1)	5 (7.9)	3 (4.8)	4 (6.3)	63 (100)
Total	94 (31.1)	154 (51)	28 (9.3)	11 (3.6)	15 (5)	302 (100)

Source: Computed from primary data

Note: Figures in parentheses denote percentages to the row total

Table-5 shows the occupation wise morbidity pattern of the respondents. In this table, under the agricultural labourer category, 27.6 percent respondents have no diseases, 33 have acute diseases and 34.9 percent have chronic diseases. Under the Casual labour category, the respondents 53.5 percent have no diseases, 50.9 percent have acute diseases and 46.1 percent have chronic diseases. Under the Businessmen category, the respondents 11 percent have no diseases, 8 percent have acute diseases and 7.9 percent have chronic diseases. Under the Govt. Employment category, the respondents 3.1 percent have no diseases, 3.6 percent have acute diseases and 4.8 percent have chronic diseases. Under the Private Employment category, the respondents 4.7 percent have no diseases, 4.5 percent have acute diseases and 6.3 percent have chronic diseases.

Table-6
Income Wise Morbidity Pattern of the Respondents in the Study Area

Type of Disease	Income Group (in Rs.)				Total
	Below-25000	25001-50000	50001-75000	Above-75000	
No disease	40 (31.5)	37 (29.1)	30 (23.6)	20 (15.8)	127 (100)
Acute	41 (36.6)	32 (28.6)	25 (22.3)	14 (12.5)	112 (100)
Chronic	29 (46)	17 (27)	10 (15.9)	7 (11.1)	63 (100)
Total	110 (36.4)	86 (28.5)	65 (21.5)	41 (13.6)	302 (100)

Source: Computed from primary data

Note: Figures in parentheses denote percentages to the row total

Table-6 shows the income wise morbidity pattern of the respondents. In this table, under the income level of below Rs.25000, the respondents 31.5 have no diseases, 36.6 percent have acute diseases and 46 percent have chronic diseases. Under the income level of Rs.25001-50000 category, the respondents 29.1 have no diseases, 28.6 percent have acute diseases and 27 percent have chronic diseases. Under the income level of Rs.50001-75000, the respondents 23.6 percent have no diseases, 22.3 percent have acute diseases and 15.9 percent have chronic diseases. Under the income level of Above-Rs.75000 category, the respondents 15.8 percent have no diseases, 12.5 percent have acute diseases and 11.1 percent have chronic diseases.

Table-7
Problems Faced by Respondents due to Illness in the Study Area

S.No.	Type of Disease	Frequencies	Percentages
1.	Study of Children	42	13.9
2.	Family Matters	88	29.1
3.	Financial Problems	172	57
Total		302	100

Source: Computed from primary data

It is really touching that the respondents are saying with tears that they have a lot of problems in their family but they cannot reveal all these to everybody because nobody will help them in the form of cash or kind. They angrily said that the government is always on the side of rich people and not giving any single penny for our sake. There are several problems faced by the respondents due to illness. Table-6.2.7 shows the problems faced by the respondents due to ill health. The majority of the respondents 57 percent says that they have a financial problem in the family due to diseases, 29.1 percent of the respondents have their family problems due to the diseases and 13.9 percent point out that their children's study is affected badly by the diseases.

Table-8
Severity of Influence of Disease on the Work of the respondents

S.No.	Type of Disease	Frequency	Percentages
1.	Most adversely	97	55.4
2.	Adversely	40	22.9
3.	Moderate	2	1.1
4.	Less affected	26	14.9
5.	Not at all	10	5.7
Total		175	100

Source: Computed from primary data

Many work related or occupational diseases and disorders can take months or years of exposure before the symptoms become really a serious problem. The severity of disease occurred by the scheduled tribes is assessed through a 5 point scale such as most adversely, adversely, moderately, less affected and not at all affected. Table-6.2.8 shows that 55.4 percent of the respondents were most adversely affected by the illness, 22.9 percent of them were adversely affected, 1.1 percent was moderate, 14.9 less affected and 5.7 percent were affected not at all.

Table-9
Severity of Influence of Disease on the Family Income of the Respondents

S.No.	Type of Disease	Frequency	Percentages
1.	Most adversely	135	72
2.	Adversely	32	17.1
3.	Moderate	11	5.7
4.	Less affected	8	4
5.	Not at all	2	1.2
Total		175	100

Source: Computed from primary data

Another essential angle that influences the booked clans is the family pay. The planned clans did not go for their work because of disease and it influences them to gain less and in this manner, the family pay diminishes. In a developing economy, all things having more expensive rates can't manage the cost of with less income. Table-6.2.9 demonstrates the seriousness of impact of infection on the family salary. It is uncovered that 72 percent of the planned clans

said that they are most antagonistically influenced by the sickness in the matter of family's pay, 17 percent of them were unfavorably influenced, 6 percent were moderate, 4 percent were less influenced and 1 percent of the respondents were influenced not under any condition.

Table-10
Distance of Health Centre from the Residence of the Respondents

S.No.	Distance from Health Centre	Frequency	Percentages
1.	Below-5 Km	21	7
2.	6-10 Km	94	31.1
3.	Above-10 Km	187	61.9
Total		302	100

Source: Computed from primary data

Table-11 demonstrates the separation of wellbeing focus from the living arrangement of the respondents in the investigation territory. It uncovers that larger part of the respondents 61.9 percent were living over 10 Km of separation from the essential wellbeing focus, trailed by 31.1 percent of them were living 6-10 Km from the essential wellbeing focus and just 7 percent were living underneath 5 Km of separation from the essential human services focus.

Table-11
Sources of Treatment Wise Classification of the Respondents

S.No.	Type of Sources	Frequency	Percentages
1.	PHC	63	20.9
2.	Govt. Hospital	49	16.2
3.	Medical Shop	74	24.5
4.	Private Doctor	43	14.2
5.	Private Hospital	20	6.6
6.	Hakim	34	11.3
7.	Traditional Heeler	19	6.3
Total		302	100

Source: Computed from primary data

Table-11 demonstrates the wellsprings of treatment savvy grouping of the respondents. It is uncovered from the table that dominant part of the respondents 24.5 percent of the respondents get the treatment from the restorative shop pursued by 20.9 percent of the respondents get the treatment from PHC's, 16.2 percent of the respondents get the treatment from Govt. Healing facility, 14.2 percent of the respondents get the treatment from a Private specialist, 11.3 percent of the respondents get the treatment from Hakims, 6.6 percent of the respondents get the treatment from Private Hospital, 6.3 percent of the respondents get the treatment from customary heeler.

Table-12
Types of Disease Wise Treatment Seeking Behaviour of the Respondents

Types of Disease	Type of Hospital						Total
	PHC	Govt. Hospital	Private Doctor/Hospital	Medicinal Shop	Traditional Heeler/Hakim	Religious Centre/Person	
Acute	23 (20.5)	20 (17.9)	17 (15.2)	37 (33)	9 (8)	6 (5.4)	112 (100)
Chronic	-	48 (76.2)	15 (23.8)	-	-	-	63 (100)
Total	23 (13.2)	68 (38.9)	32 (18.3)	37 (21.1)	9 (5.1)	6 (3.4)	175 (100)

Source: Computed from primary data

Note: Figures in parentheses denote percentages to the row total

Table-12 demonstrates the ailment astute treatment looking for conduct of the respondents in the examination region. The aggregate number of respondents who were having sick wellbeing was 188 respondents. Out of the 175 respondents, 112 respondents have intense ailments and 63 respondents have incessant ailments. Out of the 112 respondents, 20.5 percent respondents get their treatment from PHC's, 17.9 percent get the treatment from Govt. healing facilities, 15.2 percent get the treatment from private specialist or private doctor's facility, 33 percent get their treatment from restorative shop, 8 percent get the treatment from customary heeler or hakims and 5.4 percent get their treatment from religious people. While as on account of ceaseless illnesses, the aggregate number of respondents was 63 of which, 76.2 percent get their treatment from Govt. healing facilities and 23.8 percent get their treatment from a private specialist or private doctor's facilities.

Table-13
Systems of Medicine Adopted by the Respondents

S.No.	Nature	Frequencies	Percentages
1.	Allopathy	89	29.5
2.	Homeopathy	27	8.9
3.	Ayurvedic	36	11.9
4.	Unani	21	7
5.	More than one System	129	42.7
Total		302	100

Source: Computed from primary data

Table-13 demonstrates the appropriation of frameworks of medication received by the respondents for their ailments. It is uncovered from the table that larger part of the respondents 42.7 percent received more than one arrangement of prescription I-e, either allopathy, and homeopathy or allopathy and ayurveda or allopathy and naturopathy, 29.5 percent embraced the Allopathic medication, 11.9 percent embraced the Ayurvedic drug 8.9 percent received the

Homeopathic prescription, and 7 percent respondents received the Unani medication for the treatment of their sicknesses. The information plainly uncovers that more than one arrangement of drug and allopathic framework are the most mainstream arrangement of treatment utilized by the innate family units, as they accept that for speedy help allopathic framework is the main cure.

Table-14
Practices of Health Care by the Respondents in the Study Area

S.No.	Practices of Healthcare	PHC	Govt. Hospital	Private Hospital	Other Source	Total
1.	Care of pregnancy	217 (71.9)	58 (19.2)	17 (5.6)	10 (3.3)	302 (100)
2.	Delivery	-	171 (56.6)	4 (1.3)	127 (42.1)	302 (100)
3.	Care of new born baby	7 2.3	208 68.9	47 15.6	40 13.2	302 (100)

Source: Computed from primary data

Note: Figures in parentheses denote percentages to the row total

Table-14 demonstrates the distinctive social insurance rehearses and diverse wellsprings of treatment among the booked clan ladies in the examination territory. It was seen that lion's share of the female respondents 71.9 percent get the consideration of pregnancy from Primary wellbeing focuses. It was additionally seen that lion's share of the female respondents conveyances 56.6 percent happen in the administration healing center. It was additionally seen that lion's share of the female respondents 68.9 percent take the consideration for new conceived children in the essential wellbeing focus. It was likewise seen that larger part of the female respondents 15.6 percent visit the private doctor's facilities for the treatment of basic ailments.

Findings

1. More than 20 types of morbidities of both chronic and acute type were reported. It was found out that the male respondents were having more acute morbidities and female respondents were having the more chronic morbidities in the study area.
2. It was found that in the case of acute diseases 66.7 percent were the male respondents and 63.3 percent were the female respondents while as in case of chronic diseases 36.8 percent were the male respondents and 63.2 percent were the female respondents.
3. It was revealed that 57 percent of the respondents said that they have a financial problem in the family due to diseases, 29 percent of the respondents have their family problems due to the diseases and 14 percent pointed out that their children's study was affected badly due to the diseases.
4. It was revealed that 72 percent of the respondents said that they were most adversely affected by the diseases in the matter of family's income, 17 percent of them were adversely affected, 6 percent were moderately affected, 4 percent were less affected and 1 percent of the respondents were affected not at all.

5. The majority of the respondents 62 percent were living above-10 Km of distance from the health centre and 6.8 percent were living below-5 Km of distance from the health centre.

6. It was found that in the case of acute diseases 20.8 percent of the respondents get their treatment from PHC's and 5 percent of the respondents get the treatment from hakims/traditional healers while as in case of chronic diseases 76.5 percent of the respondents get their treatment from Govt. hospitals and 23.5 percent get their treatment from private doctors or private hospitals.

7. It was found that majority of the respondents 21 percent get the treatment from the medical shop, 11.4 percent of respondents get their treatment from medical shop and 6.2 percent of the respondents get the treatment from traditional healers.

8. The study pointed out that, the majority of respondents 29.3 percent were using the Allopathy, 12 percent were using Ayurvedic and 42.6 percent were using the more than one system of medicine in the study area.

Policy Suggestions

1. The scheduled caste people often reside in geographically inaccessible and remote areas of the state; hence, there is a need for improving their physical accessibility that means improving their transformational facilities.

2. Eventually, there is a vital need for improved housing for the scheduled caste population including sources of drinking water and sanitation facilities. Hence, steps must be undertaken to construct quality of houses from the material locally available. Simultaneously, the Indira Awaas Yojana can be extended for scheduled caste population by devising special provision for the scheduled castes living in sub human conditions.

3. There is lack of knowledge regarding the health and nutritional problems or morbidities and fear to express them is a major cause of high prevalence. More education along with some awareness programmes through audio and visual means will be a panacea for improving the health problems among the scheduled castes.

4. There is a vital need for mass education program free of cost in the scheduled caste communities in order to raise their social and economic status. Furthermore, due importance to female education has to be accorded to increase the scheduled caste's literacy rate and educational attainment at par with their male counterparts and scheduled castes as a whole to minimize the scheduled castes and normal people disparities in the levels of education.

5. Given large illiteracy among scheduled caste population in general, the provision of schools and other high learning educational institutions in the scheduled caste areas with improved accessibility may help to develop scheduled caste human resource and skilled labour force which might improve their economic conditions.

References

Alka, Chandha et al., 2007. "Impact of Preventive Health Care on Indian Industry and Economy." *Indian Council of Research on International Economic Relations*, Working Paper No.198.

Dubey SM. *Social mobility among professions*", Bombay, Popular Prakashan Private Limited, 1975.

- Duraiswamy, P. 1998. "Morbidity in Tamil Nadu: Level, Differentials and Determinants." *Economic and Political Weekly*, XXXIII (17): 982-90.
- Gopal, C. 1998. "Obesity in the Indian Urban Middle Class." *Bulletin of the Nutrition Foundation of India*, 19: 1-5.
- Guy, Carrin. 1984. "Economic Evaluation of Health Care in Developing Countries-Theory and Application" London: Croom Helm.
- Kamble ND. Socio-economic and political profiles of Scheduled Castes, Indian Dissertation Abstracts 1989; 18(2):285-295.
- Kopparty. 1994. "Social Inequality and Health Care." New Delhi: Northern Book Centre.
- Kusum Premi K. Educational Opportunities for the Scheduled Castes: Role of Protective Discrimination in Equalisation, *Economic and Political Weekly* 1974; 9(45/46):1902-1905, 1907, 1909-1910.
- Lambo, T.A. 1979. "Economic and Health Policy Opening Address of XIIIth Colms." *Round Table Conference*, Geneva.
- NSSO. 2006. "Morbidity and Utilization of Medical Services." *Sarvekshana* (60th round), 4(51): 50-54.
- Ramaswamy U. Scheduled Castes in Andhra: Some Aspects of Social Change, *Economic and Political Weekly* 1974; 9(29):1153, 1155-1158.
- Sharma KL. Educational Inequalities among Rajasthan's Scheduled Castes, *Economic and Political Weekly* 1974; 9(37):1589-1592.
- Wilkinson, Richard G. 1997. "Socio-Economic Determinants of Health: Health Inequalities: Relative or Absolute Material Standards." *BMJ*, 314:591.
- Wilkinson and Marmot. 2006. "Social Determinants of Health." 2nd edition, p. 376. Oxford, Oxford University Press.
- Winikoff and G. Brown. 1980. "Nutrition Population and Health: Theoretical and Practical Issues." *Social Science and Medicine*, 14: 171-76.
- World Health Organization. 1989. "Health Guidelines for the use of Waste Water in Agriculture and Aquaculture." Geneva.

STUDY ON GOVERNMENT PROGRAMS FOR SAVING AND INVESTMENT

MAMTA RANI

Assistant Professor in Commerce

JCD Memorial PG College, Sirsa (Haryana)

ABSTRACT

Due to introduction of globalization, the competition is increasing in almost every field of life. Most of the people tend to secure the future of their selves and their family members and hence, they look for those schemes and programs which can benefit them in the gaining the extra income so that healthy financial status can be achieved and at the time of any emergency, they need not to go here and there for arranging the financial needs.

Indian government has launched a number of schemes which certainly help them in gaining the extra income in terms of the provision of the rate of interests on the fixed account. This fixed account can be opened in government banks. These days, the Indian post offices are also providing the facilities of fixed deposit to the people by ensuring good amount of income courtesy of some interest rates. In the current study, 250 respondents from Delhi-NCR were asked about their preference of saving and investment schemes. The current paper highlights various schemes and programs initiated by Indian government for saving and investment.

KEYWORDS:

Saving, Investment, Financial, Bank, Post-office

INTRODUCTION

The basic desire of a common investor is that he/she can get high range of returns from the invested money with no or lesser risks. Hence, most of the investors go for those schemes which can return them almost double of their invested money in few months or years with less risk factor.

Practically, it is very difficult to get higher returns with less risk. In other terms, it can also be said that the returns on investment and risk factors are directly proportional to each other which means that the investment schemes where the risks associated are higher then there are more number of chances of getting good returns. On the other hand, lesser returns are observed through the schemes where less number of risk factors is associated with it.

Hence, one has to take real risk chance in order to gain huge amount of profit from the invested money. Therefore, it is suggested for all the investors that before making any investment, they should first look at their own risk profile and whether they can survive or not on getting any kind of loss from the investment done.

Indian government has launched the National Pension Scheme (NPS) for the interested people. Under NPS scheme, the basic objective is to focus on the time after the retirement of a person i.e. after the age of 60. This scheme of saving is for the persons between the ages from 18 to 55 where a person has to deposit a fixed amount of installment every month and after the age of 60, the person gets the saved money with a particular rate of interest. Here, the value of

depositing money installment varies according to the age of the person at the time of the initiation of the account. Hence, an interested person with lower age has to give less amount of installment as compared to those with higher ages.

The other good scheme for saving & investment is Public Provident Fund (PPF). This scheme is very popular among the employees. PPF is supposed to be the safest type of investment where the risk factor is not too high. This scheme has a long tenure of 15 years. Here, a person gets the benefit of tax-free interest in the later years.

Indian government has launched 'Atal Pension Yojna' where the employees working in private sectors can get a fixed amount of pension after the age of 60 years; ranging from Rs. 1000 to 5000 depending on the plan chosen by them. Here, in case of the death of the account holder, the money is given to the nominee. This government scheme is primarily focused on the people of lower-middle class so that a provision of social security can be given to them.

National Savings Certificate (NSC) is another saving scheme initiated by Indian Government. The main objective of this scheme is to motivate the people for doing some savings as the minimum amount to be deposited under this scheme is kept Rs. 100 and hence, any interested person can deposit the money from Rs. 100 to his/her requirement. The rate of interest tends to change every year for this scheme. For the financial year of 2017-18, the rate of interest was 7.6% per annum. The biggest highlight of this scheme is that the customer gets the deduction in tax of approximate Rs. 1.5 Lakh under Section 80C of Income Tax Act. A number of people show their interest in this scheme.

Pradhan Mantri Jan Dhan Yojna is also very popular and is implemented by the government on the larger scale where a number of zero balance saving accounts are opened. This account provides basic banking services like saving account, deposit account, insurance and pension etc. In India, most of the lower class families have no bank account and hence, Indian government took an initiative and proposed Indian banks to open the zero balance account of those persons who have no bank account. The account holders can deposit money in the saving account according to their affordability's. Hence, Indian government has launched a number of saving & investment schemes which provide a number of facilities to the customers with lesser number of risks. Most of the people are taking benefits from these schemes and earning extra income.

Indian post offices have also started opening saving accounts where the rate of interest is kept 4.0% per annum on individual/joint accounts. These accounts are opened starting from Rs.20/- to no limit. Here, the customers who don't get the facility of Cheque book are asked to keep minimum Rs. 50/- in their account so that their accounts can be working smoothly without any interruption.

Post Office Saving Account is similar to that of a normal bank account where the customers are provided with all kinds of services from ATM, online money transfer, nomination facility etc.

Post offices also provide the monthly income scheme account where a customer can deposit maximum INR 4.5 Lakh and returns are obtained with the rate of interest of 7.3%. For

example, under this scheme, if a person deposits INR 3 Lakh then according to the applied interest rate of 7.3%, that person will get a monthly income of Rs. 1825.

In the Recurring Deposit account, the interest rate is 7.3% per annum which is compounded quarterly. This account can be continued for 5 years or year to year basis. Most of the people are also showing interest in this scheme as well.

OBJECTIVES OF THE STUDY

The objectives of the current paper are as follows:

- i) To highlight the different programs related to saving and investment started by Indian government.
- ii) To discuss the choice of investments.
- iii) To analyze the data regarding most preferred savings instrument, Prime objective for investments and Risk appetite.

RESEARCH METHODOLOGY

In the current study, 250 respondents from Delhi-NCR were asked about their preference of saving and investment schemes. The random sampling method was used here. The respondents were asked about their preferred saving instrument, objective of their investment.

CHOICE OF INVESTMENTS

An investor's plan for investment is developed on the following parameters:-

- a. Liquidity needs: The liquidity is the conversion of the investments into cash for meeting urgent expenses or commitments. An investor may invest his surplus money into various kinds of investment instruments with an objective of encashing an instrument at the earliest when needed. The investment in a savings bank account is highly liquid and in a bond illiquid.
- b. Appropriate time horizon: The money saved by the investors is used for fulfilling future needs and the investor earns the returns on different financial instruments as per their features. The investor chooses the savings and investment instruments in view of his plans for future needs. Thus, investments in money market instruments for short term and in fixed deposits/bonds for long term are made.
- c. Regular income and capital appreciation requirements: The need for getting a regular income is one of the important criteria for some investors. An old –aged investor may be more inclined to invest in a monthly income scheme to have regular income for fulfilling his regular daily needs. Another investor may put the money in a fixed deposit for 3-5 years since his need is to get cumulative returns.
- d. Need for diversification: A wise investor always likes to invest the savings in a diversified portfolio. This helps in balancing out the inherent risks of investments. The diversification helps in minimizing the risks, if not eliminating it totally. An investor may invest in a basket of securities and also in many company shares if equity investments is the only option chosen.

e. Minimize tax liability: Some financial instruments provide tax benefits and many plan their investment options to minimize their tax liability. The investors normally in higher tax brackets choose to invest in LIC schemes or PPF accounts to avail tax benefits and rebates, thus their tax liability gets reduced. The Income Tax Act 1961 provides such benefits under various sections.

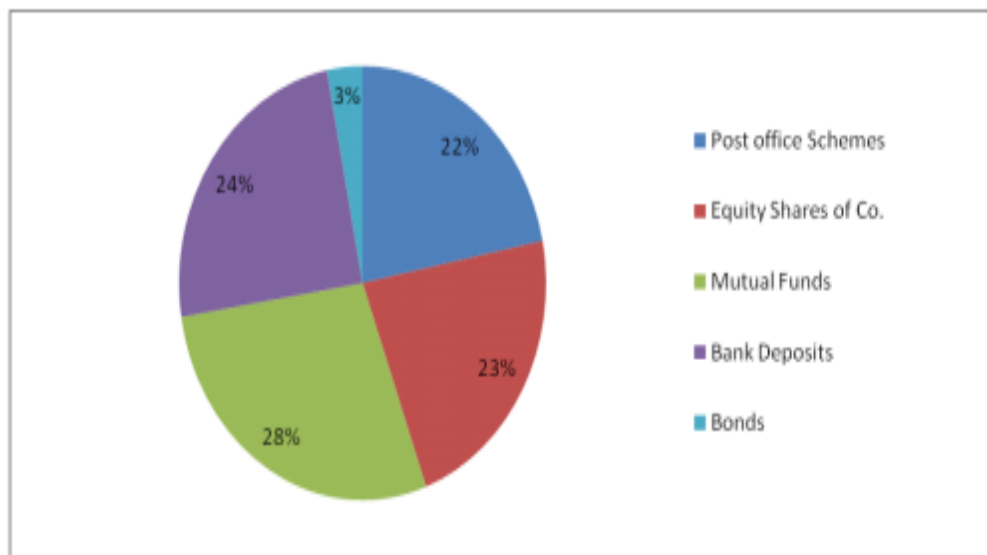
DATA ANALYSIS

In the current study, 250 respondents from Delhi-NCR were asked about their preference of saving and investment schemes. In this study, the most preferred savings instruments of the respondents are as follows:

Table 1: Most preferred savings instrument

Saving Instrument	% age
Post office Schemes	22
Equity Shares of Co.	23
Mutual Funds	28
Bank Deposits	24
Bonds	3

Pie Chart 1: Most preferred savings instrument



The Table 1 and pie chart 1 reveal that investors want to invest in wide variety of savings instruments keeping in view their risk appetite. 22% invest in Post Office schemes which provide sovereign guaranteed fixed rate of return. The mutual funds have attracted 28% of the respondents, 24% have been attracted to bank deposits and 23% invest in equity shares of

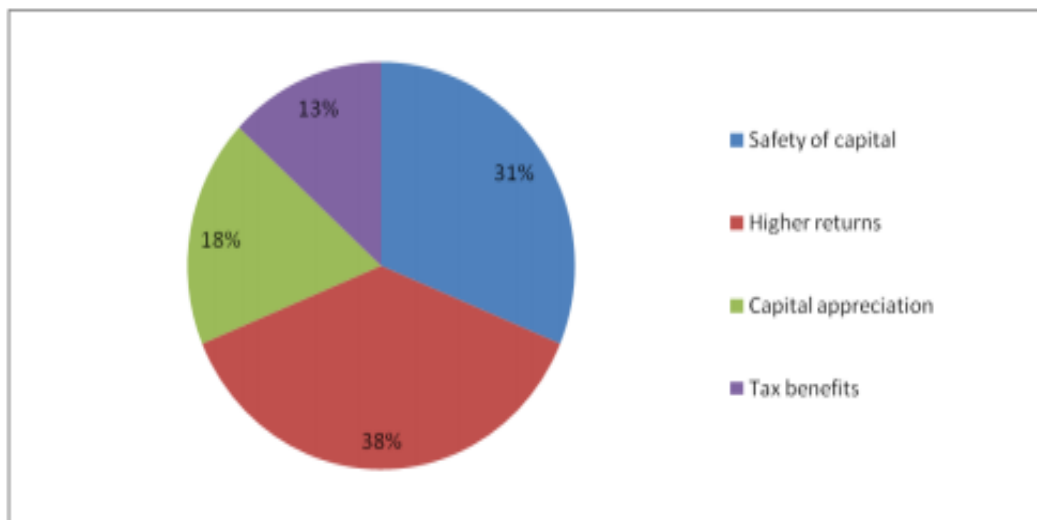
companies. This shows that investors have their own most preferred saving instrument according to their need, choice and return expectations.

Investors buying behavior related to mutual funds were analyzed on the basis of prime objective of making savings and investment.

Table 2: Prime objective for investments

Prime Objective	% age
Safety of capital	31
Higher returns	38
Capital appreciation	18
Tax benefits	13

Pie Chart 2: Prime objective for investments

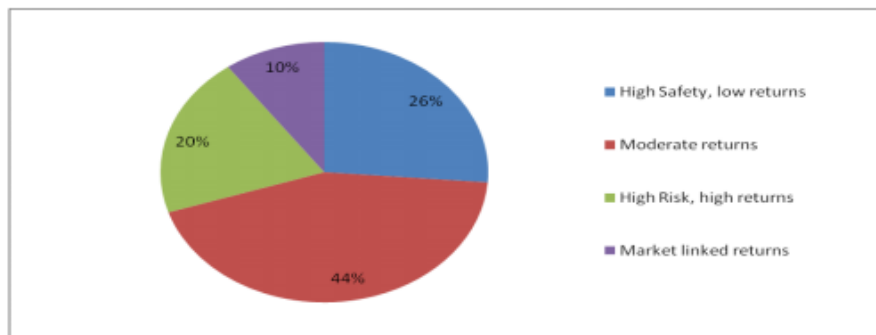


The different investors have different prime objectives for their savings. As per Table 2 and pie chart 2, it is revealed that 38% of the investors consider earning higher returns as the prime objective of their investments. The safety of the capital is the prime objective of 31% of the respondents. 18% of the respondents have capital appreciation as their major objective. Tax benefits are the prime objective with only 13% investors in this study. The majority of the investors want to earn higher return which is possible only in MF schemes as compared to other saving instruments like bank deposits, bonds & post office saving schemes.

Table 3: Risk appetite

Risk Appetite profile	%age
High Safety, low returns	26
Moderate returns	44
High Risk, high returns	20
Market linked returns	10

Pie Chart 3: Risk appetite



The Table 3 and pie chart 3 reveal that majority 44% respondents expect moderate returns from their investments. As they are more concerned with safety of capital, are happy earning moderate returns. Further 26% respondents want high safety and are comfortable with low returns. 20% are ready to take high risk with high returns. There is also a segment of about 10% who are willing to move with the market. They are ready to earn market related returns.

CONCLUSION

Investors generally neglect a fund's operating expense ratio when buying funds. This result raises the possibility that the more salient disclosure of mutual fund operating expenses could affect investor behaviour. Though buying past winners can be reasonably justified, selling one's winners rather than losers and neglecting a fund's operating expenses when buying a mutual fund cannot. The Mutual funds with high operating expenses earn lower net returns than funds with low operating expenses. Thus, investors should buy funds with low operating expenses and sell their losing fund investments.

Lastly, every investor has to appraise his risk-appetite, understand his financial goals and make investments. It is also important to analyze the risk-return trade off and then make investment decision. The investors, at large, in the mutual fund industry make investments in the various schemes of mutual funds, in view of their risk-appetite and their investment goals. Since the risk diversification is one of the unique features of mutual fund investments, the investment pattern of the investors is guided by the scheme objectives and one's financial goals

REFERENCES

- Ande, D., (2013). Determining Factors Affecting Performance of Indian Mutual Funds. Submitted to: SVKM's NMIMS University, Degree of Ph.D. (Management Studies).
- Ankrim, E., (2012). Risk adjusted performance Attribution. Financial Analyst Journal. 48(2), 75-82.
- Ansari, M., (2013). Mutual Funds in India: Emerging Trends. The Chartered Accountant, 42(2), 88-93.
- Appel, M., (2014). Investing with exchange Traded Funds Made Easy. New Jersey, USA: Pearson Education Inc.
- Baid, R., (2013). Mutual Funds Products and Services. Indian Institute of Banking and Finance. Second Edition. Mumbai: Taxmann Publications (P.) Limited.
- Baird, C., (2012). The Complete Guide to Investing in Index Funds: How to earn high rates of return safely. Florida, USA: Atlantic Publishing Group, Inc.
- Bello, A., and Adedokun, L., (2011). Analysis of the Risk-Return Characteristics of the Quoted Firms in the Nigerian Stock Market. International Journal of Business and Social Science. 2(17).
- Bhalla, V., (2013). Investment Management. Nineteenth Edition. New Delhi: S. Chand & Company Pvt. Limited.

BREAKDOWN PROCESSES IN SULFUR HEXAFLUORIDE GAS (SF₆)

Mamidanna Ramalingeswar Rao¹ ,

Dr. Tryambak Hirwakar

¹ Research Scholar, Department of Electrical Engineering, Sri Satya Sai University of Technology & Medical Sciences, Sehore, MP

ABSTRACT:

SF₆ has been classified as an electronegative gas due to its ability to capture free electrons. The capture of these electrons leads to the formation of stable negative ions. The reduced mobility of these negative ions and the depletion of free electrons in a region of electrical stress results in a higher dielectric strength for SF₆ as compared to non-electronegative gases.

The breakdown of gases, both electronegative and non-electronegative, has been explained by two theories, the Townsend theory and the streamer theory. Townsend's theory has been found to be inadequate in explaining fast breakdown processes in non-uniform fields while the streamer theory has been found to be quite adequate under these conditions

KEYWORDS : Sulphur Hexafluoride , Electronegative , Breakdown , Gases

1 INTRODUCTION

SF₆ has been classified as an electronegative gas due to its ability to capture free electrons. The capture of these electrons leads to the formation of stable negative ions. The reduced mobility of these negative ions and the depletion of free electrons in a region of electrical stress results in a higher dielectric strength for SF₆ as compared to non-electronegative gases.

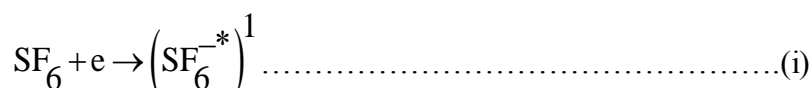
The breakdown of gases, both electronegative and non-electronegative, has been explained by two theories, the Townsend theory and the streamer theory. Townsend's theory has been found to be inadequate in explaining fast breakdown processes in non-uniform fields while the streamer theory has been found to be quite adequate under these conditions. The theories have both qualitative and detailed quantitative descriptions. Before either theory can be applied to SF₆, however, a knowledge of the microscopic behavior of the gas in regions of electrical stress is important.

2 IONIZATION AND ATTACHMENT PROCESSES IN SF₆

Ions are formed in non-electronegative gases by collision. Free electrons accelerated by the applied field collide with neutral molecules releasing more electrons and forming positive ions. The number of free electrons increases until breakdown occurs. In an electronegative gas such as SF₆ the free electrons are captured, therefore, their number is decreased and breakdown does not occur.

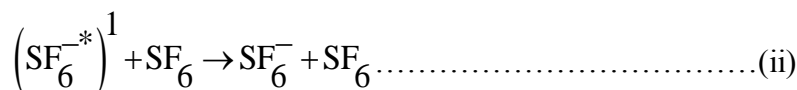
The capture of electrons in SF₆ and the subsequent formation of SF₆⁻ and SF₅⁻ have been studied by many research groups. (8) (1) (10)

The capture process taking place in SF₆ is a resonance capture. Low energy electrons, .05eV, are attached to neutral SF₆ molecules resulting in the formation of metastable ions. The majority of ions in SF₆ are of SF₆⁻ and SF₅⁻ both are formed from an attachment reaction:

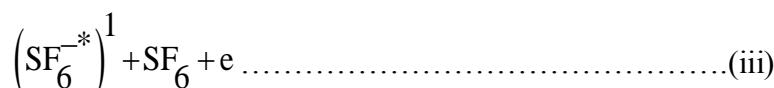


In the case of SF₆⁻ ions the metastable ion (SF₆^{-*})¹ in reaction (1) is the first step in their formation. This metastable ion is in the first excitation state denoted by the superscript 1. Its life time has been measured at 10 microseconds.(9)

The ionisation process may now proceed in one of two directions. If the metastable ion is in further collision with a neutral gas molecule a stable SF₆⁻ ion is formed.

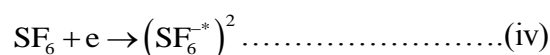


If this collision does not take place the metastable ion undergoes an "auto detachment" reaction.

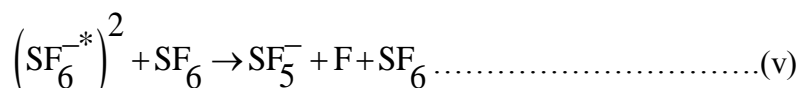


The electron is released and the molecule returns to the ground state.

The formation of SF₅⁻ follows a similar process based on the metastable ion (SF₆^{-*})² The lifetime of is exceedingly short and has been found to be of the order of .1 microseconds (1) . A similar resonance capture reaction takes place in the formation of (SF₆^{-*})².

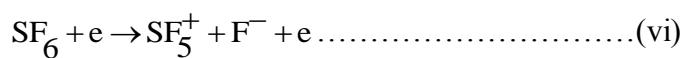


This metastable ion is in a higher excitation state than (SF₆^{-*})¹. The reaction then proceeds to the formation of SF₅⁻ and F.

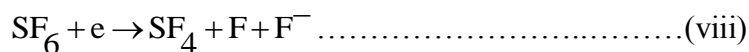
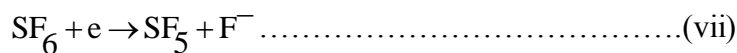


Edelson, Griffiths and McAfee (1967) (9) reported the existence of SF_4^- and SF_3^- ions. These ions were formed from the metastable ions $(SF_6^{*})^4$ and $(SF_6^{*})^5$ the electrons captured in each reaction required energies of 5 and 10 eV respectively.

Other reactions take place in SF_6 which do not affect the net ion population in the area under electrical stress. These reactions have been classified as dissociative processes. If neutral SF_6 , molecules collide with electrons having an energy greater than 17.3 eV SF_5^+ and F^- ions are formed.



If neutral SF_6 molecules collide with electrons having an energy slightly greater than 4 eV a change in the net ion population occurs. (10)



The ionization and attachment reactions have been given quantitative meaning in the form of ionization and attachment coefficients. Both coefficients have been measured experimentally and these values have been used in the analysis of breakdown processes in SF_6 .

The ionization coefficient, α , has been "defined as the mean number of ionizing collisions by one electron per unit length drift in the direction of the applied field.(11) The attachment coefficient a has been related to the probability that an electron will undergo an attachment reaction as it moves through the gas in the direction of the applied field. (12)

Values for both, α and η has been measured by Bhalla and Craggs (13) (1961) and Boyd and Crichton (1971) (14). By measuring the current in a uniform field gap at fixed values of E/p , and variable gap length d , where E is the applied field and p is the pressure in the system, values for α and η were calculated. The calculations of α and η have been based on Current measured at pressures ranging from .07 to 2,63 atm. Both values have "been found to have a relatively small pressure dependence in the range of 750 - 2000 torr. At pressures below 750 torr no pressure dependence has been reported. These measured values have been used in the streamer and Townsend breakdown theories in an effort to analytically calculate breakdown voltages in a given field configuration.

3 BREAKDOWN MECHANISMS IN SF_6

3.1 UNIFORM FIELD BREAKDOWN MECHANISMS

The electrical breakdown of a gas insulated uniform field has been explained by two theories. The first breakdown theory was developed by Townsend, (15) for non-attaching gases. Townsend's theory is centered around the formation of an electron avalanche. Initiatory electrons are released from the cathode by photoelectric emission. These electrons are accelerated by the applied field toward the anode. When they collide with neutral gas molecules ionization takes place and more electrons are emitted. This process continues with the number of electrons increasing exponentially. Townsend's theory relates the current in the gap, i , to the initial photoelectric current i_0 , by the expression

$$i = i_0 \exp(\alpha d) \dots\dots\dots(iii)$$

where α is the first ionization coefficient and d is the gap length.

When Townsend applied, the expression to uniform fields insulated with compressed gases the calculated values did not correspond to measured data. The theory was then expanded to take into account secondary ionization processes. Electron emission by positive ion bombardment of the cathode and other ionisation processes were accounted for by the introduction of the secondary ionisation coefficient γ . The expression for the current flowing in the gap became:

$$i = \frac{i_0 \exp(\alpha d)}{1 - \gamma(\exp(\alpha d) - 1)} \dots\dots\dots(iv)$$

At breakdown the current in- the gap theoretically goes to infinity. Townsend's theory, therefore, is expressed as a criterion for breakdown when the denominator of equation (4) goes to zero, or

$$\gamma(\exp(\alpha d) - 1) = 1 \dots\dots\dots(v)$$

Geballe and Reeves (1953) [16] derived an expression for current flowing in a uniform field gap insulated with an electronegative gas. The following expression is based on Townsend's theory and takes into account the attachment process by including the attachment coefficient

$$i = \frac{[\alpha / (\alpha - \eta)] \exp\{(\alpha - \eta)d\} - \eta / (\alpha - \eta)}{1 - \{\gamma \alpha / (\alpha - \eta)\} \{\exp(\alpha - \eta)d - 1\}} \dots\dots\dots(vi)$$

Comparisons made by Geballe and Reeves between calculated, current, using equation (6), and measured values in SF₆ indicated a maximum difference of +14%.

Townsend's theory was found to be unsatisfactory in explaining breakdown processes under steep front impulse voltages. Breakdowns occurring in times less than one microsecond could not be satisfactorily explained by a theory which required the generation of many avalanches

taking several microseconds to bridge a gap, a fact which led to the concept of the streamer type of breakdown.

The streamer theory was proposed by Meek and independently by Raether. This theory takes into account three processes; the formation of an electron avalanche, the transition from an avalanche to a streamer and the propagation of a streamer across a gap.

The streamer theory is a single avalanche mechanism. A positive surface charge from a single electron avalanche formed in a similar manner as described by Townsend distorts the electric field in the gap. This results in an enhancement of the field at the avalanche head. Positive ions formed as a result of the electron avalanche move towards the cathode. A cone shaped space charge with a negative head results, from the avalanche. When the avalanche reaches the anode the electrons are swept into the anode leaving a cone shaped low ion density space charge across the gap. Due to the low ion density in the cone breakdown does not occur, however during the build-up of the avalanche excitation of gas atoms has been taking place. Due to the short life time of these excited atoms photons are released as the atoms return to the ground state. These photons are responsible for photoionization resulting in the initiation of secondary avalanches. These avalanches produce positive ions. A conducting channel formed from the original cone and auxiliary ions bridges the gap. Through this channel the final streamer channel propagates, and breakdown occurs. (17)

In an electronegative gas the positive space charge is effectively neutralized by the negative ions. The streamer mechanism is halted until the negative ions undergo detachment reactions. Once the applied field is sufficiently high to cause this reaction the streamer mechanism continues in the manner already described.

The dielectric strength of an SF₆ insulated uniform field system has been reported to range from 1.8 to 3 times that of air. (18) A value of 89 kV/cm atm is accepted as the dielectric strength which most closely satisfies both measured and calculated values. This value does not apply to the entire pressure range in which SF₆ remains gaseous. As the pressure of the system increases, with a fixed gap length, the slope of the breakdown voltage-pressure curve decreases.

The dielectric strength of SF₆ has been studied at pressures up to the liquid state at 20°C. Works, Dakin and Rodgers (1964) (19) conducted this investigation and found that under impulse applied voltages no discontinuities existed in the curve of break down voltage versus pressure when the SF₆ passed into the saturated vapour state.

3.2 HON UNIFORM FIELD BREAKDOVN MECHANISMS

The Townsend theory of uniform field breakdown in a non-attaching gas was modified to suit a non-uniform field by accounting for the fact that the value of α was dependent on the electric

field. The value of α was found to vary aft the integral of the distance travelled across the gap. Therefore equation (3) was modified and the current – flowing in the gap was expressed as:

$$i = i_0 \exp \int_0^d \alpha dx \quad (7)$$

where d is the gap length. When secondary ionization processes were accounted for the expression became:

$$i = \frac{i_0 \exp \int_0^d \alpha dx}{1 - \gamma \left\{ \exp \left(\int_0^x \alpha dx \right) - 1 \right\}} \dots\dots\dots(viii)$$

Pederson (1970) (20) derived the following expression for the current in a non-uniform field insulated with SF₆.

$$\frac{i}{i_0} = \frac{1 + \int_0^d \exp \left\{ \int_0^x (\alpha - \eta) dx \right\} \alpha dx}{1 - \gamma \int_0^d \exp \int_0^x \{ (\alpha - \eta) dx \} \alpha dx} \dots\dots\dots(ix)$$

The breakdown criterion farmed from equation (9) is:

$$\gamma \int_0^d \exp \left\{ \int_0^x (\alpha - \eta) dx \right\} \alpha dx = 1 \dots\dots\dots(Ix)$$

The Townsend breakdown theory fails in attaching gases in non-uniform fields due to the rapid variation of α and η with field gradient , It is possible to have regions in a non-uniform field where $\eta \gg \alpha$. These regions occur near the cathode which means that the generation of free electrons is virtually impossible since the number of electrons attached is greater than the number of electrons generated through ionization. It follows therefore that the electrons needed.to initiate the avalanches cannot he produced, and the breakdown cannot proceed.

The use of the streamer mechanism to explain breakdown in non-uniform fields has met with both success and criticism. The theory has been analytically described and implemented with good results. The qualitative description of the streamer mechanism in a non-uniform field is similar to that described for the uniform field case. In a non-uniform field the streamers can be anode or cathode directed depending on the polarity of the rod electrode.

Pedersen has conducted extensive work on the analytical interpretation of the streamer theory. He has derived the following breakdown criterion for non-attaching gases.

$$\alpha_x \exp \left\{ \int_0^x \alpha dx \right\} = g(x, \rho) \dots\dots\dots(xi)$$

Where α_x is the value of α at the head of the avalanche, ρ is the gas density and x is "the critical avalanche length.

For an attaching gas Pedersen modified equation (11) to account for the attachment process resulting in the expression:

$$(\alpha_x - \eta_x) \exp \left\{ \int_0^x (\alpha - \eta) dx \right\} = G(x, \rho) \dots\dots\dots(xii)$$

where η_x is the value of η at the avalanche head. Due to the rapid variation of $\{\alpha - \eta\}$ with field, strength the implementation of equation (12) resulted in noticeable polarity affects not observed in Equation (12) was further modified to account for this variation of $(\alpha - \eta)$ with field strength, resulting in the expression:

$$\alpha_x \exp \left\{ 2 \int_0^x (\alpha - \eta) dx \right\} = F(x, \rho) \dots\dots\dots(xiii)$$

Taking the natural logarithm of equation (13)

$$\frac{1}{2} \ln(\alpha_x) + \int_0^x (\alpha - \eta) dx = f(x, \rho) \dots\dots\dots(xiv)$$

Pedersen introduced still further simplifications by assuming that $f(x, \rho)$ varied little with x or ρ and that the logarithmic term had little effect on the value of $f(x, \rho)$. This resulted in the final breakdown criterion:

$$\int_0^x (\alpha - \eta) dx = \kappa \dots\dots\dots(xv)$$

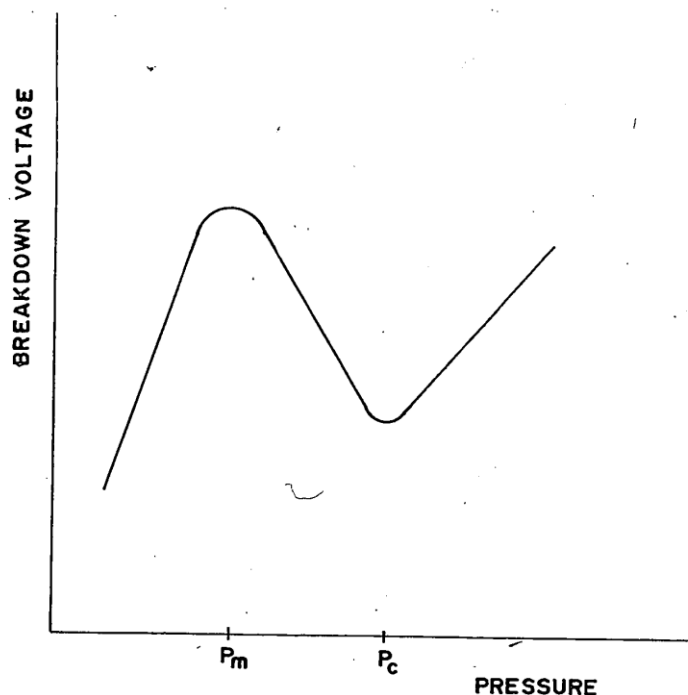
The value of κ has been chosen from the available room temperature uniform field breakdown data and has a value of approximately 18. Equation (15) can be interpreted to mean that streamers are formed when a critical number of ions is reached.

In highly non-uniform fields SF₆ exhibits two distinctly different breakdown voltage pressure characteristics depending on the polarity of the rod electrode. When the region of high stress is located near the anode the characteristic curve has a form similar to that in Figure (10).

The curve of breakdown voltage versus pressure has a maximum at P_m and a minimum at P_c . P_c is the critical pressure at which corona onset and breakdown coincide,

The breakdown characteristic between the origin and P_c has been called a region of corona stabilized breakdown. Pollock and Cooper (1939) (21) have attributed the maximum breakdown voltage point at P_m to the formation of negative ions. These ions form a negative space charge around the rod anode. This space charge reduces the degree of field non-uniformity and neutralizes the positive ion channel in the gap. As the pressure in the system increases the number of positive ions in the gas increases until the pressure P_c is reached. At this point the positive ion population is sufficiently high to ensure that the first streamer formed bridges the gap and breakdown occurs.

In the instance of a rod cathode the negative ion space charge moves to the planar anode. The degree of non-uniformity of the field is not affected and no corona stabilized breakdown region is observed. The dielectric strength of the system simply increases in a non-linear fashion with pressure.



1 POSITIVE POINT BREAKDOWN VOLTAGE PRESSURE CHARACTERISTICS FOR AN ELECTRONEGATIVE GAS

REFERENCES :

1. Alston, L.L., High Voltage Technology, Oxford University Press, pp. 18, (1968).

2. Hazel, R.L., DC Breakdown and Anode Current Characteristics of Sphere and Rod Plane Gaps Insulated with Compressed Sulphur Hexafluoride, University of Windsor, Phd Thesis, Windsor, pp.112, (1974).
3. Bhalla, M.S., and, Craggs, J.O., Measurement of Ionization and Attachment Coefficients in Sulphur Hexafluoride in Uniform Fields, Proc .Physical Soc., 80, pp. 151 -160 (1960)
4. Boyd, H.A., and Crichton, G.C. Measurement of Ionization and Attachment Coefficients in SF₆, Proc. IEEE 118, No. 12, pp. 1872 - 1877, (1971).
5. Meek, J.M., Croggs, J.D., Electrical Breakdown of Gases, Qxford Press, London, pp. 80 SD, (1953).
6. Geballe, R., Reeves, M., A Condition on Uniform Field Breakdown in Election - Attaching Gases, Physical Review, 92, No.4, pp. 867 - 868, (1953)
7. Nasser, E., Fundamentals of Gasgous Ionization and Plasma Electronics, John Wiley, New York, pp. 264 - 275, (1971)
8. Howard, P.R., Insulation Properties of Compressed Electronegative Gases, Proc. IEE, 104 pp 123 - 135, (1957).
9. Works C.N., Dakin, T.W. and Rodgers, R.W. Electrical Breakdown of SF₆ at High Pressure up to the liquid State, Annual Report of Conference on Electrical Insulation, pp., 69 - 72, (1964)
10. Pedersen, A., Criteria for Spark Breakdown in Sulphur Hexafluoride, TRANS. IEEE PAS, 69, No, 89, No. pp.2043 – 2048, (1970)
11. Pollock, H.C., Cooper, F.S., The Effect of Pressure on the Positive Point to Plane Discharge in N₂, O₂, CO₂ SF₆, CCl₂, F₂, A, He, H₂, Physical Review, 56, pp.170 – 175, (1939)
12. Cookson, A-H., Electrical Breakdown for Uniform Fields in Compressed Gases. TRANS. IEE, 117, pp. 269 - 279, (1970).

ROLE OF MICROFINANCE IN INDIAN INDUSTRIAL ECONOMY

Narinder Sharma

India is a largest country in terms of economy. India has social banking for a long time. Policy directions to rapidly expand rural branches, mandate credit allocations for priority sectors (including agriculture), deliver large subsidy oriented credit programmes to serve marginal communities and poor households and control interest rates have been tried for over 35 years. For these purposes, microfinance industry is set to reach new heights. With superlative growth numbers in a period of economic downturn, the sector has come to attention of a wider range of investors. The rapid growth of the microfinance sector in the last few years has completely changed its complexion and nature. The growth has transformed microfinance: from being a sub-set of the development sector it has become a sub-set of the financial services industry. In the last two years competition amongst microfinance institutions (MFIs) as well as with the Self Help Group (SHG) movement has emerged in India. This paper discusses the role of microfinance industry in country's economic growth in terms of its GDP. It also discusses the changed scenario in the competitive environment and the issues in microfinance institutions. Karl Pearson's coefficient of correlation is used to determine the role of microfinance in country's growth, which state a very high correlation between these two.

INTRODUCTION

Due to its large size and population of around 1000 million, India's GDP ranks among the top 15 economies of the world. However, around 300 million people or about 60 million households, are living below the poverty line. It is further estimated that of these households, only about 20 percent have access to credit from the formal sector. Micro-finance refers to small savings, credit and insurance services extended to socially and economically disadvantaged segments of society. In the Indian context terms like "small and marginal farmers", "rural artisans" and "economically weaker sections" have been used to broadly define micro-finance customers. The recent Task Force on Micro Finance has defined it as "provision of thrift, credit and other financial services and products of very small amounts to the poor in rural, semi urban or urban areas, for enabling them to raise their income levels and improve living standards". At present, a large part of micro finance activity is confined to credit only. Women constitute a vast majority of users of micro-credit and savings services. Additionally, this segment of the rural population above the poverty line but not rich enough to be of interest to the formal financial institutions, also does not have good access to the formal financial intermediary services, including savings services. A group of micro-finance practitioners estimated the annualised credit usage of all poor families (rural and urban) at over Rs 45,000 crores, of which some 80 percent is met by informal sources. This figure has been extrapolated using the numbers of rural and urban poor households and their average annual credit usage (Rs 6000 and Rs 9000 pa respectively) assessed through various micro studies. Credit on reasonable terms to the

poor can bring about a significant reduction in poverty. It is with this hypothesis, micro credit assumes significance in the Indian context. With about 60 million households below or just above the austerely defined poverty line and with more than 80 percent unable to access credit at reasonable rates, it is obvious that there are certain issues and problems, which have prevented the reach of micro finance to the needy. With globalisation and liberalisation of the economy, opportunities for the unskilled and the illiterate are not increasing fast enough, as compared to the rest of the economy. This is leading to a lopsided growth in the economy thus increasing the gap between the haves and have-nots. It is in this context, the institutions involved in micro finance have a significant role to play to reduce this disparity and lead to more equitable growth.

OBJECTIVE

This paper attempt to analyze:

- (a) the future of microfinance industry
- (b) the issues in microfinance sector,
- (c) the trend of the microfinance industry,
- (d) relationship between microfinance industry and the economic growth of the country,
- (e) the changed scenario of microfinance institution under competitive environment &

RESEARCH METHEDODOLOGY:

- (a) The period of study is 2001-2009
- (b) To show the relationship between microfinance and economic growth, Karl Pearson's coefficient is calculated between the total borrowings and GDP.

THE MICROFINANCE INDUSTRY:

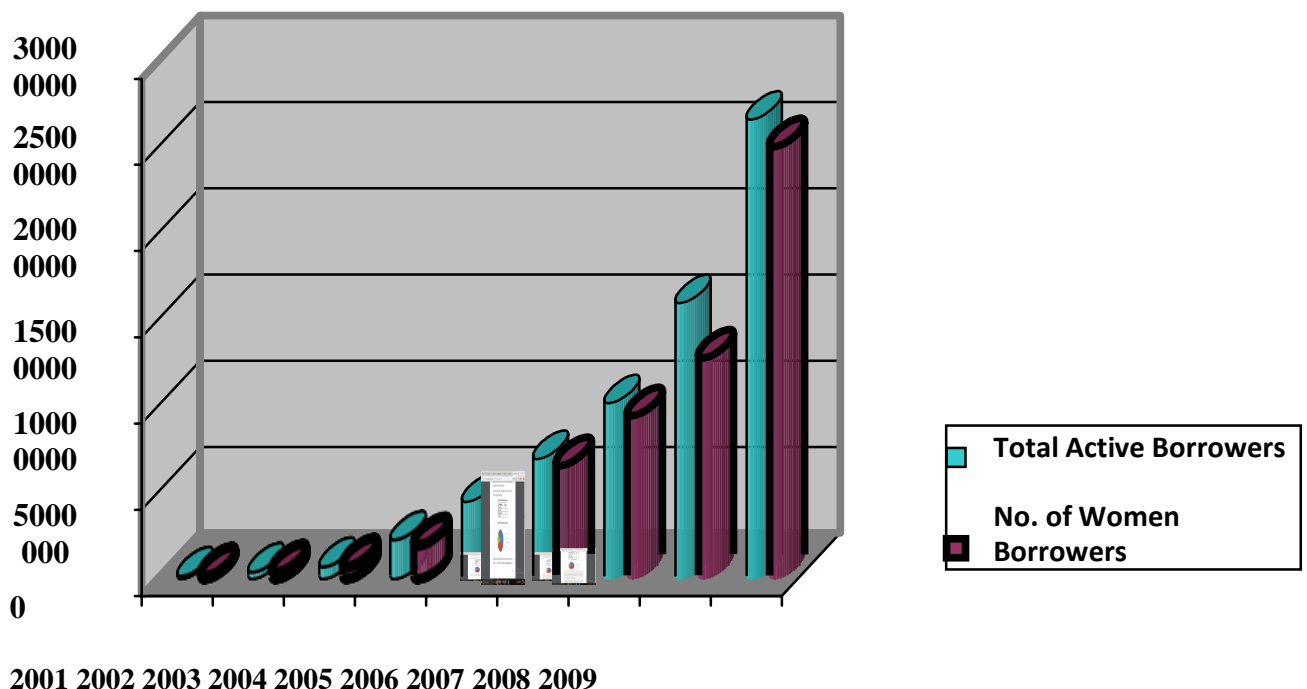
The overall performance of micro finance industry is shown in Table: 1:-

YEAR	NO. OF MFIs	GROSS LOAN PORTFOLIO (USD MILLION)	NO. OF ACTIVE BORROWER	TOTAL BORROWINGS (USD MILLION)	NO. OF TOTAL WOMEN BORROWINGS	GDP AT CURRENT PRICE (USD MILLION)
2001	10	152.20	178713		155878	473044
2002	11	296.71	418107	195.81	383517	495008
2003	36	718.74	708060	389.11	695378	573153
2004	71	2474.61	2244618	1188.18	1942007	669407
2005	77	4626.75	44,97,452	2558.20	42,51,404	784254
2006	82	7539.74	69,42,794	5329.68	65,46,446	875435
2007	67	13758.67	1,01,93,599	11599.57	94,55,928	1100990
2008	64	16200.22	1,60,09,824	17719.52	1,28,12,524	1206680
2009	88	46129.55	2,66,29,123	35809.41	2,50,77,469	1235980

Source: Data compiled from www.microfinance mix .com & <http://www.tradingeconomics.com>

The above table shows that microfinance industry has achieved a high growth in last 9 years. The no. of microfinance institutions is approximately 9 times greater than from 2001 in 2009. Although the Andhra Pradesh Crisis in March 2006 influenced a lot on the number of micro finance institution because the govt. has declared the closure of no. of MFIs. Yet the industry is showing about 100% growth from 2001 to 2009 in terms of no. of institutions, gross loan portfolios, no of borrowers. It has been also observed from the table that out of total borrowers, no. of women borrowers is more. This shows that mostly women prefer microfinance to fulfill their financial needs. The figure: 1 shows the no. of total borrowers and the womenborrowers.

Figure: 1



THE CHANGING SCENARIO OF MICROFINANCE INDUSTRY

The sector continues to see many not for profit MFIs transforming to become for profit Non Bank Financial Corporation's (NBFCs). This move has been driven by the need to raise additional debt (which is readily available from commercial banks seeking to meet their priority sector lending requirements) and, in some cases, the increased size and profile of the financial service sector and micro finance sector in particular has also stimulated the Reserve Bank of India (RBI) into action. In the midst of global liquidity crisis in 2008, the RBI increased the CAR - the ratio of capital to risk weighted assets - for NBFCs MFIs from 10% to 12% by March 2009. This requirement is expected to grow to 15%, and other measures may be looming as RBI and the Ministry of Finance display increasing discomfort with the direction the microfinance industry is taking. In a competitive environment, microfinance institutions must shift their thinking to respond to different challenges

Factor	Pre-Competitive Stage	Competitive Stage
Objective:	To reach more people and to become financially viable.	To retain or increase market share, while remaining profitable
Internal focus:	Developing the institution's internal capabilities and optimising efficiency.	Internal issues remain important, but external focus is added: Understanding the external environment and incorporating that understanding into business strategy. Issues like corporate branding, strategic marketing and governance gain importance.
Driving motivation:	Access to funding.	Attracting and retaining customers.
Growth:	High growth possible. Some MFIs have doubled their portfolio annually for several successive years with no competition and abundant donor/bank funds.	Low growth, stagnation, or even portfolio shrinkage possible, even for large well-managed MFIs, as the experience in Bolivia and Bangladesh shows.
Market assessment:	Little need to take the behaviour of other players into account.	Must study the behaviour of the clients, prospective clients, and competitors, or suffer grave consequences.
Client demand:	Taken as given. Institutions can grow and be profitable with unchanging, unpopular products.	Can evaporate quickly if competitors provide better service. Institutions that think strategically, satisfy customers' needs and desires, and innovate intelligently are likely to do well; others are likely to have hard times.

THE ISSUES OF MICROFINANCE INDUSTRY:

The rapid growth of the microfinance sector in the last few years has completely changed its complexion and nature. The growth has transformed microfinance: from being a sub-set of the development sector it has become a sub-set of the financial services industry. This growth has led to many issues and challenges before the sector and one of the major concerns voiced about the sector has been that of „mission drift“. Various issues have been brought out to highlight the problems in the microfinance sector and the main concerns are as follows: **Borrower**

Unfriendly Products and Procedures

With a majority of the customers being illiterate, and a majority of them needing consumption loans and a majority of them requiring high documentation and collateral security, the products are not reaching the rural poor.

Inflexibility and Delay

The rigid systems and procedures result in lot of time delay for the borrowers and de- motivate them to take further loans.

Lack of Transparency The microfinance industry has evolved from NGO roots. The push towards a „for-profit“ status to the industry was primarily at the behest of banks. Working with a leading accounting firm, MFIs came up with an innovative idea and for-profit trusts were constituted which took in money as „contributions“ from a large base of „clients“ or „members“. The corpus thus created with the trusts was invested as capital in the NBFCs. It was widely believed at that time that the clients putting money in the trusts were not aware that this was actually an equity investment. These trusts over a period of time disappeared or

reduced in size with the promoters or investors buying out the community without, at least in some cases, sharing with them the growth and returns. Hence, while the route of forming trusts was not illegal, and was perhaps dictated by the need to bring in the much needed equity, the sectoral grapevine was abuzz with tales of unethical, and in some cases illegal, behaviour of MFI promoters. The way the issues were handled by the concerned MFIs and by other sectoral stakeholders, in terms of transparency and ethical/legal issues, left a lot to be desired.

High Transaction Costs, both Legitimate and Illegal

Although the interest rate offered to the borrowers is regulated, the transaction costs in terms of the number of trips to be made, the documents to be furnished etc. plus the illegal charges to be paid, result in increasing the cost of borrowing. Thus, making it less attractive to the borrowers.

Private Equity Push

The transformation of microfinance institutions to an NBFC format, largely pushed by banks and supported by the Small Industries Development Bank of India through its „Transformation Loan“ helped a for-profit orientation to emerge. Large institutions were able to bring down operating costs, and the operating cost ratio reduced to 8.5% in 2008 from 17.6% in 2006. Total cost ratio also came down drastically to 17.6% from 23.4% in the same period. As against this, interest rates for ultimate clients continued to hover at around 30%, and the industry margins were quite attractive. The high margins and the seemingly limitless market, considering the poverty levels in India brought private equity (PE) players to the sector. The industry stakeholders and banks welcomed this move as it was seen as a coming of age of the sector. A few voices expressed their concern that the entry of PE players would lead to rapid growth and commercialisation at a scale not seen before, but these were quickly brushed aside in the initial euphoria. The entry of PE players changed the game quite comprehensively. The money brought in was short term money and needed high returns of the order of 24-30%.⁶ The only way such returns could be realised was through rapid growth. The more money that was leveraged on account of equity, and the faster it was turned around, the more would be the profit. Growth, which till then was being supported by all stakeholders, became an end in itself and was driven by profit - the client and her needs scarcely factored.

Meaningless Growth The growth in coverage of microfinance is limited to pockets, and MFIs across the country have developed a tendency to congregate in select areas. It is very common to find urban and peri-urban settlements to have between 10-20 microfinance institutions operating within a small geography. This has led to the problem of multiple lending, which has raised the issue of client over indebtedness, default and strong arm recovery tactics. On occasions, charges have also been made of client suicide because of repayment pressures, but this appears to be more a figment of the imagination of the vernacular press than corroborated by any evidence on the ground. Hence, multiple lending is a well known phenomenon and the sector has continued with an ostrich-like attitude to the problem. Despite evidence from across the globe, no efforts have been made to address the short-comings of the group-based lending product and collection methodology, which remains almost exactly as it was when imported in the late 1980s.

FINDINGS:

(1) The below table shows the Karl Pearson's coefficient of correlation between GDP at current price and Gross Loan Portfolio. It is a two tailed test at the significance level of 0.01. The calculated value of coefficient is 0.812 which is significantly higher than the standard value.

Table: 2:-Correlations Between GDP & gross Loan Portfolio

	GDP AT CURRENT PRICE (USD MILLION)	GROSS LOAN PORTFOLIO (USD MILLION)
GDP AT CURRENT PRICE (USD MILLION)	1	.812**
Pearson Correlation		.008
Sig. (2-tailed)		
N	9	9
GROSS LOAN PORTFOLIO (USD MILLION)	.812**	1
Pearson Correlation		.008
Sig. (2-tailed)		
N	9	9

** Correlation is significant at the 0.01 level (2-tailed)

(2) The below table shows the Karl Pearson's coefficient of correlation between GDP at current price and Total Borrowings. It is a two tailed test at the significance level of 0.01. The calculated value of coefficient is 0.858 which is significantly higher than than the standard value

Table: 3:-Correlations Between GDP & Total Borrowings

	GDP AT CURRENT PRICE (USD MILLION)	TOTAL BORROWINGS (USD MILLION)
GDP AT CURRENT PRICE (USD MILLION)	1	.858**
Pearson Correlation		.006
Sig. (2-tailed)		
N	9	8
TOTAL BORROWINGS (USD MILLION)	.858**	1
Pearson Correlation		.006
Sig. (2-tailed)		
N	8	8

** Correlation is significant at the 0.01 level (2-tailed).

CONCLUSION:

After the pioneering efforts of the last ten years, the microfinance scene in India has reached atakeoffpoint.Asasum,theroleofmicrofinanceinIndiacannotbeunderstated.Although,in the competitive scenario the industry is converting into for –profit NBFCs from not- for- profit NGOs and has forgotten its primary role to address the needs of poor in country, but, the role of microfinance whether in „for-profit“ or „not-for-profit“ formats will remain. Because the government and its programs only cannot fulfil the needs of poor .Adopting a client-responsive approach, coupled with ethics-based transparency, could take this sector to greater heights and fulfill a very strong need of poor people in India

REFERNCES:

- Armendariz, B. and Morduch, J. 2005. *The Economics of Microfinance*. Cambridge, MA: MITPress.
- Basu, P. 2008. “A Financial System for India“s Poor”. In *Microfinance in India* ed. K.G. Karmakar, 19-32. New Delhi: SagePublications.
- Della-Giusta, M. and Phillips, C. 2006. “Women Entrepreneurs in the Gambia: Challenges and Opportunities.” *Journal of International Development*, 18(8):1051-1064.
- Ghate, P. 2007. *Indian Microfinance: The Challenges of Rapid Growth*. New Delhi: Sage Publications.
- Karmakar, K.G. 2008. *Microfinance in India*. New Delhi: SagePublications.
- Mahajan, V., Dikshit, M. and Rao, K. 2008. “Overview.” In *State of India’s Livelihoods: The 4p Report*, ed. D. Sankar and S. Vipin, 15-38. New Delhi: Access Development Services.
- M-Cril and Mix. 2007. *India Microfinance Review 2007*. Gurgaon/Washington Dc: Micro-Credit Ratings International Limited/Microfinance InformationExchange.
- www.microfinancemix.com

AN ANALYSIS OF FINANCIAL PERFORMANCE OF SELECTED ENTERPRISES IN INDIAN POWER SECTOR

Mr. Monojit Saha

Assistant Professor of Commerce, Kalna College,
Kalna, Burdwan East, WB, India, 713409

Abstract

Electricity has been proved as a life blood of the society and the economy of the modern world. The companies operating to generate and distribute electric power are of significant importance as their sustainability affects other industries too. In India the importance of electricity industry can never be overemphasized. Since independence the Government of India, along with State Governments and regulatory bodies, has been endeavoring to generate and supply uninterrupted quality electricity at reasonable price. Recently the industry is going through a special situation as the government's decision to supply electricity even to the interior villages and marginal families at subsidized price; which has increased the capital expenditure, the risk of non-payment of electricity bill in due time and the risk electricity theft; might affect the financial performance of the industry. In this study an attempt was made to analyse the financial performance of some selected enterprises operating in Indian power sector.

Keywords: Indian power sector; Financial performance; Liquidity; Profitability; Efficiency in Assets Management.

1. Introduction

Electricity has been proved as a life blood of the society and the economy of the modern world. The companies operating to generate and distribute electric power are of significant importance as their sustainability affects other industries too. In India the importance of electricity industry can never be overemphasized. Since independence the Government of India, along with State Governments and regulatory bodies, has been endeavoring to generate and supply uninterrupted quality electricity at reasonable price. Recently the industry is going through a special situation as the government's decision to supply electricity even to the interior villages and marginal families at subsidized price; which has increased the capital expenditure, the risk of non-payment of electricity bill in due time and the risk electricity theft; might affect the financial performance of the industry. The study attempted to analyse the financial performance of some selected enterprises operating in Indian power sector.

2. Review of related literature

Before stepping into the empirical study, a review of the existing literature was made. The following few paragraphs explain in brief some significant studies carried out during the last few years on this issue and the final paragraph of this part deals with the identification of the research gaps.

Gupta and Gupta (2014) analysed the financial performance of Power Grid Corporation of India Ltd. The researchers examined current asset turnover ratio, working capital turnover ratio, fixed assets turnover ratio and total assets turnover ratio. The study found that the liquidity position of the selected company was at alarming level.

Maji and Sur (2014) in their study compared the value generating capability of NTPC Ltd. in the pre-liberalisation period with that in the post-liberalisation period. They also examined the relationship between the value generating capability and its determinants. Further they assessed the joint effect of the determinants on the value generating capability. A

considerable improvement in value generating capability of NTPC Ltd. was found during the post-liberalisation period. Only fixed assets management and inventory management had a significant impact on the value generating ability of the firm.

Parikh and Dave (2014) in their study attempted to analysed the liquidity, profitability and solvency positions of Indian power sector. Data for the period 2005-06 to 2011-12 were collected for nine companies in Indian power sector. These are Torrent Power, NTPC Ltd., Adani Power, Power Grid Corporation, Tata Power, NHPC Ltd., JSW Energy, Gujrat Industries Power Companies and CESC Ltd. Current ratio, fixed assets turnover ratio, inventory turnover ratio, debtors turnover ratio, interest coverage ratio, return on net worth and long term debt-equity ratio were evaluated in the study. Mean values of all these ratios with Std. deviation were calculated for each company. One-way ANOVA was also employed in the study, which concluded that only in the case of inventory turnover ratio there was no significant mean difference among the companies under study.

Vyas (2015) in his study selected five companies of Indian power sector, namely, NTPC Ltd., NHPC Ltd., Tata Power, Torrent Power and Adani Power, to analyse financial performance. Data for the period of 2009-10 to 2012-13 were collected from annual reports. Net profit ratio, return on net worth, return on long-term fund, gross profit ratio, return on capital employed, current ratio, quick ratio, long-term debt-equity ratio, debtors turnover ratio, inventory turnover ratio, earning per share and equity dividend were used for the analysis of the study. ANOVA was applied in the study which concluded that financial performance of NTPC Ltd. was better compared to other companies selected for the study.

Narayanan and Hamsalaxmi (2015) studied the financial leverage and operating leverage of power sector companies in India. Tata Power and Reliance Power were selected among the private companies along with NTPC Ltd., Power Grid Corporation of India Ltd. and NHPC Ltd among the CPSEs in Indian power sector. Data for the period of 2009-10 to 2013-14 were collected from annual reports of the selected companies. The researchers prepared Pearson's correlation matrix individually for each company to find out the relationship among earning before interest and tax, interest, profit before tax, operating cost and sales. One-way ANOVA was also applied which found that the financial leverage ratio of the selected companies were not significantly different from each other.

Singh and Sur (2016) analysed the financial performance of NTPC Ltd. on the basis of technical efficiency score (TES) to compare with other Maharatna CPSEs. TES as non-parametric approach based Data Envelopment Analysis was employed in this study. Data for the period 2001-02 to 2013-14 were collected from secondary sources. Return on capital employed was used as a proxy of profitability and fixed assets turnover ratio, inventory turnover ratio, debtors turnover ratio and cash turnover ratio were selected to assess the efficiency of the firms. A wide variation across the selected companies in the level of TES was found in the study. The composite score based on the average profitability and its consistency aspects revealed that the performance of NTPC Ltd. could occupy the second last position among the selected Maharatna CPSEs.

Narang (2018), in a study, attempted to compare the financial performance of NTPC Ltd. during the pre-disinvestment with that during post-disinvestment period. Data for the period of 1997-98 to 2010-11 were used. The period from 1997-98 to 2002-03 was considered as pre-disinvestment period and the period from 2003-04 to 2010-11 was taken as post-disinvestment period. Operating profit margin, net profit margin, return on total assets, return on capital employed and return on net worth were used to represent profitability and total assets turnover ratio, fixed assets turnover ratio, current assets turnover ratio and inventory turnover

ratio were selected to represent management efficiency. Operating cost ratio, non-operating cost ratio, net sales per employee and net profit per employee were also analysed in this study. The researcher found that during the post disinvestment period the company performed better in terms of profitability.

Saha (2018) made a comparative analysis of financial performance of selected units in Indian power sector. Data for the study of NTPC Ltd., NHPC Ltd., Tata Power and Reliance Infra for the period 2001-02 to 2015-16 were collected from Capitaline database of Capital Market Publishers (I) Ltd. Current ratio and acid test ratio were used to measure the liquidity; return on capital employed and return on owners' equity were used to assess the profitability, and working capital ratio and fixed assets turnover ratio were used to measure the efficiency in assets management of the selected companies. Statistical techniques, such as, one-way ANOVA and statistical tests like F test, test of homogeneity of variances, Welch's and Brown-Forsythe's robust test of equality of means etc. were applied in appropriate places of the study. The researcher found that all the ratios selected for the study were significantly different for the companies under study and in most of the cases NTPC Ltd. performed best during the study period.

Mushahid (2018) analysed the impact of liquidity, solvency and profitability ratios on sales of NTPC td. Data for the period of 2011-12 o 2015-16, collected from annual reports of the company, were used in the present study. Current ratio, quick ratio, debt-equity ratio, proprietary ratio, interest coverage ratio, gross profit ratio and net profit ratio were considered for analysis in the study. The researcher applied pearson's simple correlation analysis and simple regression analysysis to find individual impact of the said ratios on sales of the company. No significant relationship was found.

Saha (2018) attempted to find the effect of Global Recession, 2008 and Companies Act, 2013 on the financial performance of Indian power sector. 14 companies were five CPSEs in were selected for the study. The 15 years' data for the period of 2003-04 to 2017-18 were collected form Capitaline Corporate Database of Capital Market Publishers (I) Ltd. The total data were devided into three periods to compare the performance. A number of liquidity, profitability and efficiency ratios were considered in the study. Wilcoxon Signed Ranks test was applied in the study to compare the mean values. The study found that the global recession did not affect the profitability ratios of the selected companies but ROA, ROCE and NPM decreased significantly after the Companies Act, 2013 was implemented. TATR of the selected companies decreased significantly and the overall liquidity of the selected companies increased significantly after the 2008 global recession.

From the above discussion it is revealed that a number of studies were conducted in the recent past on the topic to anlyse the financial performance of Indian power sector. However, the outcomes derived from these studies were contradictory in nature, which were unable to provide a concrete conclusion. Further no such studies made an intra company comparision of financial performances of the selected companies. To bridge this gap the present study was made in which all the major dimensions of financial performance of Indian power sector were taken into consideration and the data were catagorised to look for the effect of the global recession and the New Companies Act in the study.

3. Objectives of the study:

The study analysed the financial performance of selected companies in Indian power sector for the period 2004-05 to 2017-18. More specifically the objectives are:

1. To measure the financial performance of the selected companies considering the major dimensions of financial performance, such as profitability, efficiency in assets management and liquidity.

2. To compare the financial performance of the selected companies among the first half of the study period, i.e. from 2004-05 to 2010-11 and the second half of the study period, i.e. from 2011-12 to 2017-18.

4. Data Collection and Research Methodology:

Companies operating in Indian power sector and also listed in BSE were selected for the study at very beginning. It was found that full data of the aforesaid companies were not available due to many reasons, which forced to select few companies for convenience of the study. Finally 14 companies were selected for the study. Name of selected companies for the study is shown in Appendix-1.

Financial data for the period 2004-05 to 2016-17 (Total 14 years) were collected from Capitaline Corporate Database of Capital Market India Pvt. Ltd. Three major dimensions of financial performance, such as profitability, efficiency in assets management, and liquidity were taken into consideration. Return on capital employed (ROCE) and operating profit margin (OPM) were used to assess the profitability; fixed assets turnover ratio (FATR) and debtors turnover ratio (DTR) were used to measure the efficiency in assets management; whereas liquidity was analyzed using current ratio (CR) and acid test ratio (ATR).

It was decided to compare the means of the selected ratios divided in two halves. A test of normality was run to know the applicability of paired "t" test in the study. Appendix-2 shows the result of the test of normality. It was found that data related to most of the ratios categorized in respect of time period were not normal. It led to use of non-parametric test to substitute the paired "t" test. Wilcoxon Signed Ranks test was applied in the study to compare the mean values.

5. Observations:

Profitability of the selected companies was measured in terms of ROCE, and OPM. Table-1 shows that both the measures of profitability for both the periods were satisfactory. During the first half the average values of the aforesaid ratios were 30.19 and 58.72 respectively; during the second half the values were 23.65, and 60.04 respectively.

In the above paragraph it is clear that while the average operating profit margin of the selected companies increased over the period under study the return on capital employed decreased.

Efficiency in assets management was measured by FATR and DTR. In Table-1 it is found that the mean values of these two ratios during the first half of the study were 0.56 and 6.27 respectively; in the second half the mean values were 0.41 and 5.50 respectively.

The above paragraph clarifies that both the ratios representing efficiency in assets management decreased over the study period.

Liquidity of the selected companies was measured in terms of CR and ATR. Table-1 shows that the values of these ratios in the first half were 2.95 and 2.45 respectively; in the second half these were 2.75 and 2.32 respectively.

The above paragraph clarifies that both the ratios of liquidity decreased over the study period.

In Table-2, the results of Wilcoxon Signed-Ranks test are shown. In respect of profitability the test found that the mean values of the ratios for the second period were

significantly different from the first period. It means that during the second half of the study period the profitability of the selected companies decreased significantly. In respect of efficiency in assets management it was found that FATR changed significantly in the second half over the first half, which means that efficiency in management of fixed assets decreased during the second half while the efficiency in debtors management remained the same. Both the ratios representing liquidity did not change significantly over the study period.

6. Conclusion:

The study found that

i) profitability performance of the selected companies was highly satisfactory during the period under the study.

ii) the fixed assets and debtors of the selected companies were managed efficiently during the study period.

iii) the average liquidity position of the selected companies was more than enough, which resulted into inefficient use of working capital.

iv) the profitability of the selected companies decrease significantly during the second half of the study period.

v) FATR of the selected companies decreased significantly during the second half of the study period though the change in DTR during the second half was not so significant.

vi) the overall liquidity position of the selected companies also remained unchanged during the second half of the study period.

7. Tables:

Table-1: Descriptive Analysis

First Half		ROCE	OPM	FATR	DTR	CR	ATR
	Mean	30.1892	58.7229	0.5615	6.272	2.9518	2.4562
Std. Deviation	28.2782	29.6965	0.45621	4.83508	3.36566	2.60416	
Second Half		ROCE	OPM	FATR	DTR	CR	ATR
	Mean	23.6476	60.0604	0.4075	5.5027	2.7479	2.3294
Std. Deviation	19.6846	27.2098	0.26626	2.94006	2.70831	2.28954	

Table-2: Wilcoxon Signed Ranks test

Second Period, minus First Period		ROCE	OPM	FATR	DTR	CR	ATR
	Z	-2.040 ^b	-2.187 ^c	-3.282 ^b	-1.258 ^b	-.992 ^b	-.827 ^b
Asymp. Sig. (2-tailed)	0.041	0.029	0.001	0.209	0.321	0.408	

Appendix-1: List of the companies selected for the study

Sl.No.	Name of Companies
1	NTPC LTD.
2	NLC INDIA LTD.
3	SJVN LTD.
4	NHPC LTD.
5	POWER GRID CORPORATION OF INDIA LTD.
6	TATA POWER CO. LTD.
7	SURYACHAKRA POWER CORPORATINO LTD.
8	RELIANCE INFRASTRUCTURE LTD.
9	NAVA BHARAT VENTURES LTD.
10	LANCO INFRATECH LTD.
11	JSW ENERGY LTD.
12	JAIKASH POWER VENTURES LTD.
13	INDOWIND ENERGY LTD
14	GUJRAT IDUSTRIES POWER COMPANY LTD

Appendix-2: Tests of Normality (Kolmogorov-Smirnova Test)

First Half				Second Half			
	Statistic	Df	Sig.		Statistic	df	Sig.
ROCE1	0.174	52	0	ROCE2	0.227	52	0
OPM1	0.129	52	0.03	OPM2	0.179	52	0
FATR1	0.2	52	0	FATR2	0.149	52	0.006
DTR1	0.181	52	0	DTR2	0.116	52	0.077
CR1	0.301	52	0	CR2	0.225	52	0
ATR1	.222	98	.000	ATR2	.207	98	.000

8. Bibliography:

- Angappallai, A., & Kandasamy, P. (2017). AN ANALYSIS OF FINANCIAL PERFORMANCE OF POWER SECTOR IN TAMILNADU. *International Journal of Management Research & Review*, Volume 7/Issue 7/Article No-4 , 781-792.
- Chaudhary, K., Gupta, S., Sethi, P. K., & Gupta, M. (2016). A study on the Profitability Analysis of Power Grid Corporation of India Ltd. *International Conference on Industrial Engineering and Operations Management, Kuala Lumpur, Malaysia, March 8-10, 2016* (pp. 1818-1825). Kuala Lumpur: IEOM Society International.
- Dilli, S., Gurumurthy, N., & Reddy, K. J. (2016). Working Capital Management in Transmission Corporation Ltd. of Andhra Pradesh. *BIMS International Journal of Social Science Research*, , 44-49.
- Gupta, S., & Gupta, M. (2014). A Case Study of Efficiency Analysis on Power Grid Corporation of India Ltd. *International Journal of Science and Research (IJSR)*, Volume 3 Issue 12, December 2014 , 1950-1953.
- Khan, A. (2017). Financial Performance Evaluation of National Thermal Power Corporation Limited (NTPC). *Arabian Journal of Business and Management Review*, Volume 7, Issue 2 .

- Leepsa, N. (2102). MERGER MOTIVES, TRENDS AND POST MERGER PERFORMANCE: EVIDENCE FROM ELECTRICITY COMPANIES IN INDIA. *Journal of Business Economics and Finance* , 59-82.
- Maji, S., & Sur, D. (2014). VALUE GENERATING CAPABILITY OF NTPC LTD. IN THE PRE- AND POST- LIBERALIZATION PERIODS: A COMPARATIVE ANALYSIS. *Time's Journey/ISSN : 2278-6546 I Vol. 3, No. 1* , 1-9.
- Mishra, P., & shukla, K. (2017). "An Empirical Analysis of Financial Performance of Leading Power Sector Organisation - NTPC. *International Journal of Research in Economics and Social Sciences(IJRESS)*, Vol. 7, Issue 11 , 706-719.
- Mushahid, S. (2018). EVALUATION OF FINANCIAL PERFORMANCE OF NATIONAL THERMAL POWER CORPORATION LIMITED. *International Journal of Accounting Research* , 43-53.
- Nandal, S. (2012). A COMPARATIVE ANALYSIS OF FINANCIAL HEALTH OF SELECTED UNITS IN POWER SECTOR. *INTERNATIONAL JOURNAL OF MANAGEMENT RESEARCH* , 1405-1413.
- Narang, M. (2018). Pre and post disinvestment analysis: A case of national thermal power corporation (NTPC). *International Journal of Academic Research and Development, Volume 3; Issue 1* , 959-964.
- Narayanan, R., & Hamsalakshmi, R. (2015). Leverage analysis of selected Indian power sector companies. *International Journal of Multidisciplinary Research and Development 2015; 2(3)* , 829-834.
- Pandey, M., & M.K. Choubey. (2011). Appraisal of NTPC Financial Strength. *Tecnia Journal of Management Studies, Vol.5, No.2, Dated: Oct, 2010-Mar, 2011* , 65-69.
- Parikh, P., & Dave, A. (2014). AN EMPIRICAL ANALYSIS OF THE FINANCIAL PERFORMANCE OF THE SELECTED POWER SECTOR COMPANIES OF INDIA . *International Journal of Management, IT and Engineering* , 34-46.
- Patidar, V., & Movalia, N. (2016). An Empirical Study on Financial Health of NTPC and NHPC. *Pacific Business Review International Volume 8, Issue 9, March 2016* , 16-22.
- Rashid, N., & Manivanan, B. (2017). A study on liquidity and profitability position of national thermal power corporation limited New Delhi. *International Journal of Commerce and Management Research Volume 3; Issue 2* , 112-116.
- Rathod, D. T. (2011). Management of Power Generation Projects in Karnataka: A case study of KPCL . *Eighth AIMS International Conference on Management. BANGALORE*.
- Saha, M. (2018). Financial Performance of Selected Units in Indian Power Sector: A Comparative Analysis. *Asian Journal of Research in Bankng and Finance, Vol. 8, No. 1* , 36-46.
- Sharma, A. (2013). An Analysis of Financial Performance in Power Industry in India. *Asia Pacific Journal of Management & Entrepreneurship Research (APJMER), Volume 2, Issue 2, April 2013* , 143-148.
- Singh, K., & Sur, D. (2016). Profitability of Maharatna enterprises in India during the post-liberalisation era: a cross-sectional analysis. *Int. J. Management Concepts and Philosophy, Vol. 9, No. 3* , 239-254.
- Saha, M. (2018). An Analysis of the effects of Global Recession, 2008 and the Companies Act, 2013 on the financial performance of Indian power sector. *International Journal of Management, IT and Engineering, Vol.8, Issue 11,p* 173-188
- Vyas, V. (2015). Financial performance analysis of selected companies of power sector in India. *International Journal of Applied Research* , 212-219.

HETEROGENEOUS NETWORK - COMPOSITION AND LTE USING FEMTO CELLS

Akrati Agrawal
Research Scholar, SVU, Gajrula
Dr. Deepti Gupta
Research Supervisor

Introduction

As a consequence of the explosion of smart phones and tablets, data traffic is growing significantly, both on the radio access links and the backhaul infrastructure of mobile operators' networks. And although LTE Advanced & LTE offer superior data traffic throughput than that of 3G, given to their wider owed bandwidths, the combined capacities of even these networks is not enough to meet projected future capacity demands.

The unadventurous solution to increasing the capacity of LTE mobile networks includes splitting macro-cells and/or adding more sites. Both of these solutions require high CAPEX and OPEX, so mobile operators and distributors are looking for new and cost effective ways of increasing their network capacity. One solution is to organize small-cell base stations (BSs) within their existing macro-cellular networks, an approach referred to as Heterogeneous Networks.

It is well known that a HetNet not only increases the network capacity, but also provides better coverage and enhances the user's experience. These benefits are achieved by offloading data traffic enthusiastically from MCBSs to SCBSs using an algorithm based on several parameters such as the characteristics of the traffic, the required QoS and network.

Composition of Heterogeneous Network

A network which consists of only one type of cell(i.e. macro or small cell) is known as a homogenous network whereas network composed of multiple types of cells(Macro, Micro, Pico and Femto) from same or different technology is known as a heterogeneous network.

Now in this figure shows the composition of HetNet components: At high level this can be divided in two major Layers.

- (MCBS) Marco Cell Base Station Layer
- (SCBS) Small Cell Base Station Layer



Heterogeneous Network

Macro Cell Base Station layer provide the cover coverage to the morphology and mainly used to cover maximum area by installing the antennas at some height either on Tower, mast or may be on the wall of high rise building.

Here the UE are quite away from the base station and the minimum coupling loss 70 dB between the UE and Base station so based on this the best signal at can see is 55-65 dBm of RSRP. This layer of base station covers most of the outdoor area and limited indoor area. In MCBS layer the Macro cell have multi sector deployments.

Small Cell Base Station layer provide the underlay coverage and covers the outdoor and indoor area. This layer composed of Micro, Pico and Femto, Repeater types of cell. While comparing with the Macro Cell Base Station layer here UE is much closer to the base station and minimum coupling loss can be seen about 50 dB, but due to reduction in transmit power at the cell the best signal seen at the UE remains same.

Base Station Classification Based on the Rated Power

As per 3GPP reference 36.104 release 12, there are four classes for the base stations based on the rated power is listed below

s.no.	Base station class	Rated output transmission power
1	Wide area base station	No upper limited deifined by 3GPP, max power is controlled by local regulatory.
2	Medium area base station	≤ 38 dBm port by single antenna
3	Local area base station	≤ 24 dBm port by single antenna
4	Home base station	≤ 20 dBm port by single antenna

The rated power defined here is for single antenna configuration and it will be divided across antenna ports when more than one antenna is used. For example- a Home Base station the max rated power is 20 dBm for one antenna, if we change the antenna design to 2 antenna configurations then per antenna port power will reduced to 17dBm.

Here it can be clearly seen whenever doubling the antenna port the power is reduced by 3dB (Half of the power), so for 4 antenna configuration it will be further reduced by 3dB providing 14 dBm power per antenna port and so on. Form here it can be concluded that the specification provides the max rated power and a designer need to take this in consideration while designing the power amplifier and other active elements of base station Radio.

Long Term Evolution (LTE)-A Heterogeneous Networks using Femtocells

LTE is the technology is used in every cellular Networks working on 4G.

LTE technology provides data rate in more speed and support the cellular telephones services. Four major components have LTE networks.

- The main and 1st component is the Core Network. It works as brain in the LTE network. To provide access to multimedia and internet services gateways and servers are used in Core Network.
- LTE Network 2nd component is Radio Access Network, which are also known as mobile network towers. The tower has transceiver tools are known as antennas and node bees. Device are connected with them by using coverage which is wireless.
- LTE 3rd component is known as Backhaul network, it is buildup of fiber and microwaves connection. For connecting two different component of LTE which are radio access network and core network Backhaul networks is used. So, that user can make telephone calls and also can use the different services given by the Networks.
- LTE 4th component is user equipment which contain routers used for mobile, mobile phones and equipment which are pre-owned by the individual. LTE has many features and capabilities but there are four main feature exclusive spectrum, high speed, priority, and preemption self-organizing networks.

LTE-A has some new features as compared to the LTE system. There is some goal of LTE-A which are to increased data throughput. That means we required more throughout values so that it increased data throughput or more speed internet access. Next goal was to improved flexibility of Spectrum allocation and reducing latency. Then there was requirement to increased reliability of data transmission, especially at cell edges. Increase in communication efficiency is also the main goal of the LTE-A.

LTE-A have some feature which are CA (Carrier Aggregation), Enhanced MIMO, LTE Comp, Relay Node and Heterogeneous networks. The major challenge faced by the network operators today is to provide uniform coverage especially in metro cities which are filled with high rise buildings. One way to expands exist macro network is adding more enodeB. However, installing Macro sites can be very expansive. To overcome this challenge Heterogeneous network and Relay Nodes are used in LTE-A.

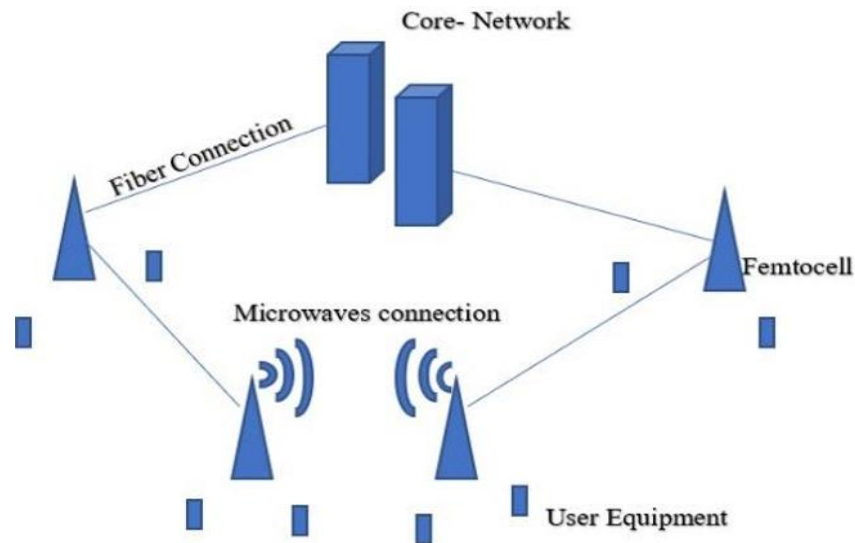


Diagram of LTE Network

There are several techniques to improve the coverage. The simplest method is by the introduction of small cell, which contain many sub base station known as enodeB. These enodeB are also known as base station with low power. The main purpose of enodeB are to provide coverage to area which are not able to cover by the Macro Networks. These enodeB can be used in both indoors and outdoors. These enodeB also increase the service quality and networks performance. Bitrates per unit area can be increased by using small cells with Macro cells. The heterogeneous network may consist of macro, micro, Pico, and femtocells, based on enodeB power.

Femtocells are used anywhere home, school which is connected by any internet connection of already existing broadband. Femtocells solves three different problems, first one is to increase around coverage which can be particularly poor in indoor. The second aspect concerns the capacity of the network where many mobile phone networks are becoming congested through a high level of data traffic.

Femto Cell Base Station

A Femto cell base station is known a “Home Base Station” as per 3GPP specifications. The max rated transmit power Femto cell is limited to 20 dBm per antenna port and it can be designed to support up to 8x8 antenna configuration

Properties of FEMTO Cell Base Station:

- The Femto Cell base stations are mainly used at home or in small offices. These transmit power is very less so they are intended to provide the coverage in indoor location closer to user.
- Femto cell base station is very small in size and portable. The location of Femto cell base station is not controlled by the MNOs, the personal can carry and use where one wants e.g. during weekend a user want to use it at home and during weekdays he want to use at office.

- These are plug and play devices and having slightly different deployment architecture compare to other types of base stations. It supports two types of architecture with Femto Gateways and without Femto gateways. The connection between Femto cell and Femto gateway is similar to home broadband connection e.g. ADSL line to communicate to EPC elements.
- It can operate on the same frequency channels where Macro, Micro, Pico base station are transmitting.
- As Femto cell location is not fixed so during the network design operator reserves a pool of the PCIs for Femto cell and Femto cell select PCI from the pool after network scan
- A Femto cell can support three types of access mode, open cell, Hybrid cell and CSG cell configuration. With Open cell configuration a user can connect to it, while it is configured with the CSG configuration only CSG user can connect to it(kind of private cell) whereas the Hybrid cell configuration provide all access to both CSG users as well as the normal users.
- Femto cell are mostly deployed with the Omni directional antennas and multiple Omni antenna with sufficient distance (2 lambda distance required to get the best MIMO performance) can be installed to get the MIMO capabilities.

Conclusion

In this article we have discussed about of LTE base station which are part of HetNet. We have provided the short descriptions about the properties and deployment architecture of Femto cell base station. A HetNet network is consist of Macros, Micros, small cells (Pico and Femto), repeaters and replays.

They provided the information about the Power limits of base station and mapped them with 3GPP specifications. They also provided the information about composition of a base station providing functionality of base band and radio head. The deployment scenarios for Femto cell base station also discussed.

References

1. Yamamoto, T., & Konishi, S. (2013). "Impact of small cell deployments on mobility performance in LTE-Advanced systems". In Personal, Indoor and Mobile Radio communications Workshops, IEEE 24th International Symposium, pp. 189-193, 2013.
2. Bouras, C., Kokkinos, V., Kontodimas, K., & Papazois, A.. A simulation framework for LTE-A systems with femtocell overlays. In Proceedings of the 7th ACM workshop on Performance monitoring and measurement of heterogeneous wireless and wired networks, pp. 85-90, (2012).
3. Trestian, R., Vien, Q. T., Shah, P., & Mapp, G. (2015, October). Exploring energy consumption issues for multimedia streaming in LTE HetNet small cells. In Local Computer Networks (LCN), 2015 IEEE 40th Conference on (pp. 498-501). IEEE.
4. Kosta, C., Hunt, B., Quddus, A. U., & Tafazolli, R.. On interference avoidance through inter-cell interference coordination (ICIC) based on OFDMA mobile systems. IEEE Communications Surveys & Tutorials, 15(3), 973-995, (2013).
5. Stanze, O., & Weber, A. (2013). Heterogeneous networks with LTE- Advanced technologies. Bell Labs Technical Journal, 18(1), 41-58.

6. <http://www.3gpp.org/technologies/keywords-acronyms/98-lte>.
7. <http://www.3gpp.org/technologies/keywords-acronyms/97-lteadvanced>.
8. Zhou, Hao, Yusheng Ji, Xiaoyan Wang, and Shigeki Yamada. "eICIC configuration algorithm with service scalability in heterogeneous cellular networks." *IEEE/ACM Transactions on Networking (TON)* 25, no. 1 (2017): 520-535.
9. Alexiou, A., Bouras, C., Kokkinos, V., Kontodimas, K., & Papazois, A. (2011, October). Interference behavior of integrated femto and macrocell environments. In *Wireless Days (WD), 2011 IFIP* (pp. 1-5). IEEE.
10. Claussen, Holger. "Performance of macro-and co-channel femtocells in a hierarchical cell structure." In *Personal, Indoor and Mobile Radio Communications, 2007. PIMRC 2007. IEEE 18th International Symposium on*, pp. 1-5. IEEE, 2007.
11. [https://en.wikipedia.org/wiki/LTE_\(telecommunication\)](https://en.wikipedia.org/wiki/LTE_(telecommunication))
12. <http://www.3glteinfo.com/lte-advanced-heterogeneous-networks/>
13. http://www.2cm.com.tw/technologyshow_content.asp?sn=091223001 8
14. De La Roche, G., Valcarce, A., López-Pérez, D., & Zhang, J. "Access control mechanisms for femtocells". *IEEE Communications Magazine*, 2010.
15. Slamnik, N., Okic, A., & Musovic, J. "Conceptual radio resource management approach in LTE heterogeneous networks using small cells number variation". In *Telecommunications (BIHTEL), XI International Symposium*, pp. 1-5, IEEE, 2016.
16. Seidel, E., & Saad, E. (2010). *LTE Home Node Bs and its enhancements in Release 9*. Nomor Research, 1-5.

Challenges of Green Communication in 5th Generation Cellular Networks using Heterogeneous Network

Akrati Agrawal
Research Scholar, SVU Gajraula

Dr. Deepti Gupta
Research Supervisor

Abstract:

In this paper, In 2020, mobile access networks will experience significant challenges as compared to the situation of today. Traffic volumes are expected to increase 1000 times, and the number of connected devices will be 10-100 times higher than today's heterogeneous network as to the fifth generation(5G) communications. The software defined heterogeneous network architecture can therefore support much more efficient resource utilization and meet the quality of service requirement. This is causing an adverse effect on the environment and human health. Addressing these aspects, this paper presents a survey on techniques for making the next generation cellular networks GREEN. A number of technologies form a part of the 5G networks, in order to support the drastic user demands, and are receiving substantial attention from the perspective of green communication. These include device-to-device communication, spectrum sharing, ultra dense networks, massive MIMO, and the Internet of Things. Also, a prime concern in the current scenario is the battery life of the mobile terminals. For enhancing the battery life of the user terminals, a proposal is given in this paper, with spectrum sharing as its basis, to overcome the energy crunch. Major research challenges have been discussed, and the ongoing projects and standardization activities also stated in this paper.

Index Terms—Heterogeneous network, 5G, massive MIMO, spectrum sharing, energy efficiency, mobile network, radio access, system architecture

1.1 INTRODUCTION

Mobile Communications have experienced a tremendous journey since its introduction in the late 1970s. At that time analog voice calls were the main, while today we have mobile broadband services capable of providing end user data rates of tens, or even hundreds, megabits per second. Due to the introduction of new devices such as smart phones and tablets and associated applications and use cases, the data traffic volumes in the networks have in principle exploded during the last few years. This trend is expected to continue in the coming years. In addition, future visions such as the Internet-of-Things are more and more becoming a reality. We are moving towards a networked society with unconstrained access to information and sharing of data available anywhere and anytime to anyone and anything. Since the introduction of the first generation of cellular mobile communications in the 1980s, we have witnessed tremendous progress in the research and technology development, as well as the successful deployment of wireless communications. As illustrated in Fig. 1, from the simple voice phone calls in the first generation, to text messaging services in the second generation, low-rate data and multimedia services in the third generation, and mobile internet and mobile social network in the fourth generation, wireless communications have penetrated into our daily work, study and social lives and greatly influenced our life styles.

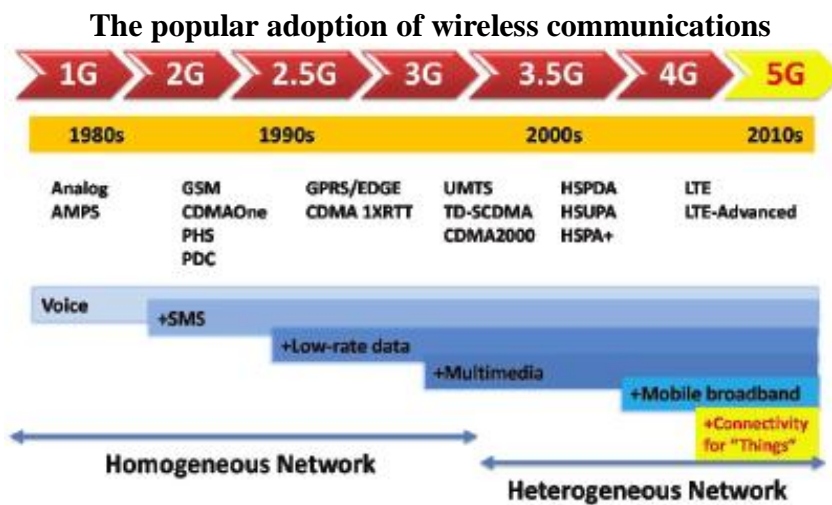


Fig. 1. The cellular evolution.

The fifth-generation (5G) wireless networks will support up to a 1,000-fold increase in capacity compared to the existing networks. It is anticipated to connect at least 100 billion devices worldwide with approximately 7.6 billion mobile subscribers due to the tremendous popularity of smart phones, electronic tablets, sensors, etc. and provide an up to 10 GB/s individual user experience. Along with the dramatic traffic explosion and device proliferation, 5G wireless networks also have to integrate human-to-machine and machine-to-machine communications in order to facilitate more flexible networked social information sharing aiming for one million connections per square kilometer. Consequently, sensors, accessories, and tools are expected to become wireless communication entities exchanging information, giving rise to the well-known "Internet of Things (IoT)". With such tremendously expanding demand for wireless communications in the future, researchers are currently looking for viable solutions to meet the stringent throughput requirement. In this regard, three paradigms have emerged:

- Reduce the transmitter-receiver (Tx-Rx) distance and improve frequency reuse: ultra-dense networks (UDNs) and device-to-device (D2D) communications;
- Exploit unused and unlicensed spectrum: millimeter wave (mmWave) communications and Long Term Evolution (LTE) in unlicensed spectrum (LTE-U);
- Enhance spectral efficiency (SE) by deploying a massive amount of antennas: massive multiple-input multiple-output (M-MIMO).

The technologies listed above increase the system throughput from three different angles. However, the performance gains introduced by these technologies do not come for free. In fact, in recent years, energy consumption has become a primary concern in the design and operation of wireless communication systems motivated by the desire to lower the operating cost of the base stations (BSs), prolong the lifetime of the user terminals (UTs), and also protect the Environment. As a result, energy efficiency (EE), measured in bits-per-Joule, has emerged as a New prominent figure of merit and has become the most widely adopted green design metric for Wireless communication systems.

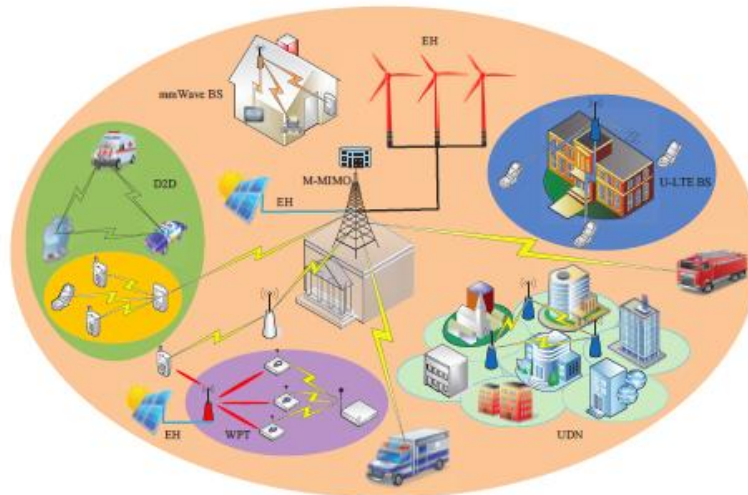


Fig. 1: An ecosystem of disruptive technologies for 5G wireless networks.

Meanwhile, it should also be noted that EE cannot be improved infinitely by only applying spectral efficient communication technologies, due to the constraint imposed by Shannon capacity

Gaining a better understanding of the specific challenges of energy harvesting technologies and alternative energy sources will pave the way for incorporating them smoothly into the upcoming 5G wireless network planning, design, and deployment. This article focuses on the state-of-the-art of energy harvesting and green 5G technologies, which will create an ecosystem of 5G wireless networks as shown in Fig. 1.

TABLE 1: Comparison of green 5G technologies

Technology	High EE at	Coverage	Transmit Power	Circuit Power	Signaling Overhead
mmWave	BS and UT	200 m	Low	High	High
LTE-U	BS and UT	500 m	Moderate	Moderate	Moderate
UDNs	UT	10-200m	Low	High	High
D2D	BS	2-100m	Low	Low	Moderate
M-MIMO	UT	1000 m	Low	High	High

The real-world deployment is always preceded by thorough research stage and since we, as a research society, are currently around four years prior to the expected roll out of next-generation 5G mobile systems, it is not surprising that 5G is the most turbulent topic among research community nowadays with hundreds of scientific articles indexed by international databases every year. The key of such extreme interest lies in the anticipated revolutionary character and high heterogeneity of the future 5G network's architecture combining the aspects of emerging ultra-high-frequency spectrum access, hyper-connected vision, new application-specific requirements and much more.

1.2 Existing Cellular Networks – Issues and Challenges

Internet of Things, Internet of Vehicles, Device-to-Device communications and Machine-to-Machine communications. Below Table Differences between human-based and M2M communications.

	Human-based	Machine-to-Machine
Traffic Direction	Mostly downlink; although uplink traffic is increasing over the last years due to interactive applications such as social networking, humans still download more than they upload.	Mainly uplink data to report sensed information. For some applications, symmetric uplink and downlink capacity is needed in order to allow for the dynamic interaction between sensors and actuators.
Message Size	The size of the messages is generally big, motivated by demanding applications such as multimedia and real-time transmissions, including video streaming.	The size of the messages is generally very short (e.g. very few bits of the reading of a meter, or even just 1 bit to inform of the existence or absence of a given event).
Connect & access delay	Human-based applications tend to be very demanding once a connection has been established. However, although not desirable, longer connection delays are typically well tolerated.	Many M2M applications will be based on duty-cycling, i.e., having devices sleeping and just waking up from time to time to transmit data. For some applications, the connection delays should be very short to ensure quick access to the network when waken up.
Transmission periodicity	Human-based data traffic is very random and asynchronous in nature. In addition, the frequent transmission of control information is required to ensure high throughput and good delay performance.	Very wide range of alternatives. For many applications, transmissions will be very sparse in time. In addition, many applications will have known periodic patterns (e.g., programmed tasks).
Mobility	Mobility management and exchange of location information are constantly required to ensure seamless connectivity and allow for roaming.	For most of M2M applications, mobility is not a major concern. Some applications may have no mobility at all.
	In general, there is no major	Some M2M applications may

Information priority	differentiation between users in terms of priority, but only between applications for each user.	transmit critical information and thus require very high priority with a detailed level of granularity.
Number of device	At most, hundreds of devices per connection point. Typically, tens of devices per connection point.	Higher than in human-based communications. Hundreds or thousands of devices per connection point.
Security & monitoring	Humans can raise an alert in the case of troubleshooting or tampering.	M2M devices cannot raise an alert in the case of malfunctioning or tampering.
Lifetime & energy Efficiency	Humans can recharge batteries in a daily manner.	Once an M2M network has been deployed, some devices may require to operate for years or decades without maintenance.

Indeed, different research studies have been launched over the last years to understand, how cellular systems need to evolve to be able to provide efficient access to M2M/ IoT networks. It is important to highlight that M2M principles are fundamentally different from human-based (Human-to-Human; (H2H)) communications.

1.3 Emerging 5G Use Cases and Applications

A wide variety of new emerging 5G applications put pressure on the commercial roll out of 5G wireless systems. 5G network architecture is expected to provide network solutions for a wide range of public and private sectors i.e., energy, agriculture, city management, health care, manufacturing and transport, with significantly improved user experience. Aside from the enormous number of connections, 5G networks also have to support diverse nature of devices and their associated service requirements.

Although research and development in some of these applications are already underway in 4G wireless, original 4G LTE standards, 3GPP LTE Release 8 [22] did not include support to any of these applications. Rather, these applications were spawned later, and started explosive increase in wireless data usage, thereby imposing additional utilization of resource constrained 4G wireless networks. Naturally, later releases of 4G LTE networks, often named as "LTE Advanced", gradually started to include these applications. On the other hand, it is expected that massive bandwidth of 5G mmWave communications will provide a native support for these emerging applications. In this section, some of the demanding applications i.e., D2D communications, M2M communications, IoV, IoT and healthcare are discussed in detail.

a) 5G Technology Enablers

In order to enable the ubiquitous connectivity required for many of the 5G-IoT applications, broad set of features and functionalities will need to be integrated to the currently predominantly broadband approach. This inherently leads us to a strong heterogeneous networking (HetNets) paradigm with multiple types of wireless access nodes. HetNets will

offer the required seamless connectivity for the emerging IoT through a complex set of mechanisms for coordination and network management. Evolved 4G and emerging 5G networks will thus be characterized by interoperability and integration between various radio access networks, including those working with unlicensed frequencies. The aim of this section is to review recently finished 4G, currently ongoing 4G-Evolution as well as emerging 5G design efforts to provide an overall picture towards accommodating a heterogeneous networking.

b) 5G Radio Access Network Enablers

To provide a common connected platform for a variety of applications and requirements for 5G, the main technology components will be described on following lines within this section.

Massive MIMO

Massive MIMO represents an evolving technology that has been upgraded from the current MIMO technology. The massive MIMO system uses arrays of few hundred antennas which are at the same moment in onetime / frequency slot serving tens of user terminals. The main objective of this technology is to extract all the benefits of “classic” MIMO but on a significantly larger scale. In general, massive MIMO is an evolving technology of next-generation (5G) networks, which is energy efficient, robust, and secure and spectrum efficient.

This process is not implementable for massive MIMO systems, especially in high mobility conditions because of two reasons:

- (i) The downlink pilots from the base station must be orthogonal among the antennas, due to which the requirement of time, frequency slots for the downlink pilots increases with the increase in the number of antennas;
- (ii) As the number of base station antennas increases the number of the channel estimates also increases for each terminal which in turn needed hundred times more uplink slots to feedback the channel responses to the base station. A general solution to this problem is to work in Time Division Duplex (TDD) mode and depend on the reciprocity between the uplink and downlink channels.

Therefore, massive MIMO technology depends on phase coherent signals from all the antennas at the base station, but the computational processing of these signals is feasible to do within the 5G-ready infrastructure.

c) Millimeter Wave Technologies

As the demand for capacity in mobile broadband communications increases dramatically every year, wireless carriers must be prepared to support up to a thousand-fold increase in total mobile traffic by 2020. This situation encourages researchers to seek greater capacity and to find new wireless spectrum beyond the 4G standard. Recent studies suggest that mmWave frequencies could be used to augment the currently saturated 700MHz to 2.6 GHz radio spectrum bands for wireless communications.

Today's microwave cellular systems, which are originally targeted to different application use-cases i.e., voice / data / video calling, have precious little spectrum: around 600MHz are currently in use, divided among operators. Currently, there exist two ways to gain access to more microwave spectrum:

- Repurpose or reframe radio spectrum – this option has occurred worldwide with the repurposing of terrestrial TV spectrum for applications such as rural broadband access.

Unfortunately, reframing has not freed up that much spectrum, only about 80MHz and at a high cost associated with moving the incumbents.

- To share spectrum utilizing e.g., cognitive radio techniques – the high hopes initially placed on cognitive radio have been dampened by the fact that an incumbent not fully willing to cooperate is a major obstacle to spectrum efficiency for secondary users.

d) Direct Communications

D2D communications represent a turning point in cellular systems. They entail the possibility that two devices can exchange data without the involvement of the BS or with just a partial aid from the base station. This section deals with the description tightly connected with the offloading scenarios – future application use-cases within 5G systems. In contrast to WiFi / WiFi-Direct and Bluetooth technologies, which provide D2D capabilities in the unlicensed band, with D2D communications the QoS and QoE are controllable because of the use of the licensed spectrum.

e) Licensed Assisted Access

Recently, the 3GPP commenced a work item on License Assisted Access (LAA), where licensed and unlicensed carriers are aggregated. LAA uses licensed frequency spectrum for control-related transmissions while sending data over both licensed and license-exempt carriers. Whilst mainly designed for high-capacity applications, the approach could be beneficial in the context of an ever-increasing amount of smart devices with increasing data rate demands. Notably, all non-critical IoT traffic could be transmitted via the license-exempt band whilst being controlled from the licensed band.

f) Licensed Shared Access

In light of the above, it appears that the shared use of spectrum becomes unavoidable even for those who have conventionally enjoyed exclusive access rights. However, the currently existing options of spectrum sharing (in primary licensed or unlicensed spectrum) do not offer much of the requested interference protection, therefore resulting in insufficient reliability, QoS guarantees, and predictability of operation. By contrast, the emerging Licensed Shared Access (LSA) regulatory concept allows for more advanced spectrum sharing between limited numbers of entities with carefully defined usage rights, combining the benefits of command-and-control Spectrum management with a flexible and innovative market-friendly approach. Broadly, LSA approach (framework) enables authorized spectrum sharing by allowing at least two users, the incumbent (i.e., the current holder of spectrum rights) and the LSA licensee (i.e., the temporary user of spectrum) to access the same frequency bands in a licensed predetermined manner following a well-defined mutual agreement. In other words, LSA guarantees that the incumbent retains spectrum access rights anytime, anywhere, and the LSA licensee(s) will refrain from using this spectrum when needed by the incumbent (or at least will not disrupt the incumbent's operation).

g) 5G Core Network Enablers

Finally, this section discusses the emerging network enablers which are pertinent to supporting the above 5GRAN enablers. Traditionally, core networks have been designed as a single network architecture serving multiple purposes, addressing a range of requirements, and supporting backward compatibility and interoperability. This “one-size-fits-all” approach has kept costs at a reasonable level, given that one set of vertically integrated nodes has provided all functionality. Technology has, however, evolved. Virtualization, advanced automation and orchestration make it possible to build networks in a more (i) scalable, (ii) flexible, and (iii) dynamic way. From several possible enablers, the focus in this section is given on Software Defined Networking (SDN) and Network Function Virtualization (NFV).

1.4) Software Defined Networking

SDN will simplify network design, management and maintenance in heterogeneous networked environments. With the explosion of devices connected within the 5G infrastructure, traditional network architectures will not be able to manage both the volume of devices, and the amount of data they will be dumping into the network. There will be need to effectively manage the load of traffic and the network resources in the 5G era, to avoid possible collapse of the network, and allow the coexistence of different services with different QoS and QoE requirements.

1.5) Network Function Virtualization

The NFV stands for a complementary technology of SDN, destined to impact future 5G networks. Nowadays, NFV aims to virtualize a set of network functions, by deploying them into software packages, which can be assembled and chained to create the same services provided by legacy networks. The NFV concept comes from the classical service, whereby many virtual machines running different operating systems, software and processors, can be installed on the same server. By moving network functions from dedicated hardware into general purpose computing/storage platforms (e.g., servers), NFV technologies will allow to manage many heterogeneous 5G / IoT-ready devices. Moreover, by implementing the network functions in software packages that can be deployed in virtualized infrastructure, NFV offers scalability and large flexibility in operating and managing mobile devices.

With NFV, it will be possible to reduce both CAPEX and OPEX. Currently, the use of NFV is under discussion in the context of vitalizing the core network, and centralizing the base band processing within RAN.

1.6) Major Challenges

As already touched upon in the introduction above, there are a number of different challenges and requirements that mobile networks need to be able to handle in the future. Some of the most important ones from a green design perspective will be discussed in the following subsections.

A. Data Traffic Volumes

Today, there are over 2 billion mobile broadband subscriptions worldwide, a figure that has grown 40% annually over the last six years, making mobile broadband the GREEN towards Green 5G Mobile Networks. Furthermore, forecasts predict that data traffic volumes will experience an exponential growth in the coming years. It can be seen that the data traffic volumes are expected to increase approximately 10 times between 2018 and 2020. By extrapolation of this, one easily realizes that a several hundred-fold, or even a thousand fold, increase can be expected somewhere beyond 2020. This is well in line with other forecasts. For example, forecasts predict that per-user data rates are expected to grow by a factor of up to 50-100; on the other hand the density of mobile Internet users is expected to increase by a factor of up to 10, implying a factor of 1000x capacity demand beyond and within 2020 timeframe.

B. Number of Connected Devices

Today, there are almost 7 billion mobile subscriptions, and thereby wireless connected devices, worldwide. Most of them are devices used by humans such as mobile phones, laptop, computers, or tablets. However, in the future this is predicted to change, as different kinds of machines such as smart grid devices, sensors and surveillance cameras will be connected to the networks. This is usually referred to as Internet-of-things or machine-to-machine (M2M) communication, and means that everything that can benefit from a wireless connection will have a wireless connection. Just by considering the number of devices in a normal home, one realizes that the number of connected devices in the future will be 10-100 times higher than today. This kind of evolution will also introduce new characteristics of the traffic in the networks, e.g. due to the presence of a large number of M2M devices requiring small amount of bits, but requiring a relatively high overhead in terms of signaling. In this sense, the need of an efficient signaling management will be crucial also in terms of offering to the network nodes the possibility to be de-activated during no traffic periods. From this point of view the M2M traffic will introduce additional challenges for a green network design.

C. Diverse Requirements

This challenge needs to be taken care of in the system design, as this sets up new and varying quality-of-service (QoS) requirements. This may have a significant impact on the green design, as the minimization of network power consumption should not have impact on the correct and efficient management of the QoS in the system.

D. Energy Consumption

Perhaps the most important challenge is to meet the abovementioned challenges and requirements in an affordable and sustainable way. Cost is an important issue to consider, and will also be in the future. CAPEX and OPEX need to be at a level where services can be provided at a reasonable end user price and with attractive business cases for the mobile operators. Already today, the mobile operator's energy bill is a substantial and increasing part of their OPEX, and with the future requirements and expectations there is a clear risk that this may increase even further if nothing is done. Hence, low energy consumption is very important, and we have above discussed the impact of the other challenges on this.

1.7) CONCLUDING

This paper has provided an outlook on green aspects and solutions for 5G mobile network design that will be worked on in the 5GrEEn project. In 2020, mobile access networks will experience significant challenges as compared to the situation of today. Traffic volumes are expected to increase 1000 times, and the number of connected devices will be 10-100 times higher than today in networked society with unconstrained access to information and sharing of data available anywhere and anytime to anyone and anything. One of the big challenges is to provide this 1000-fold capacity increase to billions of devices in an affordable and sustainable way. Low energy consumption is the key to achieve this. Important focus areas to achieve this include system architecture, where a logical separation of data and control planes is seen as a promising solution; network deployment, where heterogeneous ultra-dense layouts will have a positive effect; radio transmission, where the introduction of massive antenna configurations is identified as a promising enabler; and, finally, backhauling solutions that need to be more energy efficient than today.

WEBSITE:

<http://www.itinfo.am/eng/customer-relationship-management/>

REFERENCES:

1. Achumba, I. C. (2006). *The Dynamics of Consumer Behaviour*, (New ed.). Lagos: Mac – Williams.
2. Almosawi, M. (2001). Bank selection criteria employed by college students in Bahrain: An empirical analysis. *International Journal of Bank Marketing*, 19 (3), 115-125.
3. Anamica Chopra & Usha Arora (2013), “An Analysis of the Gap Between Customers’ Expectation and Perception Regarding Selected CRM Practices in Public and Private Sector Banks”, *The IUP Journal of Bank Management*.
4. Bansal, Ipshita and Sharma, Rinku. (2008). Indian Banking Services: Achievements and challenges. *The Icfai University Journal of services marketing*, Hyderabad. VI (2), 32-43.
5. Bargal Hitendra & Sharma Ashish (2008), “Role of Service Marketing in Banking Sector”, *The IUP Journal of Services Marketing*, Vol. 5, No. 1, Pp. 63–69.
6. Berger PD, Bolton RN, Bowman D, Briggs E, Kumar V, Parasuraman A, Creed T. (2002). Marketing Actions and the Value of Customer Assets. *Journal of Services Research*, 5(1), 39-54.
7. Berry L.L (1983). Relationship marketing of services: Growing Interest, Emerging Perspectives. *Journal of Academy of Marketing Science*, 23 (4), 236-245.
8. Berry, L. L. (1983). Relationship Marketing. In Berry L., Shostack L.G. and Upah G. D. (Eds.). *Emerging Perspectives on Service Marketing*. Chicago: American Marketing Association, 28-30.
9. Blattberg R C, Getz G, Thomas J. S. (2001). *Customer Equity: Building and Managing Relationships as Valuable Assets*. Boston: Harvard Business School Press.

10. Brown, S. A. (2000). Customer Relationship Management: A Strategic Imperative in the World of E-Business. Canada: John Wiley & Sons.
11. Buttle, F. (2002). The S. C. O. P. E. of Customer Relationship Management. Available: <http://www.crmforum.com/library/aca/aca-07.html>
12. Chaitanya, K. V. (2005). Metamorphosis of Marketing Financial Services in India. *Journal of Services Research*, 5 (April-September), 6-15.
13. Chary T. Satya Narayana & Ramesh, R. (2012). Customer Relationship Management in Banking Sector- A Comparative Study, *KKIMRC IJRHRM*, 1 (2), 20-29.
14. Das Kallol, Parmar Jitesh & Sadanand K Vijay (2009), "Customer Relationship Management (CRM) Practices and Customer Loyalty: A Study of Indian Retail Banking Sector", *European Journal of Social Sciences*, Vol. 11, No. 1, Pp. 61-85.
15. Dhade & M. Mittal (2008), "Preference, Satisfaction Level and Chances of Shifting: A Study of the Public Sector and New Private Banks", *The IUP Journal of Bank Management*, Vol. 7, No. 2, Pp. 65-73.
16. Dr. K. Ganesamurthy, Dr. S Amilan & M Jothi (2011), "The Customer's Attitude on CRM Practices of Commercial Banks in India: An Empirical Study (With Special Reference to Sivagangai District, Tamilnadu)", *Global Management Review*, Vol. 6, No. 1.
17. Durkin, M. (2004). In Search of the Internet-Banking Customer. *The International Journal of Bank Marketing*, 22 (7), 484-503.
18. Dutta, K. & Dutta, A. (2009). Customer Expectations and Perceptions across the Indian Banking Industry and the Resultant Financial Implications. *Journal of Services Research*, 9, 31-49.
19. Dwyer, FR, Schurr PH, Oh S. (1987). Developing Buyer-Seller Relations. *J. Mark.*, 51(2), 11-28.
20. Dyche, J. (2001). *The CRM Handbook: A Business Guide to Customer Relationship Management*, Reading, MA: Addison-Wesley.
21. Eisingerich, A. B. and Bell, S. J. (2006). Relationship Marketing in the Financial Services Industry: The Importance of Customer Education, Participation and Problem Management for Customer Loyalty. *Journal of Financial Services Marketing*, 10 (4), 86-97.
22. Rangarajan. (2010). Effective Role of Customer Relationship Management in Banking Sector, *Global Research Review*, New Delhi.
23. Rashmi, "a study on customer relationship management practices in banking sector in India", "Volume 4, Issue 5 (May, 2015) Online ISSN-2277-1166" print.
24. Ray, B. (2007). An analytical approach to understand customers from the perspective of profit making. *Marketing Mastermind*. The Icfai University Press, 52-55.
25. Reinartz, W. J. and Kumar, V. (2003). The Impact of Customer Relationship Characteristics on Profitable Lifetime Duration. *Journal of Marketing*, 67 (1), 77-99.
26. Roger Hallowell (1996). The relationships of customer satisfaction, customer loyalty, and profitability: an empirical study. *International Journal of Service Industry Management*, 7 (4), 27 - 42.

27. Rootman, C., Tait, M., & Bosch, J. (2008). Variables influencing the customer relationship management of banks. *Journal of Financial Services Marketing*, 13(1), 52- 62.
28. Rust RT, Zahorik AJ, Keiningham T.L. (1995). Return on Quality (ROQ): Making Service Quality Financially Accountable. *Journal of Marketing*, 59(2), 58- 70.
29. S. Knox, S. Maklan, A. Payne, J. Peppard & L. Ryals (2003), "Customer Relationship Management: Perspectives from the Marketplace", *Butterworth-Heinemann*, Burlington.
30. Sachdev S. B and Verma H.V. (2004). Relative importance of service quality dimensions: A multi-sectoral study. *Journal of Services Research*, 4(1), 59-81.
31. Sheth, J. N. and Sisodia, R. S. (1995). Improving Marketing Productivity. In Heilbrunn (Eds.). *Encyclopedia of Marketing in the Year 2000*. Chicago, IL: American Marketing Association NTC Publishing.
32. Shibu. N.S. (2011). Customer Relationship Management and Banking Industry, *Journal of Social Sciences*, 36(17), 72-79.
33. Teller Vision (2009), "Customer Perception Depends on Bank Size", Issue 1379, March.
34. V. Kumar & W. Reinartz (2003), "Impact of Customer Relationship Characteristics on Profitable Lifetime Duration", *Journal of Marketing*, Vol. 67, No. 1, Pp. 77-99.

The Indian Banking Sector Reforms and its Impacts

Harneet Kaur

Assistant Professor

Post Graduate Govt College For Girls

Chandigarh

Abstract

India has had more than a decade of financial sector reforms during which there has been substantial transformation and liberalization of the whole financial system. Strengthening financial systems has been one of the central issues facing emerging markets and developing economies. This is because sound financial systems serve as an important channel for achieving economic growth through the mobilization of financial savings, putting them to productive use and transforming various risks. The banking sector reforms in India were started as a follow up measures of the economic liberalization and financial sector reforms in the country. The banking sector being the lifeline of the economy was treated with utmost importance in the financial sector reforms. The reforms were aimed at to make the Indian banking industry more competitive, versatile, efficient, productive, to follow international accounting standard and to free from the government's control. The reforms in the banking industry started in the early 1990s have been continued till now. In this paper we intend to analyze the major reforms and the major impacts of those reforms related to the banking sector in India.

Introduction

Commercial banking has been one of the oldest businesses in India and the earliest reference of commercial banking in India can be traced in the writings of Manu. Modern banking in India can be dated as far back as in 1786 with the establishment of General Bank of India. In the early nineteenth century three Presidency Banks were established in Bengal, Bombay and Madras and in 1921 they were merged in to newly form Imperial Bank of India. The Imperial Bank of India was converted in to State Bank of India under the State Bank of India Act, 1955. The swadeshi movement witnessed the birth of several indigenous banks such as Punjab National Bank, Bank of Baroda and Canara Bank. In order to increase its control over the banking sector, the govt. of India had nationalized 14 major private sector banks with deposits exceeding Rs.500 million in 1969.

While several committees have gone in to the problems of commercial banking in India, the two most important of them are-

- a) Narasimham Committee I (1991).
- b) Narasimham Committee II (1998).

The major recommendations made by the Narasimham I committee report are listed below-

1. Establishment of a four-tier hierarchy for the banking structure consisting of three to four large banks with SBI at the top.
2. The private sector banks should be treated equally with the public sector banks and govt. should contemplate to nationalize any such banks.
3. The ban on setting new banks in private sector should be lifted and the licensing policy in the branch expansion must be abolished.
4. The govt. has to be more liberal in the expansion of foreign bank branches and also

foreign operations of Indian banks should be rationalized.

5. The Statutory Liquidity Ratio (SLR) and Cash Reserve Ratio (CRR) should be progressively brought down from 1991-92.
6. The directed credit program should be re-examined and the priority sector should be redefined to comprise small and marginal farmers, the tiny industrial sector, small business operators and weaker sections.
7. Banking industry should follow BIS/Basel norms for capital adequacy within three years.
8. Interest rates should be deregulated to suit the market conditions.
9. The govt. should tighten the prudential norms for the commercial banks.
10. The competition in lending between DFIs and banks should be increased and a shift from consortium lending to syndicated lending should be made.
11. In respect of doubtful debts, provisions should be created to the extent of 100 percent of the security shortfall.
12. The govt. share of public sector banks should be disinvested to a certain percentage like in case of any other PSU.
13. Each public sector banks should set up at least one rural banking subsidiary and they should be treated at par with RRBs. In order to initiate the second generation of financial

Narasimham committee report II had for mergers an acquisitions and had observed that Central Bank's role should be separated from being monetary authority to that of regulator of the banking sector.

The major recommendations of the second Narasimham II report were mentioned below:-

1. The committee favored the merger of strong public sector banks and closure of some weaker banks if their rehabilitation was not possible.
2. It recommended corrective measures like recapitalization is undertaken for weak banks and if required such banks should be closed down.
3. The committee had also suggested an amicable golden handshake scheme for surplus banking sector staff.
4. Suggesting a possible short term solution to weak banks, the report observed that the narrow banks could be allowed as a mean of facilitating their rehabilitation.
5. Expressing concern over rising non-performing assets, the committee provided the idea of setting up an asset reconstruction fund to tackle the problem of huge non-performing assets (NPAs) of banks under public sector.
6. The report emphasized the need of enhancement of capital adequacy norms from the present level of 8 percent but did not specify the amount to which it should be raised.
7. The Banking Sector Reform Committee further suggested that existence of a healthy competition between public sector banks and private sector banks was essential.
8. The report envisaged flow of capital to meet higher and unspecified levels of capital adequacy and reduction of targeted credit.

Banking in the Pre-reform Period

It is useful to briefly recall the nature of the Indian banking sector at the time of initiation of financial sector reform in India in the early 1990s. This would facilitate a greater clarity of the rationale and basis of reforms. The Indian financial system in the pre-reform period, i.e., upto the end of 1980s, essentially catered to the needs of planned development in a mixed economy

framework where the government sector had a domineering role in economic activity. The strategy of planned economic development required huge development expenditures, which was met thorough the dominance of government ownership of banks, automatic monetization of fiscal deficit and subjecting the banking sector to large presumptions both in terms of the statutory holding of Government securities (statutory liquidity ratio, or SLR) and administrative direction of credit to preferred sectors. Furthermore, a complex structure of administered interest rates prevailed, guided more by social priorities, necessitating cross-subsidization to sustain commercial viability of institutions. These not only distorted the interest rate mechanism but also adversely affected financial market development. All the signs of 'financial repression' were found in the system.

There is perhaps an element of commonality in terms of such a 'repressed' regime in the financial sector of many emerging market economies at that time. The decline of the Bretton Woods system in the 1970s provided a trigger for financial liberalization in both advanced and emerging markets. Several countries adopted a 'big bang' approach to liberalization, while others pursued a more cautious or 'gradualist' approach. The East Asian crises in the late 1990s provided graphic testimony as to how faulty sequencing and inadequate attention to institutional strengthening could significantly derail the growth process, even for countries with otherwise sound macroeconomic fundamentals.

India, in this context, has pursued a relatively more 'gradualist' approach to liberalization. The bar was gradually raised. Each year the Central Bank slowly, in a manner of speaking, tightened the screws. Nevertheless, the transition to a regime of prudential norms and free interest rates had its own traumatic effect. It must be said to the credit of our financial system that these changes were absorbed and the system has emerged stronger for this reason.

II. Contours of reforms

Financial sector reforms encompassed broadly institutions especially banking, development of financial markets, monetary fiscal and external sector management and legal and institutional infrastructure.

Reform measures in India were sequenced to create an enabling environment for banks to overcome the external constraints and operate with greater flexibility. Such measures related to dismantling of administered structure of interest rates, removal of several preemptions in the form of reserve requirements and credit allocation to certain sectors. Interest rate deregulation was in stages and allowed build up of sufficient resilience in the system. This is an important component of the reform process, which has imparted greater efficiency in resource allocation. Parallel strengthening of prudential regulation, improved market behaviour, gradual financial opening and, above all, the underlying improvements in macroeconomic management helped the liberalisation process to run smooth. The interest rates have now been largely deregulated except for certain specific classes, these are: savings deposit accounts, non-resident Indian (NRI) deposits, small loans up to Rs.2 lakh and export credit. Without the dismantling of the administered interest rate structure, the rest of the financial sector reforms could not have meant much.

As regards the policy environment on public ownership, the major share of financial intermediation has been on account of public sector during the pre-reform period. As a part of the reforms programme, initially there was infusion of capital by Government in public sector banks, which was subsequently followed by expanding the capital base with equity participation by private investors up to a limit of 49 per cent. The share of the public sector banks in total banking assets has come down from 90 per cent in 1991 to around 75 per cent in

2006: a decline of about one percentage point every year over a fifteen-year period. Diversification of ownership, while retaining public sector character of these banks has led to greater market accountability and improved efficiency without loss of public confidence and safety. It is significant that the infusion of funds by government since the initiation of reforms into the public sector banks amounted to less than 1 per cent of India's GDP, a figure much lower than that for many other countries.

Another major objective of banking sector reforms has been to enhance efficiency and productivity through increased competition. Establishment of new banks was allowed in the private sector and foreign banks were also permitted more liberal entry. Nine new private banks are in operation at present, accounting for around 10-12 per cent of commercial banking assets. Yet another step towards enhancing competition was allowing foreign direct investment in private sector banks up to 74 per cent from all sources. Beginning 2009, foreign banks would be allowed banking presence in India either through establishment of subsidiaries incorporated in India or through branches.

Impressive institutional reforms have also helped in reshaping the financial marketplace. A high-powered Board for Financial Supervision (BFS), constituted in 1994, exercise the powers of supervision and inspection in relation to the banking companies, financial institutions and non-banking companies, creating an arms-length relationship between regulation and supervision. On similar lines, a Board for Regulation and Supervision of Payment and Settlement Systems (BPSS) prescribes policies relating to the regulation and supervision of all types of payment and settlement systems, set standards for existing and future systems, authorise the payment and settlement systems and determine criteria for membership to these systems.

The system has also progressed with the transparency and disclosure standards as prescribed under international best practices in a phased manner. Disclosure requirements on capital adequacy, NPLs, profitability ratios and details of provisions and contingencies have been expanded to include several areas such as foreign currency assets and liabilities, movements in NPLs and lending to sensitive sectors. The range of disclosures has gradually been increased. In view of the increased focus on undertaking consolidated supervision of bank groups, preparation of consolidated financial statements (CFS) has been mandated by the Reserve Bank for all groups where the controlling entity is a bank.

The legal environment for conducting banking business has also been strengthened. Debt recovery tribunals were part of the early reforms process for adjudication of delinquent loans. More recently, the Securitisation Act was enacted in 2003 to enhance protection of creditor rights. To combat the abuse of financial system for crime-related activities, the Prevention of Money Laundering Act was enacted in 2003 to provide the enabling legal framework. The Negotiable Instruments (Amendments and Miscellaneous Provisions) Act 2002 expands the erstwhile definition of 'cheque' by introducing the concept of 'electronic money' and 'cheque truncation'. The Credit Information Companies (Regulation) Bill 2004 has been enacted by the Parliament which is expected to enhance the quality of credit decisions and facilitate faster credit delivery.

Improvements in the regulatory and supervisory framework encompassed a greater degree of compliance with Basel Core Principles. Some recent initiatives in this regard include consolidated accounting for banks along with a system of Risk-Based Supervision (RBS) for intensified monitoring of vulnerabilities.

The structural break in the wake of financial sector reforms and opening up of the economy necessitated changes in the monetary policy framework. The relationship between the central bank and the Government witnessed a salutary development in September 1994 in terms of supplemental agreements limiting initially the net issuance of ad hoc treasury Bills. This initiative culminated in the abolition of the ad hoc Treasury Bills effective April 1997 replaced by a limited ways and means advances. The phasing out of automatic monetization of budget deficit has, thus, strengthened monetary authority by imparting flexibility and operational autonomy. With the passage of the Fiscal

Reforms in the Government securities market were aimed at imparting liquidity and depth by broadening the investor base and ensuring market-related interest rate mechanism. The important initiatives introduced included a market-related government borrowing and consequently, a phased elimination of automatic monetisation of Central Government budget deficits. This, in turn, provided a fillip to switch from direct to indirect tools of monetary regulation, activating open market operations and enabled the development of an active secondary market. The gamut of changes in market development included introduction of newer instruments, establishment of new institutions and technological developments, along with concomitant improvements in transparency and the legal framework.

III. Processes of Reform

What are the unique features of our reform process? First, financial sector reform was undertaken early in the reform cycle in India. Second, the banking sector reforms were not driven by any immediate crisis as has often been the case in several emerging economies. Third, the design and detail of the reform were evolved by domestic expertise, while taking on board the international experience in this regard. Fourth, enough space was created for the growth and healthy competition among public and private sectors as well as foreign and domestic sectors.

How useful has been the financial liberalization process in India towards improving the functioning of institutions and markets? Prudential regulation and supervision has improved; the combination of regulation, supervision and safety nets has limited the impact of unforeseen shocks on the financial system. In addition, the role of market forces in enabling price discovery has enhanced. The dismantling of the erstwhile administered interest rate structure has permitted financial intermediaries to pursue lending and deposit taking based on commercial considerations and their asset-liability profiles. The financial liberalisation process has also enabled to reduce the overhang of non-performing loans: this entailed both a 'stock' (restoration of net worth) solution as well as a 'flow' (improving future profitability) solution. Financial entities have become increasingly conscious about risk management practices and have instituted risk management models based on their product profiles, business philosophy and customer orientation. Additionally, access to credit has improved, through newly established domestic banks, foreign banks and bank-like intermediaries. Government debt markets have developed, enabling greater operational independence in monetary policy making. The growth of government debt markets has also provided a benchmark for private debt markets to develop.

There have also been significant improvements in the information infrastructure. The accounting and auditing of intermediaries has improved. Information on small borrowers has improved and information sharing through operationalisation of credit information bureaus has helped to reduce information asymmetry. The technological infrastructure has developed in

tandem with modern- day requirements in information technology and communications networking.

The improvements in the performance of the financial system over the decade-and-a-half of reforms are also reflected in the improvement in a number of indicators. Capital adequacy of the banking sector recorded a marked improvement and stood at 12.3 per cent at end-March 2006. This is a far cry from the situation that prevailed in early 1990s.

On the asset quality front, notwithstanding the gradual tightening of prudential norms, non-performing loans (NPL) to total loans of commercial banks which was at a high of 15.7 per cent at end-March 1997 declined to 3.3 per cent at end-March 2006. Net NPLs also witnessed a significant decline and stood at 1.2 per cent of net advances at end-March 2006, driven by the improvements in loan loss provisioning, which comprises over half of the total provisions and contingencies. The proportion of net NPA to net worth, sometimes called the solvency ratio of public sector banks has dropped from 57.9 per cent in 1998-99 to 11.7 per cent in 2006-07.

Operating expenses of banks in India are also much more aligned to those prevailing internationally, hovering around 2.1 per cent during 2004-05 and 2005-06. These numbers are comparable to those obtaining for leading developed countries, which were range-bound between 1.4-3.3 per cent in 2005.

Bank profitability levels in India have also trended upwards and gross profits stood at 2.0 per cent during 2005-06 (2.2 per cent during 2004-05) and net profits trending at around 1 per cent of assets. Available information suggests that for developed countries, at end-2005, gross profit ratios were of the order of 2.1 per cent for the US and 0.6 per cent for France.

The extent of penetration of our banking system in our country as measured by the proportion of bank assets to GDP has increased from 50 per cent in the second half of nineties to over 80 per cent a decade later.

Summary of the Panel Discussion

Presently over two- third of the assets of Indian banking system are with public sector banks (PSBs) which generated less than one-third of total banking sector profit. Private sector banks have a Return on Assets (RoA) that is four times higher than that of PSBs. However, it was pointed out that such a snapshot comparison is misleading. Various empirical studies indicate a trend towards convergence in performance between public and private sector banks over a long period between 1994 and 2011. The divergence in performance started after 2008 which became marked after 2011. The present difference in productivity and competitiveness between PSBs and private sector banks can be attributed to both internal and external factors some of which are described below.

The PSBs do not have independent and fully empowered boards like their private counterparts. All major recruitments are done by the Government of India (GOI), the majority stakeholder. Non-executive directors are usually air-dropped without consultation with the boards. Until Indradhanush, the GOI used to invariably choose a CEO from within the pool of PSB executives without considering any external talent. Acts governing the PSBs (Bank Nationalisation Act, SBI Act) create a non-level playing field for them as they face dual regulators - GOI and RBI. PSBs also come under vigilance and RTI Act unlike private sector banks. HR and Technology policies, and IT schemes are homogenised across PSBs rather than be custom built as should be the case. In contrast, private sector banks who strategize deeply on these issues and ensure highest bang for their buck in these critical areas. There are various reasons for high level of NPAs in the banking system. The pain is also beginning to be felt even in large private sector banks but some of them were able to exit much earlier or their

involvement in bad loans was relatively small. Some of the reasons for high NPAs specially in the PSBs are: First, The prolonged period of easy fiscal and monetary conditions since 2008 resulted in easy liquidity, low interest rate which prompted PSBs to lend aggressively as they vied with each other for balance sheet growth. This led to serious dilution of underwriting standards. Second, Infrastructure lending undertaken in 2010 and 2011, some at the behest of the GOI, with optimistic assumptions resulted in unviable projects. Some of these were stalled for lengthy periods due to unavailability of raw materials, land acquisition problems or lack of other clearances. These have now morphed into stressed assets. Third, misuse of CDR (Corporate debt restructuring) between promoters and bankers prolonged the NPA problem as banks did not want to show stressed assets in their books, which would have required higher provisioning that would result in low profitability while borrowers were permitted additional borrowing for servicing their debt. Fourth, recent spurt in NPAs is due to the attempt by banks to clean up their books as directed by RBI to do so by March 2017. It is actually a legacy issue. It was pointed out that there has been a paradigm shift in the way the banking sector is viewed after the global financial crisis and this needs to be taken into account while formulating policy for the sector. Some studies have pointed out that the private banking system is congenitally prone to periodic failures. Empirical evidences shows that there have been 110 banking crisis in 80 economies, that are dominated by private sector banks. The cost of such crisis has been in the range of 1% to 3% of GDP in terms of lost output in the economy

The PSBs backed by the sovereign are seen as a force of stability as, being risk averse, these banks introduce heterogeneity in the risk management model which helps stabilise the system. These banks may underperform and be less competitive compared to private banks but they will be sufficiently competitive to survive in the business and deliver a stock return which is not significantly different to that of private sector bank.

Higher Capital Adequacy will improve the efficiency of banks in two ways:

- (i) By forcing banks to reduce operating costs, and
- (ii) By improving long-term viability through risk reduction.

Capital adequacy enables banks to mobilise more capital at reasonable cost.

The two important new parameters which are crucial for the growth of banks are asset quality and risk weightage.

On the basis of the Basle Committee proposals (1988), two tiers of capital have been prescribed for Indian SCBs:

Tier I—capital which can absorb losses without forcing a bank to stop trading, and

Tier II—capital which can absorb losses only in the event of a winding up.

Following the recommendations of the first Narasimhan Committee (1991) the RBI directed the banks to maintain a minimum capital of 8% as the risk-weighted assets; the second Narasimhan Committee (1998) suggested raising the ratio further. In March 2002, the capital to risk-weighted asset ratio (CRAR) was raised to 9%. It was subsequently raised to 10% with a view to tightening of the capital adequacy norm further.

At the end of March 2002, all SCBs (except five) had CRARs in excess of the stipulated 9%. The capital of PSBs has increased through government capital infusion, equity issues to public, and retained earnings.

(iii) Diversification in Bank Operations:

During the period of economic liberalisation PSBs have diversified their activities considerably. They have moved in new areas such as mutual funds, merchant banking, venture capital funding and other para-banking activities such as leasing (lease financing), hire-purchase, factoring and so on.

The main objective has been to make profits by deriving maximum economies of scale and scope, enlarging customer base and providing various types of banking services under one umbrella (both directly as also through subsidiaries). Many banks such as the SBI have become a one-stop financial services centre.

Conclusion

It has been analysed and found that the banking sector in India has provided a mixed response to the reforms initiated by the RBI and the Government of India since the 1991. The sector has responded very positively in the field of enhancing the role of market forces, regarding measures of prudential regulations of accounting, income recognition, provisioning and exposure, introduction of CAMELS supervisory rating system, reduction of NPAs and regarding the up gradation of technology. But at the same time the reform has failed to bring up a banking system which is at par with the international level and still the Indian banking sector is mainly controlled by the govt. as public sector banks being the leader in all the spheres of the banking network in the country. Hence we can conclude that the reforms in the Banking sector of India are still an unfinished agenda.

Reference:

- Jayaratne, J. and P.E. Strahan, 1996. "The finance-growth nexus: evidence from bank branch deregulation", *Quarterly Journal of Economics*, vol. 1 pp. 639-670.
- Joshi, Vijay and I.M.D. Little, 1996. *India's Economic Reforms: 1991-2001* (Oxford, Clarendon Press).
- Mohan, Rakesh (2004b), "Financial Sector Reforms in India: Policies and Performance Analysis", *Reserve Bank of India Bulletin*, October.
- Ahluwalia, M. S. (2002), "Reforming India's Financial Sector: An Overview", Oxford University Press.
- Dhar, P. K. (2002), "Indian Economy its Growing Dimensions", Kalyani Publishers.
- Committee on Financial System (1991), p.30.
- Report on Trend and Progress of Banking in India, RBI, various issues.

Dr. B. R. Ambedkar as an economist: Throw light on ignored aspects of Ambedkar's economic thoughts

Roop Raj

Research Scholar, Department of Economics, Kurukshetra University Kurukshetra,

***Abstract:** Father of Indian Civilization Baba Saheb Dr. B. R. Ambedkar was not only championed the cause of social justice for the untouchables, women, shudras and underprivileged sections of Indian society. But little was ever recorded in the yellowed pages of history about his economic thoughts that are usually submissive because of the various activities he undertook. The conspicuous absence of Dr. B. R. Ambedkar's economic thought in celebrated works of eminent Indian economic historians begs a question. Ambedkar's identity as an economist might have runaway their notice because of his recognition as the chairman of the Drafting Committee of the Constitution and as a leader of the backward and downtrodden sections of Indian society and various other pursuits he was engaged in. However, the present Research paper analyzes the different dimensions of Ambedkar's identity as an economist. Secondary sources; the mighty Constitution which in itself is a great witness of his rational thinking, various newspaper clippings, scholarly articles and books were referred to, by the author in an attempt to apply his thoughts in today's economic scenario.*

***Keywords:** B. R. Ambedkar, economist, depressed classes, economic development, society.*

Introduction:

Bhim Rao Ambedkar was born at Mhow in Central India on 14 April 1891. He was one such great thinker, leader and intellectual of its time in India who has not only changed the life of millions of untouchables but shaped India as a biggest democratic nation by writing its constitution. He is renowned as the "Father of Indian Constitution," and found economics seems to be one of his favourite subject and closest to his heart. Ambedkar was a dedicated student of economics. . He obtained his MA degree in June 1915 for his Thesis entitled "Ancient Indian Commerce". In June 1916 he submitted his thesis for Doctorate of Philosophy entitled "National Dividend for India: A Historic and Analytical Study". It was published eight years later under the title "The Evolution of Provincial Finance in British India." Ambedkar achieved his Doctorate in Economics from Columbia University of USA in 1917. In June 1921, Ambedkar's thesis entitled "Provincial decentralisation of Imperial Finance in British India" was accepted for MSc (Economics) degree by the University of London. Again in March 1923, he submitted the thesis "The Problem of the Rupee: Its Origin and its Solution" for which he received the degree of Dsc from London School of Economics . He was a Professor of Economics in Mumbai's Sydenham College in the early 1930s. His thoughts had great impact on Indian economy. His effort "The Problem of the Rupee" was considered an useful treatise. He wrote that closing of the Mints would prevent inflation and disturbances in the inside value level. He suggests several measures and some alternate vocations for economic progress of the untouchables. His speeches indicate his serious concern about economic upliftment of his people. In his indomitable style he narrates the theory of mutual dependence in socio-economic relationship between the touchables and the untouchables. He says 'The relationship is purely mutual. However, it is also true that this mutual relationship is not of equal strength because one party is having stronger leverage

against the other. The weaker party is always under a dilemma that if it has to struggle, how long it would be able to sustain. As a result, sometimes it has to abandon even the most important cause for creating some permanent system for protecting its dignity. Amartya Sen also called B. R. Ambedkar, the father of his Economics. And undoubtedly his sharp understanding and his exposure to foreign lands and great minds, owing to his higher education in Economics at the University of Columbia and London School of Economics, greatly prepared him intellectually to study the existing socio-economic problems that radiated from a hierarchical social structure under an exploitative foreign rule.

Ambedkar's economic philosophy is expressed in his ideas on mixed economy socialism, state ownership of industries, industrialisation, etc.

Objectives of the Study:

- To know the impact of the pioneering work of Dr. B. R. Ambedkar in the field of human development in India
- To highlight the ignored aspects of Dr. B. R. Ambedkar's economic thoughts.
- To analyze and assess Contribution of Dr. B. R. Ambedkar in Indian economy.

Methodology:

The present study on Dr. B. R. Ambedkar as an economist' is based on historical method. This research is based on a good deal of primary and secondary sources that are available. Dr. B. R. Ambedkar's MA Thesis entitled 'Ancient Indian Commerce'(1915). Dr. B. R. Ambedkar's Doctorate in Economics thesis entitled 'Provincial decentralisation of Imperial Finance in British India'(1921). Dr. B. R. Ambedkar's thesis 'The Problem of the Rupee: Its Origin and its Solution'(1923) Dr. B. R. Ambedkar's writings Federation versus Freedom (1939), Annihilation of Caste (1936), Castes in India: Their Genesis, Mechanism and Development (1918), The Untouchables: Who were they and why they became Untouchables (1948) and diverse collection of secondary sources for the study were also consulted.

Following are some of Dr. B. R. Ambedkar's economic thoughts:

In the London School of Economics and Political Science, Professor Edwin Cannan (1861 - 1935) guided Ambedkar on the working of his doctoral thesis on "The Problems of Rupees". Another eminent economist who influenced Ambedkar was John Maynard Keynes (1883-1946). Keynes' work 'Indian currency and Finance' has been acclaimed as a masterly analysis of India's financial structure and of the country's gold exchange standards. After the second world war Keynes was instrumental to the establishment of the International Monetary Fund (IMF) and the World Bank. He was one of the celebrated economists with a reputation equivalent to that of Adam Smith and David Ricardo in the field of Economics. However, Ambedkar was critical of Keynes' conclusions on the Indian finance and gold exchange standards. Another professor who influenced Ambedkar in the London School of Economics and Political Science was professor Harold Laski (1893- 1950). It seems that Ambedkar was a student of Laski. When Ambedkar read his paper on "Responsibilities of a Responsible Government in India" before the student's union in 1923 Prof. Laski had opined that the thoughts expressed in the paper were of a revolutionary nature. Prof. A. K. Sen has also said, "Ambedkar is my Father in Economics. He is true celebrated champion of the underprivileged. He deserves more than what he has achieved today. However he was highly controversial figure in his home country, though

it was not the reality. His contribution in the field of economics is marvelous and will be remembered forever.

- **Dr.Ambedkar's work on land reforms**

Ambedkar propagated the idea that the urgent problem of landless labourers could be solved only by taking over the uncultivated lands for cultivation and giving it to landless labourers. He emphasised that consolidation of holdings and the tenancy legislations cannot help untouchables who are landless labourers. He advocated collective forms, as they could help them to some extent. He wanted the key and the basic industries to be owned and run by the state. According to Ambedkar, it shall be considered as the key industry and it should be organised on collective basis.

- **Dr.Ambedkar 's struggle for economic justice**

He was no less than the great Indian economist Chanakya who had led a revolt of the slaves and helped install a Shudra dynasty of Mauryas. Likewise Ambedkar became a messiah of depressed classes, for he believed that a nation can never prosper if certain sections of society continue to get exploited, looted through expropriation of the surpluses that they created by their sweat, blood and sacrifices. By his deep understanding of the exploitative chain that gives birth to the economic under classes, he devised strategies for their economic upliftment and for their emancipation from the exploitative. He struggled to bring about an equitable, non-capitalist economic restructuring through mass awakening, reform and democratic movements, as he believed that real economic democracy was a means to transform a nation to a just order. He organized mass movements to eradicate rural poverty. He abolished 'Khoti System' (a system of contractual farming) and 'MaharVatan'. 'The Bombay Money Lenders Bill' was his brainchild as well. He said 'the struggle for economic justice was as important as the struggle for social justice'.

- **Dr. Ambedkar's work on employment**

He was out spoken about his ideas of nation building. He possessed great foresight and his warnings about the future of India ring so true today. In a speech before the constituent assembly he cautioned his fellow legislators against the use of non-constitutional methods of protest, such as civil disobedience and Satyagraha, because they were essentially an anarchic in nature. He rallied against the Indian tendency to engage in hero worship. He was afraid that the people of India would lay their liberation at the feet of someone they worshipped or entrust them with extraordinary limitless powers. He also underlined the importance of creating not just a political democracy, but also a social and economic one. His PhD thesis was inspired to set up for the Finance Commission of India and his works helped a lot in framing guidelines for the RBI Act 1934. He was one of the founders of Employment Exchanges in our country. He played a vital role in establishment of the National Power Grid System, Central Water Irrigation, Navigation Commission, Damodar valley project, Hirakud project and Sone river project. Dr. Ambedkar was educated by the Princely state of Baroda, he was bound to serve it. He was appointed as military secretary to the Gaekwad but had to quit within a short time. Thereafter, he tried to find ways to make a living for his growing family as he was married in 1906 only. He worked as a private tutor, an accountant and established investment consulting business, but it failed when his clients learned that he was an untouchable. (Keer Dhananjay 1971). In 1918, he became professor of political economy in the Sydenham College of Commerce and Economics at Mumbai. Even though he was successful with the students, other professors objected to his sharing the same drinking water jug that they all used. As a result of all this he started his struggle for untouchable equality.

- **Dr.Ambedkar 's work on Agriculture**

Bharat Ratan Dr. Bhimrao Ambedkar was the great architect of the constitution of India. He was one of the great personalities, who made dynamic change in the society. He was also a custodian of social justice and a champion of socialism and state planning Thought. Bharat Ratan Dr. Bhimrao Ambedkar analyzed various social and political problems the thoughts were based on economic dimension. He published three books "The Problem of Rupee", provincial decentralization of imperial finance in British India and East India company administration economic policy. Bharat Ratan Dr. Bhimrao Ambedkar studied economic issue like land reforms, small holding and their remedies, problem of Indian currency, provincial finance and planning. Present time of globalization agriculture growth rates in not also only stagnant but also indicates continuous declining trends. The government has concentrated only on the technical problems and thus ignored institutional. The sub division, land reform and size distribution of ownership holding is the main obstacle in development of agriculture sector. This calls a deep study to accelerate the growth rate of agriculture sector. So India needs to make appropriate change in this agricultural plan. While land reform. Such plan one might find Bharat Ratan Dr. Bhimrao Ambedkar thoughts on agriculture. This paper analyses Bharat Ratan Dr. Bhimrao Ambedkar thoughts on agriculture and current situation in India. The importance of his thoughts is that they are still applicable to India. The productivity of Indian agriculture sector is very low compared to many developed countries and there is need to take measures on the basis of Bharat Ratan Dr. Bhimrao Ambedkar economic thoughts.

- **Dr.Ambedkar 's work on Land Holding :**

Bharat Ratan Dr. Bhimrao Ambedkar was the first Indian economist to examine the problem of sub-division and fragmentation of agricultural land holdings and formulate a very scientific definition of an economic holding. Bharat Ratan Dr. Bhimrao Ambedkar opined that small size of land holding is one the causes of production. Therefore should be consolidation of land holding. The traditional definition of an economic holding was presented as "a chance of producing sufficient to keep himself and his family in reasonable comfort after paying his necessary expenses". It cannot be the language of economics to say that a large holding is economic while a small holding is uneconomic. It is the right or wrong proportion on others factors of production to a unit of land that renders the latter economic or uneconomic. A small term may be economic or uneconomic because economic does not depend upon the size of land but upon the appropriate proportion among all factors including land.

- **Dr.Ambedkar 's work on India's Currency Problems**

Dr. Babasaheb Ambedkar's thoughts has a great impact on current Indian currency system. Under British rule when India Govt. was struggling with falling value of Indian Rupee, Dr. Babasaheb Ambedkar In 1923 wrote "The problem of Rupee, its origin and solution. He focused his studies and research on the condition of Indian currency during British India. He wrote research thesis on it. In his thesis, he argued that the gold exchange standard does not have stability. The developing countries like India can not afford gold exchange standards, and besides this, it also increases the risk of inflation and price rise. He proved with statistics data and reasons how the Indian Rupee has lost its value and hence the purchasing power of Rupee is falling. He suggested that govt. deficit should be regulated and money should have a circular flow. He also suggested more attention should be given on price stability than exchange rate stability. This book eventually lead to the establishment of Reserve Bank of India

- **Dr.Ambedkar 's work on State Socialism and Agriculture:**

Bharat Ratan Dr. Bhimrao Ambedkar propounds the concept of state socialism. This concept envisages the collective farming. With abolition of intermediaries, the state must be the owner of land. The state should distribute these lands to the farms. Farmer should cultivate the farm collectively. The state should supply essential capital to the agricultural sector and the obtained income should be distributed among the farmers. It will lead to solve the problem of agriculture labours. Bharat Ratn Dr.BhimRao Ambedker, one of the multidimensional personalities having great noteworthy contribution in economics.

- **Land Revenue:**

Bharat Ratan Dr. Bhimrao Ambedkar criticized the land revenue of British government. According to him, land revenue system was in against of the interests of poor people of India. Further no justice or equality was there in tax policy. He said that, land revenue was highly oppressive. Bharat Ratan Ambedkar emphasized the point that it was unjust to assess the land point that it was unjust to assess the land revenue on the income. The rate of assessment did not depend on the capacity to pay the tax. The taxable capacity was enhanced with the growth in the income. After independence the government has continued the existing land revenue system in the country. Some states have adopted agricultural income tax, but yet not covered all other states in the country. Agricultural sector may be one of important tax base of the country. It must be covered unified system of taxion of agriculture and non agriculture sector.

Conclusion:

Dr. Ambedkar's was a short life and yet a most remarkable one. He rose up from dust, from being treated worse than an animal to becoming the father of the Indian Constitution. Dr. Ambedkar was truly a multi-faceted personality. A veritable emancipator of Dalits, a great National leader and patriot, a great author, a great economist, a great educationalist, a great political philosopher, a great religious guide and above all a great humanist without any parallel among his contemporary. He was among the most outstanding intellectuals of India in the 20th century. His work in economics is noteworthy. His views deals with public finance and agriculture are landmark in the economics. Ambedkar's commitment was internal stability and he was convinced that only an automatic system based on gold standard with gold currency could achieve this desirable end. He was of view that governments should spend the resources garnered from the public not only as per rules, laws and regulations, but also to see that "faithfulness, wisdom and economy". Intervening in a discussion in the Bombay Legislative Council on October 10, 1927, Dr. Ambedkar argued that the solution to the agrarian question "lies not in increasing the size of farms, but in having intensive cultivation that is employing more capital and more labour on the farms such as we have." Further on, he says: "The better method is to introduce cooperative agriculture and to compel owners of small strips to join in cultivation." Thus Ambedkar thought on public Finance and agriculture has vital relevance and still applicable in current situation of India.

Reference:

- Ahir, D.C. (1990) "The Legacy of Dr. Ambedkar" B. R. Publishing corporation, New Delhi.
- Ambedkar, B. R. (1997) „Caste in India“ – Their mechanism, genesis and Development, Blue in Patrika, India.
- Ambedkar, B. R. (1989) Untouchables and untouchability (Social-Political-Religious) writing and speeches: (Vol. 5), Ed. Dept. Govt. of Maharashtra, India.
- Ambedkar, B. R. (1990) "Who were Sudras?" Writing and Speeches – (Vol. 7), Ed.
- Busi, S. N. (1997) Mahatma Gandhi and Ambedkar Crusader against caste and untouchability, Palak Prakashan, Jalandhar, India.
- Chalam, K.S.(1993)., The Relevance of Ambedkarism in India, Rawat Publications, Jaipur and New Delhi.
- Desai, A. R. (1991) Social background of Indian Nationalism, Popular Prakashan, Hyderabad, India.
- Dr. B. H. Damji & A. P. Jamma (2012) "Dr. B. R. Ambedkar"s thought on agriculture and it"s relevance to current agriculture in India" Review of Research, Vol 1, Issue VI, pp1-4.
- Dr. M. R. Ingle (2009) "Relevance of Dr. Ambedkar"s Economic Philoshophy in the current scenario" International Research Journal, Sep, Vol 1 Issue 12, pp35-36.
- Jatava,(2005), D.R. Ambedkar Code of Conduct, ABD Publishers, India.
- Jatava,(1999) D.R., B.R.Ambedkar A Vision of Man and Morals, ABD Publishers, India.
- Narayan, J.S., Rao, Somasekhar, A., and Audisheshaiah, K. .(1994), B.R. Ambedkar, His relevance Today, Gyan Publishing House, New Delhi.
- Shahare, M.L. (1987). Dr. Bhimrao Ambedkar: his life and work: National Council of Educational Research and Training, New Delhi.

A Study on Consumer Loyalty in Retail Malls during Festivals in Moradabad Region

Monika Shukla
Research Scholar
Dr. S.K. Bhogal
Research Supervisor, SVU ,Gajrulla

Abstract

The retailing part in India has encountered vital change in the past ten years. The dealt with retail industry in India is to grow 25-30 percent consistently and would essentially increment or on different occasions in size by 2012. Retailing is constantly crawling its way towards transforming into the accompanying impact industry. The shopper steadfastness technique is an incredible wonder. The purchase of items or organizations joins different factors that could impact each decision. Buyer faithfulness is progressively many-sided and impressively more huge for retailers today than in past. The objectives of this assessment were to investigate the effects of offers progression mix on customer faithfulness in malls of Moradabad Region and to consider the assortments in these parts transversely over different measurement factors. Mall catch audit was coordinated to examination of offers headway mix on buyer unwaveringness in strip malls of Moradabad Region. The model included 150 unique mall clients. The business headway mix on purchaser dedication were perceived by a structure review and trapped in 5 components of offers progression mix. These business progression mix factors were Lucky by chance offers, Frequent and Warranty Offers, Monetary and Quantity Benefit Offers, Gift and Exchange offers. The assessment will help the executives of strip malls to understand the shrouded arrangements headway factors on shopper dependability of the clients in the malls and help them to make their promoting strategies. Profiling customers by their choice of offers headway mix give logically significant ways to deal with perceive and fathom distinctive customer segments and to concentrate on each bit with progressively drew in publicizing strategies.

Keywords: buyer reliability, bargains headway mix, strip malls, formed retailing

Introduction

Headway is the route toward elevating correspondence to prompt, instigate, remind and sway clients or customers for thing or organization. Progression has three express purposes. It passes on publicizing information to purchasers, customers and members. Headway initiates and convinces the buyer and effects his/her lead to make the perfect move. In this technique the restricted time mix fuses four fixings: 1) Advertising; 2) Publicity; 3) Personal Selling; 4) Sales Promotion. The term Promotion - Mix is used to imply the mix of different kinds of constrained time gadgets used by a firm to pitch and sell its things. It is one of the four pieces of extraordinary mix. Arrangements headways are unequivocal undertakings that are proposed to immediaty influence bargains. Arrangements headway implies various sorts of helpers and strategies facilitated towards purchasers and agents with the objective to convey snappy or fleeting arrangements impacts. Occasions of devices used in arrangements progression consolidate coupons, tests, premiums, motivation behind acquirement (POP) appears, difficulties, limits, and sweepstakes, etc.

A strip shopping center, mall, or mall, is the bleeding edge modification of the chronicled business focus.

The mall is a social occasion of self-ruling retail stores, organizations, and a halting domain, which is considered, created, and kept up by an alternate organization firm as a unit. The common importance of retail and made retailing can be delineated as the show of selling of items and item from a fixed region. A noteworthy piece of the current money related circumstance in India is the improvement of made retail. There has been huge advancement in dealt with retailing business starting late and it is adjusted for much faster improvement later on. Significant present day houses have entered this region and have proclaimed very objective situated future improvement plans.

Customer devotion, a term as regularly as conceivable used in promoting, is an extent of how things and organizations given by an association meet or outflank customer want. Affiliations need to hold existing customers while concentrating on non-customers. Assessing shopper faithfulness offers a hint of how productive the affiliation is at giving things and organizations to the business focus. Buyer steadfastness is assessed at the individual level, anyway it is frequently declared at a complete level. It might be, and routinely is, assessed along various estimations. The standard extents of customer devotion incorporate an audit with a great deal of declarations using a Likert Technique or scale. The customer is drawn closer to survey each declaration and in term of their acumen and want for execution of the affiliation being assessed. Their satisfaction is generally evaluated on a five-point scale.

Literature Review

There is liberal volume of trial work coordinated in the field of offers progression mix, customer devotion and strip malls. Arrangements progression is a uber business in the present centered world for malls. Arrangements headway on customer reliability is set up with goliath proportion of research and effort to remain in the instinctive character for long.

Anselmsson (2006), have made and endorses a conceptualization of mall satisfaction subject to handle contemplates in Sweden. He had seen that Customer satisfaction with a strip shopping center may be viewed as an individual's energetic reaction to singular appraisal of the hard and fast plan of experiences experienced at the mall. In like manner, customer associations with strip shopping center establishments incorporate a wide scope of activities. Researcher had taken 8 components to find the buyer reliability. Moreover, this assessment had furthermore examined whether wellsprings of satisfaction fluctuate in essentialness concerning sexual direction and age, all around two noteworthy elements for retail division. The result was revolved around number of characteristics of strip malls in assessment of buyer devotion. Expert had found that Selection was the most huge factor of buyer faithfulness.

Bromley Rosemary D. F. what's more, Matthews David L (2007), they had explored exceptionally for those wheelchair customers who were not capable discussion about earlier about their shopping foundation in various strip malls and market. Along these lines, this paper was again a looking of customer steadfastness anyway in disengaged part or measurement region.

B. Kamaladevi (2010), they have found the endurance of fittest and snappiest is the mantra of the present business game. To fight viably around here time, the retailer must focus on the customer's acquiring learning. To manage a customer's inclusion, retailers should appreciate

what "customer experience" truly suggests. Finally; in end there are some pivotal centers: Customer Experience Management isn't only an old idea in another wrapper. The result was that there are directly a greater number of organizations and things available than at whatever point already, yet customer devotion are on a plunging slide.

Goff C. Brent, Boles S. James, Bellenger N. Danny and Stojack Carrie (1997), they have basically dissected the one non thing related create on customer satisfaction with a critical retail purchase. Researcher have acknowledged that the shopper devotion and their thing appraisal depend upon thing execution just as on the collaboration with the salesman's and their undertakings, they have furthermore revolve around that salesperson is as of now the crucial need of retail division for getting the buyer dedication. Finally; they have gathered that, if a firm is to be viable, it must understand what customers envision from arrangements personnel in their market, and guarantee that their laborers meet or, shockingly better, outperform those wants.

Goyal B.B. what's more, Aggarwal Meghna (2009), Ghosh Piyali, Tripathi Vibhuti and Kumar Anil (2010) Ha Hong-Youl and Muthaly Siva (2008), Joseph J., KR Cronin, Brady K. JR Michael and Hult M. G. Tomas (2000) and much more researchers have done arrangement with arrangements progression mix, malls and purchaser dependability. With the help of these examines we have found a couple of components of offers progression mix, which we have used in our investigation to find the effects of offers headway mix on buyer reliability in Moradabad city.

Objectives of the Study

- To recognize the factors of offers progression plots on purchaser devotion with reference to malls.
- To asses the effects of offers progression plots on shopper reliability with reference to various measurement factors.

Hypothesis

- To know the effects of eighteen arrangements constrained time factors on purchaser reliability, the going with invalid and elective hypothesis have bound:
- Null Hypothesis H0: There is no gigantic impact or complexity in mean satisfaction level of customers because of various arrangements unique parts as shown by various measurement factors.
- Alternative Hypothesis H1 There is vital impact or complexity in mean satisfaction level of customers in light of various arrangements constrained time parts as shown by various measurement factors.

Research Methodology

Data Sources

To design the sorted out review the 18 things of shopper dedication are taken from wide examination of offers composing viz. journals of exhibiting, all inclusive journals of publicizing, distinctive business review and advancing the officials magazines, etc.

The basic data was assembled from 150 customers of different strip malls, spreading across over Indore city and having more than 20 yrs age and starting at now have purchased things from any malls with experienced of a business progression factors

Definition of Variables

After an expansive examination of offers composing following arrangements headway factors are considered for this assessment: Buy one Get One Offers, Discounts/Cash Discount, Free Gifts, Sampling, Bonus/Extra, Refunds/Cash Back, Coupons, Exchange offers, Stock Clearing Sale, Lucky Draw, Scratch Cards, Anniversary Schemes/Festival Schemes, Annual Rating Points on Permanent Cards, Contests, Catalog, Product Warranties, Weekly/Monthly offers and Spots/Movements offers

Beside these 18 components, five obvious elements are also used to know the effects of every one of the 18 arrangements headway factors on the shopper reliability. The five Categories have decided for the examination are as - Age, Sex, Education, Occupation and Income

Sample and Design

The arrangement of the present examination is expressive similarly as trial in nature. The essential purpose behind the examination is to find the impact of offers headway mix on purchaser faithfulness in strip malls in Moradabad Region. The model size is 150 customers. The model included the respondent more than 20 years age and having experienced of shopping from strip malls and moreover bargains progression mix.

The self-sufficient components incorporates guidance, age, sex, occupation, pay and zone. The entire general has been confined as:

- Age: The age social occasion were 20-30, 30-40, 40-50 and at least 50. This was maintained in control to cover most prominent degree of universe, assembling in class break helped in straightforward grouping.
- Education: It contained to choices - UG, PG and Others.
- Occupation: It contained the choices of - Service, Business, Student and House mate.
- Sex: It contained the choices of-Male and Female.
- Income: It contained the choices of-1-2 Lacks, 2-3 Lacks, 3-4 Lacks and 4 Lacks or more.

Data Collection

The overview is part into three sections. First zone deals the measurement factors, Second portion related to 18 arrangements headway factors. The survey had given five point scales rating Highly Dissatisfied to Highly Satisfied and close to burdens one to five, where five is the most raised position. The data accumulated from customer of different malls later arranged dependent on age, preparing, sex, compensation, Location and occupation.

Tools for Analysis

Factor assessment and ANOVA test associated with breaking point the parts to find there feasibility and variances. The quantifiable pack like SPSS (interpretation 17) used, MS - Excel in like manner used for examination. The degrees of criticalness were attempted of five percent level.

Factor Analysis

The normal varimax game plan isn't procured direct from an association lattice. It is gotten by turning various sorts of factor answers for the varimax structure. In the present examination it was seen as charming to use the most raised factor stacking establishment to pick customer devotion joined into arrangements headway mix and all social event of components. This establishment was reliably used in the factor assessments did on the hard and fast case of the examination.

ANOVA Test

The made components which have with factor assessment by using SPSS programming (17.1) interpretation, with the help of these components we have associated ANOVA test by using SPSS software(17.1) to check the change among different elements. Tukey Karner different connection has been used to get the mean differentiation and separating the results. It has been associated on 5% level of criticalness, to test the vacillation between different measurement factors on arrangements headway mix and over all buyer faithfulness in strip malls. (tables on next page)

Gadgets for Data Analysis: Data was inspected using quantifiable strategies (at 5% level of centrality), ANOVA.

Table 1: ANOVA Test Formula

variation	Squares	Freedom	Mean Squares	of value of F	value of F
Between samples	SSB	c-1	MSB= SSB/c-1	F=MSB/MSW	
Within samples	SSW	n-c	MSW=SSW/n-c		
Total		n-1			

Table 2: ANOVA Test Measurement with Computed Value to Table Value

Case	Interpretation
a) If the computed value of P is less than ?	The difference in the variance is significant and it could not have arisen due to fluctuations of random sampling and hence reject H_0
b) If the computed value of P is greater than ?	The difference in the variance is not significant and it could not have arisen due to fluctuations of random sampling and hence accepts H_0

Tools for Data Analysis:

Data was analyzed using statistical techniques (at 5% level of significance), ANOVA.

Reliability Test

After the testing of survey we have given faithful nature of whole data a shot all parts. Immovable quality test has been made on whole 150 models for testing the trustworthiness of customer faithfulness. With the help of Coefficient (Cronbach Alpha); we have attempted the resolute nature of components. Unflinching nature of 150 models for shopper dedication has Cronbach's Alpha (.862) (see Annexure 1) which is eminent, as shown by different speculation of steadfastness regard above 0.6 is appropriate, low a motivating force underneath the 0.5 proposes that unflinching quality may not be fitting. No things have been removed from the survey.

Results and Discussion

Factor examination was grasped to get the business progression mix on buyer steadfastness in strip malls. (Annexure 2) It plots the outcomes of the factor examination which was run using the Principal Component Approach with a varimax transformation.

Bartlett's preliminary of sphericity and Kaiser-Olkin (KMO) measure are grasped to choose the fittingness of educational gathering for factor examination. High regard (between 0.5 to 1) of KMO demonstrates that the factor examination is appropriate, low a motivation underneath the 0.5 proposes that factor

examination may not be reasonable. In this examination, the delayed consequence of Bartlett's preliminary of sphericity (0.00) and KMO (0.763) demonstrates that the data are reasonable for factor assessment.

In this examination, factor assessment was done in two stages. In stage one; known as the factor extraction process, objective was to recognize what number of parts to be isolated from the data. Using head fragment examination, 18 things were evacuated by four parts. Simply the factors having dormant roots or eigen regard more unmistakable than 1 were seen as basic; all components having eigen regard under 1 were seen as insignificant and were discarded. All the five factors together accounted 61.2% of the total contrast.

In the resulting stage, all of the components were deciphered and checked. Things having component stacking more than 0.5 were consolidated into the comprehension. Continuously unmistakable depictions of the segments are shown in the accompanying zone.

Impact of Demographic Factors on Customer Satisfaction concerning Sales Promotion Mix As discussed more than, four arrangements progression mix have been removed (Annexure 2) with the help of factor assessment and ANOVA was used to consider the assortment in the business headway mix on buyer devotion transversely over measurement factors. The four components are dense in the Annexure 2.

Factor 1: Lucky by chance offers

(Annexure 2)

The factor appraises the karma based plans and festivity offers from different arrangements progression mix on shopper faithfulness of Moradabad Region's customers in our model. Customers who score high on this factor are very karma insightful. They are aware to endeavor their karma and get best advantages for the things they buy. They by and large check and investigate the blessed and watchman offers before getting the things in the strip malls. They even go to more than one store to get best watchman offer for the thing they buy. Annexure 2 exhibits that; the most vital stacking (0.880) thing in this factor is "Scratch Card". Anselmsson Johan (2006), perceived the eight components for shopper faithfulness in Sweden, factors were assurance, air, convenience, salespeople, refreshments, territory, constrained time activities and promoting approach. With the help of these components, they had found the effects concerning measurement factors, anyway the obsession was not on arrangements progression mix.

(Annexure 3 and Annexure 4) It has revealed that the centrality estimations of F for sex, age, guidance, pay and occupation all are progressively conspicuous then 0.05. So they don't have basic impact on lucky and gatekeeper offers in Moradabad Region. People are next to no fascinated by lucky or by chance offers, they just need soured offers and prizes.

Factor 2: Frequent and Warranty Offers

(Annexure 2)

This Factor reflects the nonstop offers estimations of buyer reliability concerning bargains progression mix of Gwalior and Moradabad city's in our model. Indore customers consider spot advancement offers and certifications of the thing while at the same time purchasing the things in strip malls. It is critical for them to take best. Customers who score high on this factor see the new offers every week and they are anxious to attempt exceptional undertakings to pick things with the most flawlessly awesome step by step offers. Annexure 2 demonstrates that the most raised stacking (0.788) thing in this factor is " Weekly/Monthly Offers"

Erasmus Alet C. additionally, Lebani Kethuswegape (2008), they have used arrangements progression mix yet in limited zones like Visa, immutable card, total 15 factors were acknowledged related to bargains headway mix and have found that store card was much useful for customers in age clever rather than various arrangements headway mix. It (Annexure 3 and Annexure 4) demonstrate the effects of various measurement variound thatables on buyer unwaveringness as shown by Moradabad Region. It (Annexure 3) demonstrates that the

gigantic estimation of F for age, guidance, occupation and pay all are more noticeable than 0.05 in Moradabad city. In this manner, Moradabad city's customers don't have important impact on normal and assurance offers in regards to these measurement factors. Simply Sex has influence on standard and assurance offers in Moradabad city. In our model in Moradabad city female (mean = 11.4) are more insightful in unremitting thoughts than male customers, who almost less use this sort of offers. (Annexure

4) shows that the tremendous estimation of F for age, sex, preparing, occupation and pay all are more imperative than

0.05 in Moradabad Region. Thusly, Moradabad Region's customers don't have colossal impact on progressive and assurance offers with respect to all components, they don't trust on assurance or any kind of on the spot offers

Factor 3: Monetary and Quantity Benefit Offers

(Annexure 2)

This factor estimates the cash related and sum bit of leeway offers which gives purchaser reliability to Jabalpur and Gwalior's customers in our model. Customers who score high on this factor know about sum and cash and would lean toward not to put it all out there, they just need a reward or markdown office for getting satisfaction. They for the most part recognize and use such sort of offers which give extra or cash back office. Despite for getting this kind of customer dedication they go to even more then one store, to give indications of progress cash back or financial or sum offers. Table 3 shows that; the most critical stacking (.851) thing in this factor is "Limits/Cash Back".

It (Annexure 2 and Annexure 3) shows the effects of various measurement factors on shopper unwaveringness in comprehension to Moradabad Region. It (Annexure 3) demonstrates that the centrality estimation of F for age sex, guidance, occupation and pay all are more unmistakable than 0.05. Along these lines, Moradabad city's customers don't have basic impact on budgetary and sum favorable position offers concerning these measurement factors. (Annexure 4) demonstrates that the significance estimation of F for age, guidance, occupation and pay all are more essential than 0.05. Along these lines, Moradabad Region's customers don't have colossal impact on cash related and sum favorable position offers in regards to these measurement factors. Simply sex has influence on cash related and sum bit of leeway offers in Moradabad Region. In our model in Moradabad Region male (mean=7.6), are progressively perceptive to take cash related or sum benefits in strip malls than any female social event.

Factor 4: Gift and Exchange offers

(Annexure 2)

This factor appraises the Gift and Exchange offers, which gives buyer devotion to Jabalpur and Gwalior's customers in our model. Customers who score high on this factor know about gift and exchange offers and they can even change their brands or strip malls for getting gift or exchange offers, they basically need enrichments or exchange on same thing for getting satisfaction. They for the most part recognize and use such sorts of offers which give enrichments. Despite for getting this kind of buyer unwaveringness they go to even more then

one store, to give indications of progress gifts and exchange offers. Table 3 demonstrates that; the most imperative stacking (.820) thing in this factor is "Stock Clearing Sale".

Jing Bing, Zhongwen (2008), have endorsed recently cost related arrangements progression mix, and recognized its contact with respect to measurement factors, found understudies were esteem sensitive. It (Annexure 3 and Annexure 4) demonstrate the effects of various measurement factors on purchaser devotion as shown by Moradabad Region. It (Annexure3 and Annexure 4) demonstrate that the basic estimation of F for age, sex, guidance, occupation and pay all are more critical than 0.05. Therefore, in both the city's customers don't have imperative impact on Gift and exchange offers strip malls. In both the city's customers are not favoring insightful. They don't have direct to purchase the things because of endowments and exchange offers open in strip malls.

Conclusion

The target of this examination were to investigate the customer reliability concerning bargains progression mix in strip malls and to consider assortments in the shopper faithfulness with respect to bargains headway mix transversely over different measurement factors.

Following the examination of Anselmsson Johan (2006), Bromley Rosemary D. F. also, Matthews David L (2007), Goff C. Brent, Boles S. James, Bellenger N. Danny and Stojack Carrie (1997), Sproles and kendall (1986), an undertaking was made to profile the customer steadfastness in malls. They all have recognized various segments related to bargains headway mix; from which we have picked 18 factors of offers progression mix and endeavored to check the purchaser devotion in strip malls. With the help of factor assessment we have found four new factors are karma by some occurrence, progressive and assurance cash related and sum advantage, favoring finally exchange offers.

Besides, this investigation exhibits that the typical customer of Moradabad Region in our model was not very arrangement headway mindful, anyway sexual direction sharp they are extremely perceptive about specific sorts of offers progression mix factors. It is found that; female, those are penniless or free are continuously aware about arrangements progression which is related to on the spot offers in strip malls for getting buyer dedication in Moradabad city. In Moradabad Region, folks are aware yet just in cash related and sum benefits. As a rule we have found the end that Moradabad Region's customers are almost no careful or may be insightful about arrangements progression mix, those are appropriate in strip malls. Shopping is engaging activity for them. Customers are most recreational in their shopping anyway they are not bargains progression aware, they need combination of things yet with quality and incredible organizations. They are coming malls for acquiring things yet for getting purchaser unwaveringness, they don't dismantle in to a business headway mix, which is open in strip malls.

Limitations

There are a couple of constraints that warrant future research. The examination has been coordinated in Moradabad Region of Uttar Pradesh, India. The outcome of the proportionate, at whatever point coordinated in other bit of the country may change. It is in light of the fact that a

country like India has geographically, monetarily, socially and socially through and through various to the extent areas. This differentiation is excessively critical to ever be dismissed. Incredible and terrible perspective of customers or respondents that was experienced during concentrate that would have affected their responses. Normally all customers were showed up in surge because of their clamoring timetable so survey also would have influenced their response.

Results rely upon calculation and this estimation relied upon data those I have assembled, because of different perspective and state of the respondents have moreover influenced the result in calculative way; in any case, a couple of results which I had felt during aggregation of data that customers are destroyed in to the business headway mix and strip malls, paying little respect to whether they are purchasing the things or not because of various reasons like-spending plan or family weight, etc., those results; I can't learn and describe in numerical terms. City air have furthermore influenced the respondent's response; because of restricted social condition respondents were felt ungainly to contact with cloud individual and give the response of a study; so this explanation have in like manner affected the results. The model contained 150 unique strip mall clients. The little model size is furthermore slip-up slanted.

References

- Chunawalla, S.A, Sethia, K.C. (2008). Foundation of Advertising theory & practice. Himalya publication House Delhi, 7th revised edition, 45-55&75-95.
- Chhabra, T.N., Grover, S.K. (2005). Marketing Management. Dhanpat Rai & Co. Pvt. Ltd., Third revised edition, 15-20.
- Krisnawamy, K.N., Shivkumar, A. & Mathirajan M. (2006). Management Research Methodology. Pearson Education, 20-25.
- Kotelr, Philip, Keller, Kevin Koshy, Abraham (2008-09).
- Jh Mithileshwar Marketing Management: a south Asia prospective. Pearson Education Delhi, 13th edition, 25-30 & 45-50.
- Kotler, Philips, Gray, Armstrong (2008). Principle of Marketing. Pearson Education 12th edition Delhi, 450-460.
- Kotler, Philips (2008). Marketing Management. Pearson Education Eastern economy Delhi, 13th edition, 56-62.
- Kothari, C.R, (1997). Research methodology. Second edition New Age International Publisher, Jaipur, 15- 25, 55-60 &76-80.
- M, Guiltinan (1996). Marketing Management: Strategies and Programs. Mc GrawHill/Irwin, 15-23.
- Nair, R. Suja (2008). Consumer Behavior. Himalaya Publication House Delhi, 12-18.
- Newman, J. Andrew & Cullen, Peter (2002). Retailing Environment & Operations. 45-48.
- Shrivastava, K.K., Khandai, Sujata (2002). Consumer Behavior in Indian Context. Mcgraw Hill Delhi, 15-20.
- Anselmsson, Johan (2006). Sources of Customer Satisfaction with Shopping Malls: A Comparative Study of Different Customer Segments. Int. Rev. of Retail, Distribution and Consumer Research, 16, No. 1, 115 - 138.
- Eskildsen, Jacob & Kristensen, Kai (2008). Customer satisfaction and customer loyalty as predictors of future business potential. Total Quality

- Management & Business Excellence, Jul/Aug, Vol.19 Issue 7/8, 11p, 1 Diagram, 3 Charts, 2 Graphs, ISSN No. 1478-3363, 843-853.
- Ellickson, Paul B. & Misra, Sanjog (2008). Supermarket Pricing Strategies. Marketing Science Vol. 27, No. 5, September-October, ISSN 0732-2399, 811-828.
- Goff, C. Brent, Boles S. James, Bellenger N. Danny & Stojack, Carrie (1997). The Influence of Salesperson Selling Behaviors on Customer Satisfaction with Products. Journal of Retailing, Volume 73(2), ISSN No. 022-4359, 171-183.
- Goyal, B. B. & Aggarwal, Meghna (2009). Organized Retailing in India- An Empirical Study of Appropriate Formats and Expected Trends. Global Journal of Business Research, Volume 3, No. 2.
- Ghosh, Piyali, Tripathi, Vibhuti & Kumar, Anil (2010). Customer expectations of store attributes: A study of organized retail outlets in India. Journal of Retail & Leisure Property, Vol. 9, 1, 75-87, Macmillan Publishers Ltd. 1479-1110.
- Hekman, David R., Aquino, Karl, Owens, Bradley P., Mitchell, Terence R., Schilpzend, Pauline, Leavitt, Keith (2010). An examination whether and how racial and gender biases influence customer satisfaction. Academy of Management Journal, Apr, Vol. 53 Issue 2, 27p, 3 Diagrams, 6 Charts ISSN No. 0001-4273, 238-264,
- Hong, Youl Ha & Muthaly, Sivahe (2008). Effects of Advertising Spending on Satisfaction: A Comparison Study of Bank and Supermarket Industries. Journal of Current Issues & Research in Advertising, Fall, Vol. 30 Issue 2, 11p, 1 Diagram, 4 Charts, ISN No.1064-1734, 87-97.
- Hiu, A, Siu N, Wang C. & Chang, L. (2001). An Investigation of Decision-Making Styles of Consumers in China. The Journal of Consumer Affairs, Vol. 35(2), 326-345.
- Kamaladevi, B. (2010). Customer Experience Management in Retailing. Business Intelligence Journal - January, Vol.3 No.1.
- Patel, V. (2008). Consumer Decision Making Styles in Shopping Malls: An Empirical Study. New Age Marketing: Emerging Realities, Excel Books, New Delhi, 627-637.
- Sproles, George B. and Kendall, Elizabeth L. (1986). A Methodology for Profiling Consumers' Decision-Making Styles. The Journal of Consumer Affairs, Vol. 20(2), 267-279.
- Available at:- <http://www.ebscohost.com/> (Access date:10 Jan 2011)
- Available [http://www.indianmba.com/Occasional_Papers/OP95/ op95.html](http://www.indianmba.com/Occasional_Papers/OP95/op95.html) (Access date June 15, 2009).
- Available at: - [http://www.scribd.com/.../Project- Report-on-Buying-Behavior-of Consumers- Towards-Indigenous-Products](http://www.scribd.com/.../Project-Report-on-Buying-Behavior-of-Consumers-Towards-Indigenous-Products) (Access date June 16, 2009).
- Available at:-<http://www.eurojournals.com/ejsr.htm>(Access date June 16, 2009).
- Available at: - <http://www.indiamba.com/>(Access date July 15, 2009).

EFFECTIVENESS OF MICRO-FINANCE IN SUSTAINABLE RURAL DEVELOPMENT - A STUDY IN GADCHIROLI DISTRICT

Dr. Sandeep R. Pipare

B.D.S., M.B.A.

M. Phil(Comm.), Ph.D. (MGT.)

Dr. Niyaj S. Sheikh

B.Sc., M.B.A., M.L.S.,

Abstract

Women in India have been oppressed culturally, socially, economically and politically for centuries. They are exploited at home, in the families, in the society and in the country. The core of the problem is that they shoulder a number of responsibilities, but they are not given adequate participatory or decision making power in the family or in the society. Women can gain such power, if their economic status, cultural and social status improves. Such kind of overall improvement of the power is known as women empowerment. The empowerment of women is one of the central issues in the process of development of countries all over the world.

Keyword: Culturally, Socially, Economically and Politically

Introduction

The concept of micro-credit also exists in every society in one form or other towards the microfinance, the concept was first developed by Jonathan Swift in 1700 in Ireland with the actual view is to bring out the various financial services to the doorsteps of those neglected rural poor by the banks and by establishing the 'Irish Loan Fund System' through provisions made of short-period without the collateral security.

In the 1800s various Credit Co-operatives have also begun to emerge in Europe and to assist the rural people to break out their dependence made on the money lenders and also to improve their financial conditions. The modern concept of micro-finance can also be traced out at the end of the II World War in the mid of the 20th century.

The microfinance concept was present in India about two to three millennium ago, even before the development made of microfinance in Ireland and Germany. There are at least such 03 examples of indigenous finance made of great historical depth in India: moneylenders, chit funds or say rotating savings and credit associations (ROSCAs), and even the merchant bankers.

Review of literature

²**Shuchi L. (2008)** The study was undertaken on Role of Microfinance in women empowerment in Ghaziabad District. It was found that 88 % of the respondents reported that poverty level has reduced by participating in microfinance programme as it has helped in increase in income. More than 96% of them reported that they play an important role in decision making in the family which is an economic factor of an economic empowerment.

³**Batliwala and Srilatha**, opine that, **Limited Access** “Women have comparatively less control over such resources than men. Women’s subordinate position is perpetuated and reinforced by their limited access. While it is true in relation to those who own productive assets, Women thus get doubly marginalized - by virtue of being poor and being women. Unless and until women are empowered to fully participate in national programmes and projects they will not be able to challenge patriarchal ideology and transform the structures and institutions that reinforce and perpetuate gender discrimination and social inequality.

Research Methodology

The type of research design followed for the study will be **Exploratory Research**. When the purpose of research is to gain familiarity with a phenomenon or acquire new insights into it in order to formulate a more precise problem or develop hypothesis, the exploratory research comes in handy. If the study happens to be too general or too specific, hypothesis cannot be formulated. Therefore need for exploratory research is felt to gain experience that will be helpful in formulating relevant hypothesis for more detailed investigations.

Objectives of Study

The present study is undertaken with the following specific objectives:

- To study the awareness of members on micro finance through SHG in Gadchiroli district.
- To identify improvements in the living standards, empowerment, capacity building and managerial abilities of the rural women in Gadchiroli district.

Hypothesis

Hypothesis is the *proposition* as statements about the observable phenomena in the research study that may be judged as *true* or *false*. The research process begins & ends with the hypothesis. It is core to the entire procedure & therefore, is of the utmost importance. A hypothesis can be formulated in several ways yet it always performs the basic function of predicting the final outcome of the investigation.

H0: “Political Empowerment of women have been unchanged after joining SHGs”

Data analysis

To study the hypothesis H0 “Political Empowerment of women have been unchanged after joining SHGs”, paired sample t test is applied on variables of political empowerment like voting rights to women participants, power to utilise the voting power and opportunity to participate in political program and following results were obtained.

Paired Samples Test

	Paired Differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Enjoy Voting Rights before joining SHG - Enjoy Voting Rights after joining SHG	-.41000	1.87539	.18754	-.78212	-.03788	-2.186	99	.031
Pair 2 Have Power to utilize the Voting power before joining SHG - Have Power to utilize the Voting power after joining SHG	-.36000	1.57967	.15797	-.67344	-.04656	-2.279	99	.025
Pair 3 Opportunity to participate in Political program before joining SHG - Opportunity to participate in Political program after joining SHG	-.20000	1.77525	.17753	-.55225	.15225	-1.127	99	.263

The above table shows that:

- Pair 1 studies the satisfaction on voting rights of women participants before joining and after joining SHG, where significance value of paired sample t-test obtained in 0.031 which is less than the alpha value of 0.05 and hence it is concluded that women participants have started enjoying their voting power after joining SHG.
- Pair 2 studies the satisfaction on power to utilise voting rights of women participants before joining and after joining SHG, where significance value of paired sample t-test obtained in 0.025 which is again less than the alpha value of 0.05 and hence it is concluded that women participants have started utilising their voting power after joining SHG.
- Pair 3 studies the opportunity of women participants to participate in political program before joining and after joining SHG, where significance value of paired sample t-test obtained in 0.263 which is more than the alpha value of 0.05 and hence it is concluded that the situation of women participants with respect to participation in political programs have not changed even after joining SHG.

This it is concluded from the above analysis that in most of the cases the political situation of women participants have changed after joining SHG and hence null hypothesis i.e. Political Empowerment of women have been unchanged after joining SHGs is rejected.

Findings

1. The SHGs women of other age group are also taking Interest, Motivated and joining the SHGs knowing the benefits available as the age of 12% respondents was Less than 25 years however the respondents between 25-40 years and above 40 years are 44% each.
2. From the study overall observation point out that the majority of the educational experience of 44% of the respondents was more than 10 years are availing the Microfinance loan compare to other range of experience as considerably low in percentage.
3. Majority of the respondents i.e. 72% had more than 5 members in their family this revealed that majority of the SHG member having dependent and Independent members and chances of saving is very less.

Suggestions

1. As SHG members don't have liquid cash and savings for future contingencies at all they should seriously look into that and attend the training sessions conducted by various groups, organization and government welfare schemes.
2. Majority of 52% of the respondents each said they face the problem of insufficient co-operation from co-group members as well as problem of corruption of Government officers. They should address to competent authority or Grievances Committee highlight the point as new government having transparent policy towards Indian citizen.
3. The regular meetings of SHGs enable the poor women to participate in social/cultural activities which improve their social empowerment.

Conclusion

Microfinance (SHG-Bank linkage program) schemes have satisfactory conditions and many respondents have provided positive feedback regarding the schemes. Women participation under SHG have been obviously created great impact upon the standard of living of poor women and empowered them in not only as individual but also as member of family at various level of community and society as whole. SHGs have emerged as community institutions through which formal sector building system reaches the rural households which are earlier considered as unworthy of the bank lending. SHG-bank linkage offers triple benefits to banks. In specific there is better improvement in Increase in savings and income , Participation in political activities,, Making wise decisions, cautious while utilization of money , Poverty alleviation ,Self-Confidence, Political awareness, Contesting in Elections, Leadership qualities, open up ,Social Status and Involvement, Gaining Voice, Mutual Help & Support. At last SHGs and Bank linkage programme developed by NABARD provide only savings and credit services but this helps will further lead to the better empowerment of women through provide Technology support, capital funding and marketing support on SHG bank linkage programme.

References:

1. NABARD Financing A Self Help Group, A reference, NABARD, Bangalore 2015
2. Teli Ravindra B., "Microfinance through Self Help Groups in India, performance, problems and remedies", Indian Cooperative Review, Vol. 48, No. 1, July, 2010.
3. Vijayalakshmi R., "Impact of Self Help Groups on empowerment of women in Pondicherry Region", Pondicherry University, Pondicherry, May, 2003.
4. Sivamurugan C., "Impact of Self Help Groups on income, savings, assets and occupational pattern in Tamil Nadu", Social Welfare, September, 2008.
5. ARCHANA SINHA, 2005, "Micro Finance for Women Empowerment"- Kurukshetr
6. BHART DOGRA, 2002, "Women Self Help Groups Kindling sprit of Entrepreneurship" - Kurukshetra, 50: (3): -25-31.

A DETAILED STUDY ON IMPACT OF LABOUR WELFARE MEASURES ON EMPLOYEESATISFACTION

Dr. Mrs. Pratibha M. Siriya

Associate Professor, HOD & Vice Principal

Dr. Ambedkar College, Deekshabhoomi, Nagpur

M. Com, M. Phill, Ph.D. LLB, B.A.

Abstract

The Indian industrial worker has often been condemned as lazy and inefficient, but as pointed out by Bombay Textile Labour Enquiry Committee, "it is axiomatic that in all pursuits a high standard of efficiency can be expected only from persons who are physically fit and free from mental worries i.e. only from persons who are properly trained, properly housed, properly fed and properly clothed.

If we look into the conditions of the working class in India, it could find that they have to work for long hours in unhealthy surroundings, and during their spare time. In a welfare state, the community at large recognizes the collective responsibility towards its weaker or less fortunate members and takes definite action to assist them. The state began to realize its social responsibilities towards weaker sections of the society.

Keyword: Community, Society, Organizations, Labour Welfare

Introduction

The Indian economy has taken several efforts in this context and has committed to establish a socialistic society as labour welfare. Industries are having major focus on the activities related to human welfare. The industry believes that if the employees are satisfied then definitely it will succeed. Hence in this regard the select cement industry provides various facilities for the employees such as safety of the employees where they strictly adhere to the rules and follow all the health and safety measures and security of the employees especially taken care of. As education is the base of any society hence the welfare programs for industrial workers are introduced as it would provide the employees with the opportunities of proper training and acquisition of skills and techniques.

Welfare work gets well the relations between employees and persons, companies giving work to another. organizations give well-being facilities to their employees to keep their guiding reason levels high. Human resource department has to identify and assign the job to that individual according to it. Which helps the organization and the individual to flourish in their respective goals. In case of workers death the compensation is then provided to the workers family. Under Employee State Insurance Act 1948, an insured person in the select cement industries is entitled to receive benefits such as medical benefit, sickness benefit, maternity benefit, disablement benefit, dependents benefit, funeral benefit, etc.

Review of literature

Kimberley Ryan (1993) in their article entitled "What You Need to Know Now about Accounting for Post employment Benefits" state that SFAS 112, Employers' Accounting for Post-employment Benefits, is the culmination of the FASB's 13 year project to address employers' accounting for pensions and other employee benefits provided after employment.

Grover Chris (2003) has explored and wish to create new labour's welfare reform program which will be reserved labours and that would be able to managing economic minor fluctuations. Particularly stated that labours are so cheap for capital to employ through various direct and indirect Financial incentives and requiring more benefit dependent groups to compete for paid employment.

Research Methodology

Type of research

The type of research design followed for the study will be **Exploratory Research**. Exploratory research is felt to gain experience that will be helpful in formulating relevant hypothesis for more detailed investigations.

Data Source

Primary Data Source

The actual information will be received by the researcher for study from the actual field of research. The data will be obtained by means of questionnaires and schedules. In some fields primary data will be collected through interview and observation methods. The observation method, for collecting primary data, will be both participant & non-participant. They will be called primary data because they will be attained by the researcher from the field directly and for the first time.

Secondary Data Source

Secondary data will be attained indirectly. The researcher will not attain them directly. Such data will be attained from published and unpublished materials. Secondary data will be gathered from information collected from the individuals and stores through personal diary's, letters and survey documents etc. The secondary data again, will be gathered through two types of sources. The first source will be the personal documents such as diaries, letters, photographs etc. the other source will be the public documents such as manuscripts, reports of surveys by private organisations records, books, and various information's published in newspapers and magazines. The researcher will collect some data from journals, souvenirs, magazines etc. of national & international cadre.

Objectives of Study

1. To identify the attributes of welfare measures leading to employee satisfaction.
2. To evaluate the relationship between labour welfare measures and employee satisfaction.

Hypothesis

H0: There is no relationship among the satisfaction levels of the employees belonging to different socio-economic profiles towards statutory labour welfare measures.

Findings:

1. labour welfare measures in the select cement industries, majority of the respondents are satisfied (32%), followed by neither satisfied nor dissatisfied (27%) and highly dissatisfied (20%). 21% of the respondents are dissatisfied towards statutory labour welfare measures.
2. There is no significant relationship among the people who responded belonging to different (males or females), age groups, educational status groups, monthly (money paid for working) groups, groups, varied (length of time at work or in power/right to permanent employment) of experience, nature of employment, and cement businesses towards the law-related labour welfare measures.
3. Responded's age, educational status, monthly salary, length of experience and number of dependants have no significant effect on their towards law-related labour welfare measures.
4. The consistency in the satisfaction level is high among male labour respondents, belonging to the age 40-50 years.
5. 96% and 4% of the people who responded are aware and partially aware (match up each pair of items in order) about the labour welfare measures
6. There is no significant relationship in the satisfaction level of the respondents belonging to different age groups, educational status groups, monthly salary groups, varied tenures of experience, nature of employment, and cement industries towards the nonstatutorylabour welfare measures.

Suggestions

1. The line managers of the select cement industries should formulate training modules and such modules should get the consent of the management for implementation.
2. The Safety Committee shall educate the employees about their responsibility during the hazardous situations.
3. Provision of rest and lunch rooms helps to reduce fatigue. Rest rooms are provided so that workers may relax during their breaks for rest or meal.
4. The cement industries should voluntarily bear the cost of the purchase of sports materials, books, journals, computer games, etc. Competitions may also be conducted.

5. Since management and the cement industries don't have knowledge in academic discipline, they can prefer any private entrepreneur to run a higher secondary school in the cement industries campus for the betterment of the children of the workers.
6. The departmental heads must identify the dynamic employees and their groups and appreciate them by giving suitable rewards, increment, special pay, family tour, extra leave, holiday home, get together with their family, appreciation letters, highlighting their good work amongst other employees on special occasions, etc.

Conclusion

The respondents have problems with the labour welfare measures and suggest measures like quality first aid appliances, facilities for training and education, adequate leave travel allowance, facilities for career advancement, adequate social security measures, maintenance of rest and lunch room, measures for control and reduction of stress, improving the standard of the canteen, adequate sports and recreational facilities, reasonable benefits for dependants, and adequate production incentives to improve the standard of labour welfare measures in the select cement industries . If this study provokes the people concerned to take some positive measures in order to improve the standard of labour welfare measures, the researcher will feel amply rewarded.

References:

1. Dr .k lalith&T.priyanka, "A study on employee welfare measures with references to IT industry,volume2,issue7, ISSN2349-4476, international of engineering technology management &applied science, www.ijetmas.com
2. Dr. R.Santhanakrishnan&Dr.M.Rajrajan[2015] „A study on labor welfare measures &programmes towards transport corporation limited", International journal of world Research management, volume 1, issue xx, ISSN:2347-937x, www.major, com
3. K. Logasakthi&kRajgopal,[2013] "A Study on chemical industry health, safety &welfare measures the view Salem region, volume1,issue1, international journal of research business management, www.citeseerx, ist,PSU,edu
4. KeerthisriyaA.Dr. panatualmuraliKrishna,[2014] "A study at penna cement industries limited tadipatri, ISOR journal of business and management,volume16, issue3, ISSN:2319-7668,www.its journals, org

**EVALUATION OF BIOCHEMICAL AND HISTOCHEMICAL CHANGES
FOLLOWING THE COMBINED TREATMENT OF MERCURY AND CADMIUM IN
A FRESH WATER CAT FISH, *CLARIAS BATRACHUS* (LINN)**

DR. NAMITA KUMARI
University Department of Zoology,
B.R.A. Bihar University, Muzaffarpur (Bihar)

ABSTRACT

Objective: The main objective of this study was to determine the combined effects of cadmium (Cd) and mercury (Hg) at sub-lethal concentrations for 32 days on histochemical localization of heavy metals and on serum biochemical parameters including serum glutamic-pyruvic transaminase (SGPT) enzyme activity; glucose, triglyceride, cholesterol and total protein concentrations in *Clarias batrachus*.

Methods: Histochemical demonstration of Hg and Cd salts in liver and kidney was determined by sulphide-silver method and SGPT, glucose, triglyceride and cholesterol in the serum were measured using the standard protocols provided in the commercial kits purchased from Reckon diagnostics Pvt. Ltd., India.

Results: Serum SGPT, glucose, triglyceride, cholesterol and total protein levels were significantly altered in fish exposed to Cd or Hg salt alone. However, combined exposure of Cd and Hg normalized all the above mentioned biochemical parameters. Histochemical analysis demonstrated enormous amount of metals in the liver and kidney tissues exposed to Hg and Cd alone. Mercury accumulation in *C. batracus* was comparatively more than that of cadmium in both the tissues.

Conclusion: While exposure Hg or Cd adversely altered the biochemical parameters in the test catfish, following the combined exposure of both the metals, the concentrations of metal accumulation were decreased in both the tissues of *C. batracus*.

Keywords: Cadmium, Mercury, *Clarias batrachus*, Liver, Kidney, Blood glucose.

INTRODUCTION

Heavy metals are considered as highly dangerous contaminants of aquatic biota. They cause stress response in fish. As an indicator of environmental livability, fish seems to be very important since it is affected by its habitat (namely water), which is very often polluted by effluents from industries, pesticides washed out from agricultural lands and detergents from household drains etc. In fact, the release of heavy metals into the aquatic environment causes water pollution problems because of their toxicity, persistence and bio-accumulation. In recent years, Cd has become a problem of higher magnitude because of the toxic nature of the pollutant in sea, river and estuary waters.

Fish absorbs metal directly from contaminated water or indirectly from feeding on living organisms of the contaminated water. Another toxic metal is mercury. In fact, one of the most dangerous pollutants that can be found in waters is mercury. The hazards of these two heavy metal pollution have received much attention all over the world in recent years, because both Cd and Hg concentration are increasing every year, although antagonistic and synergistic effects of heavy metals are well documented in a variety of aquatic species.

Liver and kidneys are pivotal organs of the body responsible to maintain the homeostasis of the body, as liver is center of metabolism and detoxification; while kidneys are involved in an elimination of the wasteful chemicals from the body and selective reabsorption. Accumulations of the chemical pollutants are known to adversely affect the histology and functioning of liver, kidney, muscle and other organs of fish.

Studies on the harmful effects of environmental stressors such as metals are well documented. However, the literature on the combined effects of mercury and cadmium is very scanty. Hence the present study was aimed to determine the combined effects of mercury and cadmium on the histochemical localization of heavy metals and on the changes in serum biochemical parameters in a fish model, *Clarias batrachus* (C. B.)

MATERIALS AND METHODS

From the Khan river of Indore, M. P., India, the living and healthy specimens of *Clarias batrachus* were collected and were kept in glass aquaria. Fishes were acclimatized for 15 days in stored tap water and were treated with 0.1% KMnO_4 solution to avoid any dermal infection. Some of these fishes were used for the determination of LC_{50} values.

The preliminary experiment showed that 96 h- LC_{50} of CdSO_4 and HgCl_2 was found to be 10 mg/l and 1.0 mg/l for HgCl_2 respectively. Therefore, in this study, the sub-lethal doses of cadmium and mercury (1.0 mg/l and 0.01 mg/l) were considered, i. e. 1/10th of the 96h- LC_{50} .

Healthy adult fishes (40 in number) of nearly equal weight were divided in to four groups and were transferred to glass aquaria in the laboratory. They were fed every day with prawn powder. Physicochemical characteristics of experimental water were as follows: temperature $29 \pm 1^\circ\text{C}$, pH 7.6 ± 0.2 , dissolved oxygen concentration, 7.8-8.3 mg/l, total alkalinity: 22.0 ± 4.00 mg/l, and total hardness: 11.0 ± 0.05 mg/l.

Fishes were treated with sub-lethal concentrations of cadmium sulphate (CdSO_4) and mercuric chloride (HgCl_2) i. e. 1.0 & 0.01mg/l respectively. They were exposed to each metal alone as well as in combination for a period of 32 days as mentioned below.

Group I served as the control, while the fish of groups II and III were exposed to 1 mg/l of CdSO_4 and 0.01 mg/l HgCl_2 solutions, respectively. Fishes of group IV were exposed to a mixture of HgCl_2 (0.01 mg/l) and CdSO_4 (1.0 mg/l). Experimental period was 32 days. On completion of the experimental period, the fishes were kept on fasting for 24 h and then blood samples were collected. Serum was separated by centrifugation of whole blood (10 min, 4000 g, 4°C) and stored at -20°C until the experimental assays were performed. The levels of serum glutamic pyruvic acid (SGPT), glucose, triglyceride and cholesterol were measured using the protocols provided in commercial kits purchased from Reckon diagnostics Pvt. Ltd., India. Total protein in serum was estimated following the method of Lowry *et al.*[10]. The fishes from each group were dissected, liver and kidney tissues were removed and fixed in different fixatives. For the determination of heavy metals, the modified method of Timm sulfide-silver method was followed.

RESULTS

Results are presented on Fig.1, 2 and 3. Following the exposure of CdSO_4 to the fishes, a significant decrease in glucose and cholesterol levels was observed ($P < 0.001$ or $P < 0.01$) as compared to control. Although no significant changes in triglyceride levels were observed, there was a significant reduction in protein levels ($P < 0.001$) as compared to control value. SGPT activity was also increased significantly ($P < 0.01$).

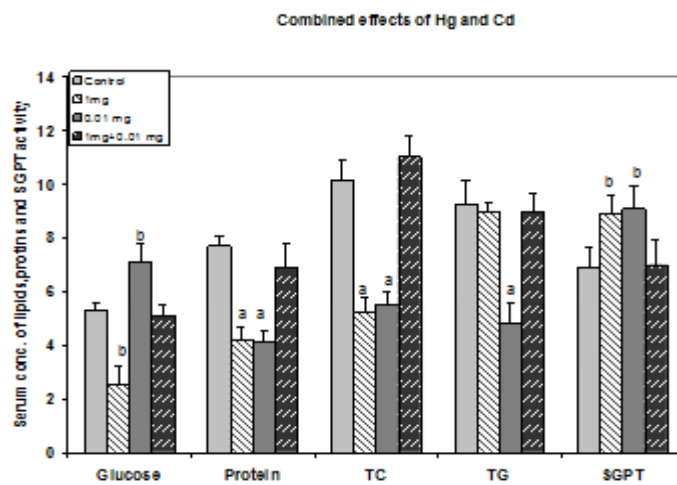


Fig. 1: Changes in the levels of serum glucose (mg/dl); triglyceride (mg/dl); cholesterol (mg/dl); total protein (mg/dl) and glutamic-pyruvic transaminase (SGPT) activity (IU/L) following the combined exposure of cadmium and mercury for 32 days in *Clarias batrachus*. Each bar represents the Mean \pm SEM (n=10). ^a, $P < 0.001$ ^b, $P < 0.01$ as compared to the respective control value.

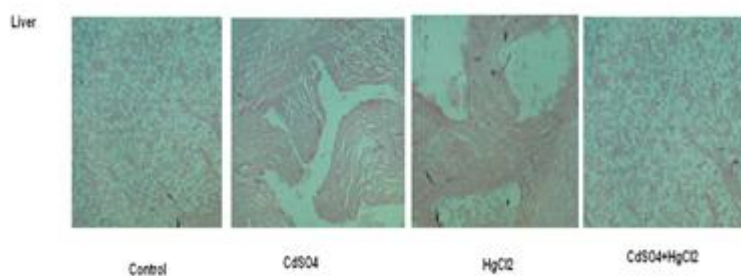


Fig. 2: Histochemical localization of mercury and cadmium in *C. batrachus* in Liver: Control liver showing faint deposition of metal. Section of liver of 0.01 mg/l $HgCl_2$ exposed fish showing faint deposition in the peripheral region and heavy accumulation in the central zone of the liver. Cd exposed liver showing uneven distribution of metal in the hepatocytes. Liver exposed to mercury and cadmium Hg + Cd showing faint metal deposition throughout the hepatocytes.

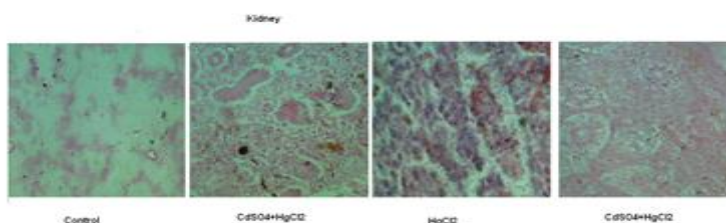


Fig. 3: Histochemical localization of mercury and cadmium in *C. batrachus* in kidney Control kidney shows no traces of metal. Kidney treated with $HgCl_2$ exhibits metal deposition in kidney tubules. Kidney exposed to $CdSO_4$ shows metal accumulation in proximal and distal kidney tubules. Kidney exposed to mixture of Hg + Cd shows less accumulation of metals throughout the kidney section.

In HgCl₂ alone exposed groups (Fig.1), glucose and SGPT levels were increased significantly ($P<0.01$). But, the levels of protein, cholesterol and triglyceride decreased significantly ($P<0.001$ or $P<0.01$, as compared to control values). However, following the combined treatment of Hg and Cd and exposed to similar duration, no significant changes were observed in any of the aforesaid parameters.

Metal accumulation

With respect to histochemical localization of metals it was observed that mercury deposition in liver and kidney (Figs 2 and 3 respectively) was to a greater extent as compared to CdSO₄. On the other hand exposure to Hg + Cd (in combination), accumulation of metals were less both in kidney and in liver and the values were somewhat similar to control fishes.

DISCUSSION

Heavy metals, as environmental stressors are known to alter serum biochemical parameters in fishes, which suggest that serum biochemical indices could be used as important and sensitive biomarkers in ecotoxicological studies concerning the effects of metal contamination and fish health. Results of the present study clearly indicated that HgCl₂ exhibited deleterious effects in *Clarias batrachus* as evidenced by an increase in glucose and SGPT levels. The blood glucose level has been used as an indicator of stress in fishes. Findings of some earlier studies indicated an increase in plasma cortisol, glucose and lactate levels in different fish species exposed to stressors like heavy metals. In our study also, an increase in glucose and SGPT levels was observed as compared to the control values in the serum of the fishes exposed to mercury. Heath (1995) reported that the effects are cortisol mediated that is released from the adrenal cortex, that in turn helps in glycogen storage in liver by reducing the use of glucose by tissues and it keeps blood glucose at high concentrations. Similar report is also available indicating high glucose concentrations following exposure of mercury in fishes. Exposure of mercury for 32 days significantly lowered the cholesterol levels which may be due to the bioaccumulation of metals which might have inhibited the conversion of esterified cholesterol to free cholesterol. Significant decrease in triglycerides content in blood plasma of *C. batrachus* by Mercury indicated its adverse effect on the liver. A similar effect of sublethal concentration of malathion has also been reported earlier in *C. batrachus*. Changes in protein is one of the earliest indicators of heavy metal poisoning. A significant decrease in protein levels was also observed following Hg exposure. The depletion of protein content during mercury toxicity may be due to reduced protein synthesis and/or due to enhanced proteolysis in the various organs of fish. Earlier also depletion of protein content had been observed in all the organs of *C. batrachus* following the exposure of mercury.

Although fishes exposed to cadmium showed the significant decrease in glucose, cholesterol and protein levels, triglyceride level remained unchanged. This decrease in the glucose levels might have resulted from a inhibition in glycogenolysis in the liver or a reduction in the rate of absorption of glucose through the intestine. The reduced level of glucose found at the end of exposure of Cd could be a reflection of the exhaustion of the energy reserves of the organism and an impaired capacity of fish to restore them.

The decrease in protein content by Cd may be either due to reduced protein synthesis or a protein breakdown caused by nephrosis, by cirrhosis or by an increase in the rate of protein utilization as a general adaptation for the excess toxicant (cadmium) in the plasma. Exposure to cadmium as well as mercury resulted in significantly elevated levels of SGPT which may either due to leakage of these enzymes from hepatic cells and thus raising levels in blood or due to increased synthesis as suggested in earlier studies. These adverse effects may be related to the observed accumulation of Hg in liver and kidney which are considered to be major target organs of toxicity. Interestingly, with respect to

cadmium the adverse effects are moderate and less than that of mercury suggesting that mercury is more toxic than cadmium. These findings corroborate with an earlier report.

When both the heavy metals were added in the water and fishes were exposed to a similar period, toxic effects were minimized and normal levels in the observed indices were obtained. Surprisingly, combined exposure of Hg and Cd had lesser adverse effects in catfish, in terms of metal accumulation, thus exhibited antagonistic effects to individual treatment. This observation suggests that cadmium might be counteracting the effects of mercury in fish. Somewhat similar type of observation was also made earlier by cadmium and chromium.

Possible mechanism of counteracting the effects of mercury by cadmium may be related to the beneficial effects of Cd when administered in low dose. Moreover Cd is known to enhance some enzyme activities in animals. This might have been the cause in this study also. The present study involving the combined effects of mercury and cadmium in a catfish appears to be the first report indicating the ameliorating effects of Cd in mercury toxicity of a fish.

REFERENCES

1. Schreck CB, Lorz HW. Stress response of Coho salmon (*Oncorhynchus kisutch*) elicited by cadmium and potential use of cortisol as an indicator of stress. *J Fish Res Board* 1978;35:1124-9.
2. Fingerman M, Devi M, Reddy PS, Katyayani R. Impact of heavy metal exposure on the nervous system and endocrine mediated processes in Crustaceans. *Zool Stud* 1996;35:1-8.
3. Suedel BC, Rodgers JJH, Deaver E. Experiment that may affect toxicity of cadmium to freshwater organisms. *Environ Contamin Toxicol* 1997;33:188-93.
4. Trudel M, Rasmussen JB. Bioenergetics and mercury dynamics in fish: a modeling perspective. *Can J Fish Aquat Sci* 2006;63:1890-902.
5. Nugegoda D, Rainbow PS. Effect of chelating agent (EDTA) on zinc uptake and regulation by *Palaemon elegans* (Crustacea: Decapoda). *J Mar Biol Assoc UK* 1988;68:25.
6. Iqbal F, Quershi IZ, Ali M. Histopathological changes in liver of farmed Cyprinid fish, *Cyprinus carpio*, following nitrate exposure. *Pakistan J Zool* 2005;37:297-300.
7. Iqbal F, Quershi IZ, Ali M. Histopathological changes in kidney of common carp, *Cyprinus carpio*, following nitrate exposure. *J Res Sci* 2004;15:411-8.
8. Yang J, Chen HC. Effects of gallium on common carp, *Cyprinus carpio*; Acute test, serum biochemistry and erythrocyte morphology. *Chemospher* 2003;53:877-82.
9. Levesque HM, Moon TW, Campbell PGC, Hontela A. Seasonal variations in carbohydrate, lipid metabolism of yellow perch, *Perca flavescens* chronically exposed to metals in the field. *Aqu Toxicol* 2002;60:257-67.
10. Lowry OH, Rosebrough NJ, Farr AL, Randall RJ. Protein measurement with the Folin-phenol reagent. *J Biol Chem* 1951;193:265-75.
11. Brunk U, Brun A, Skold G. Histochemical demonstration of heavy metals with sulfide silver method. A methodological study. *Acta Histochem* 1968;31:345-7.
12. Oner M, Atli G, Canli M. Changes in serum biochemical parameters of fresh water fish *Oreochromis niloticus* following prolonged metal (Ag, Cd, Cr, Cu, Zn) exposures. *Environ Toxicol Chem* 2008;27:360-6.
13. Malhilakath MV, Pereira C, Grau EG, Iwama GK. Metabolic responses associated with confinement stress in tilapia: the role of cortisol. *Comparative Biochem Physiol* 1997;1:89-95.
14. Acerete L, Balasch JC, Espinosa E, Josa A, Tort L. Physiological responses in Eurasian perch (*Perca fluviatilis*, L.) subjected to stress by transport and handling. *Aquacult* 2004;237:167-78.
15. Heath AG. *Water Pollution and Fish Physiology*, CRC Press: New York, NY, USA; 1995.

16. Polat F, Dal T. Investigating the effect of aspirin on mercury toxicity. *J Ecosyst* 2013;2013:1-6.
17. Abdel-Tawwab M, Mousa M, Abbass F. Growth performance and physiological response of African catfish, *Clarias gariepinus* (B.) fed organic selenium prior to the exposure to environmental copper toxicity. *Aquacult* 2007;272:335-45.
18. Lal B, Singh TP. Impact of pesticide on lipid metabolism in the freshwater catfish, *Clarias batrachus*, during the vitellogenic phase of its annual reproductive cycle. *Ecotoxicol Environ Saf* 1987;13:13-23.
19. Kakkar P, Jaffery FN. Biological markers for metal toxicity. *Environ Toxicol Pharm* 2005;19:335-49.
20. Mary J RA, John MMC, Uthiralingam M, Azhaguraj R. Quantitative variation of protein in the tissues of a fresh water fish *Clarias batrachus* exposed to mercury and chromium. *Int J Curr Res* 2011;33:230-6.
21. Kazlauskienė N, Vosylienė MZ. Peculiarities of the physiological responses of rainbow trout to copper. *Acta Zoo Litua Hydro* 1999;9:1392-657.
22. Neff JM. Use of biochemical measurement to detect pollutant-mediated damage to fish. *ASTM Spec Tech Publ* 1985;854:155-83.
23. Benson WH, Baer KN, Stackhouse RA, Watson CF

A DETAILED STUDY ON THE CONTRIBUTION OF MICROFINANCE IN WOMEN EMPOWERMENT

ChaitanyaVishnu pipalwa

Nagpur, Maharashtra

Abstract

In India, microfinance having several models for which are being applied through involving banks, government, various agencies and Non-Governmental Organisation-NGOs. The major and dominant approaches that target the poorer section of the society can be broadly classified as the Self Help Group (SHG) Model. The microfinance sector in India is well on its way to professionalize and institutionalize performance measurement with initiatives such M- CRIL and EDA rural systems. (Source-RBI). However, it was also been observed that although lakhs of poor households are reached compare to this, these numbers are relatively very small looking into the size of the population living in poverty line. Furthermore, Northern states have been underserved compared to the South in India.

For the SHG Bank linkage model, the concept of federations is seen as a promising initiative that could strongly contribute to sustainability of both the SHGs and women empowerment than in the other dominant model for microfinance, basically the Grameenmodel.

Keyword: Banks, Government, Microfinance, GrameenModel.

Introduction

Compare to other countries In India Banks specifically commercial banks are beginning to study and analyse the micro-finance market very minutely. In last decade, micro finance has explore of new market which has been facilitated by loan guarantees, RBI rediscount lines, and technical assistance. Donor-funded credit programs linkage was the initial resources for loans frequently came from and time began commercial banks draw on their own deposit for micro-loans.

Banks pointed out with commitment to do at its levels best and is necessary to make a micro-finance program work effectively and successfully in coming days. Without this support, these programs will not receive the human as well as financial resources they require for expansion. Afterwards, larger banks started funding through their own deposit with relatively minor reliance towards micro loan. Risk is associated with that and this funding also attached with risking lakhs of rupees from their own deposit to fund these programmes.

Review of literature

S.Suja (2012) conducted a study on "Women Empowerment through Self-Help Groups-An evaluative study". A total sample of 100 beneficiaries had been selected for the study. The objective of the study was to analyze the role of Self-Help Groups in the Economic empowerment of women. The researcher used Mean, S.D & T -test for finding out the changes in pre & post situation of SHG. By comparing the variables like Economic empowerment,

Decision making empowerment, Social empowerment, Managerial, Personalily empowerment, leadership, legal awareness and quality of work life.

Murlidhar L. (2013), found that after joining the group, the monthly average income and savings of the respondents had shown an increase of 133.37 % and 76.27 % respectively. More than 96% of them reported that they play an important role in decision making in the family which is an economic factor of an economic empowerment. The confidence level of the respondents had increased to a great extent. They had reported active participation in socio economic activities. It was inferred that micro financing through women self- help groups had brought a positive change in the lives of the members. The study concluded that poor, discriminated and underprivileged women if join the groups, can come out of poverty.

Research Methodology

Type of research

The type of research design followed for the study will be **Exploratory Research**. When the purpose of research is to gain familiarity with a phenomenon or acquire new insights into it in order to formulate a more precise problem or develop hypothesis, the exploratory research comes in handy. If the study happens to be too general or too specific, hypothesis cannot be formulated. Therefore need for exploratory research is felt to gain experience that will be helpful in formulating relevant hypothesis for more detailed investigations.

Data Source

Primary Data Source

The actual information will be received by the researcher for study from the actual field of research. The data will be obtained by means of questionnaires and schedules. In some fields primary data will be collected through interview and observation methods. The observation method, for collecting primary data, will be both participant & non-participant. They will be called primary data because they will be attained by the researcher from the field directly and for the first time.

Secondary Data Source

Secondary data will be attained indirectly. The researcher will not attain them directly. Such data will be attained from published and unpublished materials. Secondary data will be gathered from information collected from the individuals and stores through personal diary's, letters and survey documents etc. The secondary data again, will be gathered through two types of sources. The first source will be the personal documents such as diaries, letters, photographs etc. the other source will be the public documents such as books, manuscripts, records, reports of surveys by private organisations and various information's published in newspapers and magazines. The researcher will collect some data from journals, souvenirs, magazines etc. of national & international cadre.

Objectives of Study

- To compare the living standard and expenditure of the people before and after receiving the loan.
- To study whether SHGs bank linkage are an effective for poverty alleviation, human development.

Hypothesis

H0: "Income and savings of women is unaffected due to participation in SHG"

H1: Income and savings of women is affected due to participation in SHG"

Data analysis

To study the above hypothesis Paired sample t-test is applied with the help of SPSS ver 20, where the data of 100 women from different SHGs of Nagpur was collected.

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	The rate of interest of micro credit is reasonable before joining SHG - The rate of interest of micro credit is reasonable after joining SHG	-1.70000	1.14150	.11415	-1.92650	-1.47350	-14.893	99	.001
Pair 2	Improvement in Food Expenditure before joining SHG - Improvement in Food Expenditure after joining SHG	-1.12000	1.28141	.12814	-1.37426	-.86574	-8.740	99	.001
Pair 3	Improvement in non-food expenditure before joining SHG - Improvement in non-food expenditure after joining SHG	-.84000	1.52236	.15224	-1.14207	-.53793	-5.518	99	.000

Findings

- The SHGs women of other age group are also taking Interest, Motivated and joining the SHGs knowing the benefits available as the age of 12% respondents was Less than 25 years however the respondents between 25-40 years and above 40 years are 44% each.

2. From the study overall observation point out that the majority of the educational experience of 44% of the respondents was more than 10 years are availing the Microfinance loan compare to other range of experience as considerably low in percentage.
3. Majority of the respondents i.e. 72% had more than 5 members in their family this revealed that majority of the SHG member having dependent and Independent members and chances of saving is very less.
4. 8% of the respondents who have less than 2 members in their family said that they have nuclear type of family and remaining 92% of the respondents live in Joint Family.
5. 28% of the respondents got the information about implementation of SHG from their friends/relatives. Apart from that 26% said they got the information from NGOs working in their locality. This awareness functioning by the various Groups and people leads strengthen the respective community and society at large.

Suggestions

7. Encouraging SHGs women members because one of the reasons for this is the weak banking network as bank are very cautious while providing loans and social backwardness is also increases. Here NGOs need to increase their activities in Nagpur city.
8. Government should also focus on their functionaries which will help them in their Capacity building which ultimately leads to serve better to the society at large. MahilaBachatGadh is also doing good work in Nagpur but still far behind for productive result.
9. SHG movement will lead to participatory and self-help character as most of the SHG members is not part of the group which is bad signal and might harm the respective stake holders.
10. People should be educate on regular basis in the above mentioned area as still most of the women are under family pressure and not aware about the how to be good livelihood in the society. Area wise group leaders to be form and they should have joint association with the local activist to do the same.
11. In Nagpur as per the report received from 2-3 micro finance companies due to malpractices money landed to wrong people which leads to higher defaults, misuse of loans like revolving loan for money lending.

Conclusion

It is fact proven that the self-help groups (SHGs) are the latest and targeted breed of the micro finance industries in India. In Nagpur there are more than 30 micro finance institutions and in India, efforts have been made to promote micro finance in a sustainable manner. It is also fact that the need of the hour is SHG bank Linkage Program which is an important vehicle now a days. Serious efforts have been made towards SHGBLP. As SHGs in existence since long even before the linkage programme but the banks could not recognize that SHG would be their potential business clients and till date both operated independently, without knowing each other's strength. Micro finance and SHGs have been playing a major role in spite of the assorted constraints and intrinsic limitations for the empowerment of women. It is very critical and tough for women empowerment in the process of development of the women and economy too.

References:References:

Books

7. NABARD, '*SHG - Bank linkage programme highlights*', Mumbai, 2004.
8. MeeraLal, *SHG-Bank linkage in India: Empowerment and Sustainability*, Delhi, India, 2007

Websites

- www.rbi.org.in
- www.nabard.org.in

The Analytical Study of Socio-Economic Conditions of Paddy Growers of Gondia District

Dr. P. L. Nagpure
M. B. Patel College,
Deori, Dist. Gondia

Abstract :

Socio-economic conditions imitate the quality of life of the society as a whole as well as that of its constituents. The key components of socio-economic life of the people in any society are the level of per capita income, income pattern, consumption and saving pattern, housing conditions, etc.. The Paddy Growers of Gondia District are facing many problems due to the proper sale price. Due to that their socio-economic condition is deteriorating. This paper analyses the socio-economic conditions of paddy growers of Gondia District.

Keywords : social condition, economic condition, paddy growers.

Introduction :

Agriculture has the key importance in the Indian economy. The Indian have agriculture as a main business. Everyone is directly or indirectly related to the agriculture. The food is the major production of farming; which fulfill our basic need. In India 2/3 people adopted farming as a main business. The food crop is the main outcome of agriculture; which fulfills our basic needs. In India 70% population is living in the rural area and they are having farming as a main source of income. Small and medium scale produce are based upon the raw material from agriculture. In GDP 43% share goes to agriculture. Agri business is considered to be a core area in the nation's economy. As agriculture is the main source of living in India so we assume that 'Farming is the soul of India'.

The financial progress and development of the nation is dependent on the farming as it is the main source of income in India. Agriculture is called as backbone of Indian economy as most populations earning bread-and-butter through farming only. The nation can't progress without proper upliftment of farmers and the farms. The main source of raw materials for most of the production houses is the farm. So agriculture is also termed as the mother of all businesses and mile stone of the humanity.

'Marathi' is the mother tongue of Maharashtra State and few districts are having specialty of paddy growing. They are mostly Gondia, Bhandara, Gadchiroli, Chandrapur, Raigarh, Ratnagiri, Thane, Kolhapur, Sindhudurg, etc. For the effective Paddy production 1100 to 1400 mm annual rainfall is necessary. In those region paddy is cultivated as a main crop along with other crops viz. Cumin, Jawar, Bajra, Pulses, Tur, etc.

This district was carved out of Bhandara district in 1999. Gondia district has 8 tahasils in total including Gondia, Tiroda, Goregaon, Amgaon, Salekasa, Deori, Sadak Arjuni and Arjuni (Morgaon). Gondia District is located in the bank of Wainganga River; which is originated from the Mundra village of Seoni District of the Satpuda range of Madhya Pradesh. It flows south through Madhya Pradesh and Maharashtra in a very winding course of approximately 360 miles. After joining the Wardha, the united stream, known as the Pranahita, ultimately falls into the River Godavari. Gondia is ruled by 'Gond Rulers' in the history. There was dense forest. 'Gond' was the main natives who collect 'Gond' and

'Lakh' and sell it. So the name given as 'Gondia' mentioned in the book written by Mr. R.V. Rasel during the British Rule.

Gondia has the dense forest and that's why 'Tendupatta' collection became the support business. 'Bidi' is the main business of Gondia District. In the recent days 'Rice mills' are getting momentum. Bamboo is the main produce of Soundad region which is the main raw material to produce Bamboo mats.

The Gondia district is spread across the 5,641 sq.km and it covers 83% area of the Maharashtra state. Tiroda and Gondia are the only two municipalities however Goregaon, Amgaon, Salekasa, Sadak Arjuni, Arjuni Morgaon and Deori had Panchayat Samities.

According to the 2001 census newly created Gondia District has a population of 12,00,151 out of that 5,98,447 are males and 6,01,704 are females. In Gondia District 88% population is living in rural area whereas 12% population is living in the urban area. Gondia is located on the Mumbai-Hawara Railway route.

In the year 2000-2001, district has 98,560 Hectors land under irrigation including 67,041 hectors land is surface land. Gondia districts has 4 major Dam's including Itiadh Dam located in the Arjuni Morgaon Tahsil, Sirpur Dam located in the Tahsil Deori, Pujaritola Dam located in Tahsil Amgaon, Kalisarar Dam near tahsil Salekasa. Gondia District has 2,346 lakes/ponds; so it is also known as 'District of Lakes' and 'Paddy Bowl'.

District has different types of soil including Permanent Pasture, Current Fallow, Arwasown, Barren & uncult. Land, Culturable Wase Land. 71% arwasown land is under cultivation. In Gondia district, paddy growing is more than any other crops. It is found that paddy farming is more because of maximum rainfall, Wainganga River, other small rivers, dams, lakes and farm ponds are more.

During the study it is found that district sow paddy, wheat, jawar, tur, seeds, soyabean, turmeric and chilli in major. Out of theses paddy growing is more. For paddy growing atmosphere temperature should be high along with that water is required in bulk. The land should hold the water for more time. To maintain the level of water proper boundry ('bandhi') should be there. The Gondia district is fulfilling all these criteria so paddy farming is more in this district. It is found that Gondia District has more temperature. Also Gondia district has 1100 to 1400mm rainfall, which is required for paddy.

Farmers are also known as 'Annadata' means who supplies food. The changes in farming will reflect the farmer's livelihood. The condition of farmers is becoming worsened due to the changing tradition of farming, increased population, and division of land, decreased production capacity, rainfall, wind and increased level of pollution.

Farming is becoming costlier because of various reasons including new hybrid seeds, chemical fertilizers, pesticides, increased wages, unavailability workers, based on the natural rainfall, negative break-even-point. We need to face challenge of reducing production cost and applying proper cost to the farm produce. Some factors are impacting the farming and farmers they are problem of loan, less production, less irrigation, flash floods, maximum rainfall, draught, insects, proper market, marginal farming, use of loan for non-agriculture use, type of family, family's responsibility. These factors are impacting on the farmer's social as well as economically.

The problems which are related to agriculture are more in the country. If we consider about the Gondia District paddy farming is more. To find out various problems which are impacting to the farmer's life socially and economically this study is necessary. To answers various issues related to this research is important. To solve these problems of paddy growers some recommendations need to follow

and implement. By considering this objective the researcher had selected the research topic entitled The Analytical Study of Socio-Economic conditions of Paddy Growers of Gondia District (1999 to 2008).

The data is collected by means of different data collection methods. The structured questionnaire is prepared. The researcher had filled all questionnaires properly, correctly with minor details. Interview, observation is also conducted as a primary data collection. Also secondary data is collected from office, newspapers, books, magazine, journals etc.

Farmers are the vital entity in the agro economy, rural economy and social life. The 100% rural farmer's economy of Gondia District is based upon the paddy cultivation.

The production cost is hiked due to the new hybrid seeds, fertilizers, pesticides. The wages of workers is hiked. Farming is becoming costlier because of various reasons including new hybrid seeds, chemical fertilizers, pesticides, increased wages, unavailability workers, based on the natural rainfall, negative break-even-point. We need to face challenge of reducing production cost and applying proper cost to the farm produce. Some factors are impacting the farming and farmers they are problem of loan, less production, less irrigation, flash floods, maximum rainfall, draught, insects, proper market, marginal farming, use of loan for non-agriculture use, type of family, family's responsibility. Farmers are emotionally attached to their farm, so they call 'Kali Aai' (Black Mother) to the farm.

For paddy cultivation black soil which holds the water is considered to be very good. The soil of Gondia District is good for paddy farming because of Wainganga, Wagh Pangholi, Gadhavi, Chulband River's basin.

The workers are known as 'Farm Worker' ('Shet Majoor') those who are working in farms and earn their bread-and-butter. There is a huge demand of farm workers during the time of cultivation and the wage rate is quite high during those days as compared to the other days.

As per the 2001 Agri Census, it is found that Paddy farming is more in all talukas of Gondia District as compared to the other crop. In Gondia District total 2,23,246 hectares land is under cultivation.

The 'Paddy' is the popular word. Paddy is the product produced in the farm. That paddy is then sent to the rice mills for further processing. Paddy in its raw form cannot be consumed by human beings. It needs to be suitably processed for obtaining rice. Rice milling is the process which helps in removal of hulls and barns from paddy grains to produce polished rice.

Rice forms the basic primary processed product obtained from paddy and this is further processed for obtaining various secondary and tertiary products. The rice which is recovered after the processing is then prepared for eating. The paddy farming is done in two seasons 1. Kharip (rainy) 2. Rabbi (Summer).

A paddy field is a flooded parcel of arable land used for growing rice and other semi aquatic crops. For paddy farming it required more water and leveled land covered with the boundry called 'dhure'. Generally a single hecter is divided into 5 to 6 blocks by dura. These blocks are called 'Bandy'.

During the paddy cultivation along with paddy there is unwanted dust is also there. These paddies are separated using the paddy. These paddy seeds or purchased seeds are sow into the 10 ltr water and 300 gm salt mixture. The unwanted dust or dead paddy will removed and the weighted and healthy paddy seeds are removed from the bottom and spread on the clock to dry properly for 24 hours. Before sowing these are processed with the pesticides.

The traditional process is followed to prepare paddy plant. The process of sowing paddy seeds in to the farm is called as 'Parhe'. These plants are sown in to the small area of wetted land in proper rows. The seeds are covered with the wetted soil. After raining, later to the 2 to 7 days the seeds grow.

After the proper growth of the infant plants these plants are sowed into the farm in the sufficient water between the average distances of 15x15 or 15 to 20cm distances. This process is called 'Rowane'. It is observed that the female workers will maintain proper distance during 'rowane'. They also take care of the plants after 'rowane'. The water level is maintained upto the 5 to 6 cm and proper care is taken during that period.

After 25 to 30 day of *Rowane*, the unwanted plants and dust is removed under the paddy plant. This process is called 'Nindane'. To improve the production the sufficient usage of fertilizers are necessary.

To maintain the quality of paddy, the lower quality paddy is removed. Before 15 days of finished product entire water is removed from the farm. The cutting process begins after the paddy crop becoming 90% yellow. After that these paddy is collected collectively called 'Ganji'. The proper paddy is separated by removing unwanted paddy and dust. The entire process can be automated using the harvester machine.

In Gondia District, paddy is cultivated by using two methods 1. Perani i.e. sowing and 2. Rowani or lawani. The later is used in major. During the period of 1999 to 2008 various types of seeds are available for paddy they are Sindhewahi-75, Patel-3, Suwarna, HMT, Dubraj, Chinnor, Jaishriram, Khamang, Sonalika, etc.

Economic Conditions of Farmers :

Farmer works hard and with creativity and grows food for the nation. The nation grows and become self sufficient with the food. Still the farmers are facing poverty, infiltration, low privilege since their ancestors. They can't fulfill their bread-and-butter, children's education, maintain their house etc.

The lower selling price than the production cost, draughts, unrealistic insurance scheme, high cost fertilizers and pesticides these are the certain factors which suffers the economic conditions of the farmers.

As per the census 2001, the district has total 2,31,674 farmers out of these rural farmers are 2,29,749 and the urban farmers are 1925. The number of farmers is changing per year.

It is studied that the paddy farmers are satisfied with the average production. Those farmers who had irrigation facility they take two crops simultaneously. These farmers are happy. But farmers who rely on the natural rainfall produce less production and their economic condition is bad.

The production cost is hiked due to the new hybrid seeds, fertilizers, pesticides. The wages of workers is hiked. Farming is becoming costlier because of various reasons including new hybrid seeds, chemical fertilizers, pesticides, increased wages, unavailability workers, based on the natural rainfall, negative break-even-point. We need to face challenge of reducing production cost and applying proper cost to the farm produce. Some factors are impacting the farming and farmers they are problem of loan, less production, less irrigation, flash floods, maximum rainfall, draught, insects, proper market, marginal farming, use of loan for non-agriculture use, type of family, family's responsibility. The most importantly the farmers should get proper cost of the paddy which must fulfill production cost.

The 85% farmers are suffered with the low quality food, improper cloths, improper housing facility, etc.

During my study I saw farmer's real life. I got the opportunity to talk with farmers. During the discussion is realized that they even don't have sufficient money to consult the doctors.

The 90% farmers of Gondia District are poorer. However 10% farmers are living in average condition. The lifestyle of major farmers is average. The major reason of this is poor economical condition of farmers.

The most of the farmers take loan to fulfill their farming needs. They barrow loan every year of seeds, instruments, fertilizers, pesticides, rowani, nindan, wages, loan repayment, etc. It is found that 74% farmers are taking loan and 26% farmers not taking any loan.

The per quintal average cost of the paddy is Rest. 1395.45 after calculating the interest rate on capital. However the Government had set Rs. 780/- cost per quintal paddy in the year 2007-2008. That means Rs. 615.45 loss per quintal to the farmers.

By considering the proper irrigation facility and own farming equipments paddy is costing Rs. 975/- per quintal. By adding 75% profit i.e. Rs. 146.25 the selling price of paddy is calculated Rs. 1121.25. By deducting the Government Basic Cost Rs. 780; the farmers are noticing the loss of Rs. 341.35/-.

Social condition of farmers :

The farmers of Gondia district are socially deprived today also. They are adopting new traditions as per the current era. The farmers are marching towards the current development viz. limited family members, education, increased inflation, family planning, health awareness.

In the year 1999, there is a tremendous changes found in the social condition of farmers. Now day's farmers are more aware about their education. Farmers are keen to teach their children's even by selling their lands. The change is real. The villagers are visiting to doctors during the health problems. They are aware about the benefits of small family and family planning. They are taking care of cleanliness of their homes and village.

The study reveals that these changes are evitable for the social condition, social status of the farmers.

Various schemes of government for the farm and farmers. These schemes are addressed to the farmers by means of various governmental departments. As per their area they are providing certain facilities. The agricultural deparments are supplying farming equipments, pesticides. With the implementation of 'Wage Employment Programme' (Ro.ha.yo.) various farm lakes and well are developed. The metallurgy department is providing the whether information about the rain, wind, temperature etc. Depending upon this information the farmers can plan for their future activity. Farmers can sell their produce as per the government purchasing plan. They can even export their produce. These departments are facilitating for the betterment of farmers but still they are lacking behind their actual cause.

Problems of Farmers :

The farmers are not getting proper remuneration because of the increased production cost, cost of new hybrid seeds, the storage facility, and unavailability of bill after sell, payment in installments, payment is in credit, the misleading weighting facility, thief, the wastage of paddy.

There should be a proper administration to resolve various matter including critical laws of bank loans, the critical disbursement facility, export duty, dependency on other country for fertilizers, black marketing of fertilizers, late opening of government purchasing centre, loss is farming, increased paddy growers, increased unemployment,

If we think about the farmers of Gondia District; there are many problems which they are facing. The dry land type, irrigation problem, load shedding, less production, loan, availability of seeds, lack of processing facility, less selling price, distribution loss, supporting business, increased cost of farming, natural disasters, improper insurance scheme, improper implementation of government schemes. These problems need to be resolved for the betterment of the farmers. After study, it is found that they are having many problems which need to be resolved properly with the proper planning.

Conclusion :

In Gondia District the paddy farming is done into the different land types In Gondia along with all tahasils, out of total cultivation, 50% land is under the paddy cultivation. The farming is dependent upon the natural rainfall in major. Different governmental schemes including Agricultural Department, Soil Conservation Department, Agricultural Research Centre, Metallurgy Department, Purchase strategy, import-export duty & policy, are not introduced properly and it has huge corruption are impacting on the paddy farmers. The farmers are not getting proper sale price as compared to the investment cost; which directly impacts on the socio-economic conditions of the farmers.

References :

A K Sah (2005), Entrepreneurship among milk producers in northern region of India (Ph.D Thesis), NDRI Deemed University, Karnal, India

M, Mahatab & Kumar, Vinaya. (2014). A STUDY ON SOCIO -ECONOMIC STATUS OF FARMERS PRACTICING ORGANIC FARMING IN EASTERN DRY ZONE OF KARNATAKA. Online Journal of BioSciences and Informatics. 1.

Roy M.L., Nirmal Chandra, Kharb H.L., Socio-economic Status of Hill Farmers: An Exploration from Almora District in Uttarakhand, International Journal of Agriculture and Food Science Technology., ISSN 2249-3050, Volume 4, Number 4 (2013), pp. 353-358 <http://www.ripublication.com/ijafst.htm>

S Das (2003), A multivariate analysis of dairy farming practices among rehabilitated and nomadic van Gujjars in Haridwar, Uttaranchal (Ph.D. Thesis), NDRI Deemed University, Karnal, India.

S P Mishra (1979), A study of farm entrepreneurship in backward district of Bihar (PhD Thesis), IARI Deemed University, New Delhi, India.

https://www.academia.edu/10502085/Agriculture_and_Socio-economic_conditions_of_Farmers_and_Peasants_in_Ratnagiri
www.agromonitoring.com/
www.districtsofindia.com/
www.technoserve.org/India/LearnMore