Impact of factors and trend analysis of loan disbursement of loans to Microfinance institutions (MFIs)

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Abstract

"Microfinance has already shown that enabling the poor to empower themselves economically can be a good business." Pierre Omidyar

Microfinance, a service, present in all parts of the world, can be seen as a significant means to provide financial inclusion in the form of affordable financial products and guidance, where these products are not only limited to providing loans and credits but also providing other banking services and financial literacy as well. In a developing country like India, Microfinance can be considered as one of the ways in which all round economic development can be achieved. This paper aims to throw a light on the impact of various factors that determine the amount of loans and advances disbursed to MFIs by various financial institutions of India. Using the tools of regression, correlation and trend analysis, the data analysis and interpretation to find out the impact and trend of client outreach and loan disbursement by various banks were established. Through analysis, it was found that there is a strong positive correlation between the amount of loan disbursed to the states and number of SHGs working in those states. Out of all the factors considered, population type, SHGs and savings pattern has the highest impact on the amount of loans disbursed to MFIs. The trend of client outreach is showing an upward slope and out of various banks, Public sector banks and RRBs are the ones that are highly involved in providing loans and advances to SHGs and MFIs.

Keywords: Microfinance, loan disbursement, banks, Self-Help Groups, impact analysis

Microfinance and Self Help Groups: Impact analysis in India

Microfinance was introduced in India in the 1970s to answer the problems relating to rising poverty and unemployment. Also, microfinance became one of the important objectives and technique to empower women. Despite its strong caliber, the microfinance sector faces challenges related to accessibility in rural India, which, however is improving with every passing day.

Microfinance is a special type of banking service intended for those who face problems in accessing formal financial services. It aims to aid the low-income and unemployed section of the society. The institutions involved in providing microfinance offer services such as lending, linking customers of rural areas with banks to open accounts along with providing micro-insurance products. In developing countries like India, rural people face challenges to avail financial services in a formal manner, so microfinance can help small-scale businesses flourish by providing greater financial stability.

The whole idea of introducing microfinance was to give a boost to Government's initiatives towards the alleviation of poverty. Although it was introduced in 1970s, the companies gained prominence during the 90s, of which the Self-Employed Women's Organisation Bank or SEWA became very famous.

The most popular microfinance models that are prevailing in India comprises those of Grameen Bank models which is based on the successful model in Bangladesh and SHG Bank Linkage Program (SBLG) covering large parts across India. Self Help Groups have not only initiated credit provisioning services but have also contributed towards their overall empowerment and participation in decision making process.

Dasgupta (2005) discussed about the empirical evidences, alternative models and policy imperatives of Microfinance in India. The paper was prepared with the objective of analyzing the reasons for poor performances of mainstream commercial banks in extending loans and credit to rural people. On analysis, it was found that high level of NPAs seem to be one of the reasons for lacklustre performance of banks in extending rural credit. Financial facilities extended by Swarnjayanti Gram Swarozgar Yojna scheme has been growing proportionately with the increase in rural people but in case of SHGs, even though the growth is more than 120 percent, it is not proportionate with the growth of rural people. States of Southern India are known to be SHG-developed states, while Bihar and Madhya Pradesh seem to be SHG-backward.

Dr. Y.S.P. Thorat (2006) in the conference paper, "Microfinance in India: Sectoral issues and challenges", discussed about the intention of uplifting the poor right from the time of independence where policymakers have tried to reduce burden upon them by introducing financial services highly suited for the economically backward people. However, between the concern of the policy

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makers and the quality of effort employed to empower them, there has been a gap. The success envisioned out of the efforts could not be achieved for a variety of reasons; mainly, deficiencies in policy design, infirmities in implementation and the inability of the government to desist from resorting to measures such as loan waivers. This is where the concept of Microfinance was accepted as a paradigm for delivering financial services to the poor in a sustainable manner consistent with high repayment rates. It was found that Microfinance has helped in reducing poverty through increase in income, have led households to spend more on education, led to the reduction in child mortality in certain areas and so on. It can be concluded that microfinance encourages various stakeholders to innovate, learn and replicate, which has facilitated the NGOs to include certain micro-insurance products to their portfolios for the betterment of the poor.

Rupa (2014) in the paper, "A Study on Financial Performance of MFIs in India" analysed the financial performance of MFIs in India based on the data collected from the Microfinance Information Exchange from the fiscal year 2007 to 2011. Descriptive statistics were used as tools for statistical analysis, through which it was found that in terms of overall financial performance, Indian MFIs has better ROE and OSS. They have exhibited higher financial revenue by assets, the yield on gross portfolio (nominal) and lower operating expense by assets. However, it was still not sufficient to cover the total financial expenses. It could be concluded that, despite impressive growth in the microfinance sector, the country's economically backward section of the society could still be improved with sufficient regulatory measures and governance combined with the cooperation of banks, donors, NGOs and other players in the country.

Sharif Mohd. (2018), in the paper, "A Study on the Performance of Microfinance Institutions in India", emphasized on the role of Microfinance Institutions in the development of India. It analysed the growth in loan availed and loan outstanding by MFIs during the years 2015-2017. There was a decrease in the trend of loan advanced to MFIs during the time period, whereas, loans outstanding to MFIs increased subsequently during 2015-17. Upon analysis, it was further found that, apart from few states, the business models of MFIs has become urban-centric as the clientele rate in rural areas have declined over the years. The highest increase in rural customers could be seen in Andaman & Nicobar Islands (267%) followed by Jammu & Kashmir (17 %).

This paper is prepared to study the impact of various factors (rural population, literacy rate, GDP, savings with SHGs etc.) that determine the amount of loan disbursement to Microfinance Institutions in the country. The main reason which served as a driving force to take up this problem is to understand the main elements that lead people to avail microfinance services. The paper will also highlight on the trend of savings by Self-Help Groups with public sector banks, private sector banks and co-operative banks within a span of 10 years along with the growth in client outreach of MFIs from 2001 to 2020.

Objectives of the study

- to analyse the impact of various factors in the disbursement of loans to MFIs
- to determine the trend of savings by SHGs with public and private sector commercial banks and co-operative banks
- to study the growth rate of borrowers from MFIs over a period of 20 years

Research Methodology

- Source of data: The study is primarily based on secondary data. For the purpose of analysis, data is collected from the latest Microfinance Report by NABARD, 2020, Sa-Dhan 2020, RBI Index, Census etc.
- Type of research: Quantitative and descriptive
- Time Period:
i) For regression analysis: one year data (2020)
ii) For trend analysis: ten years data (2010-2020)
iii) For client outreach: 2001-2020
- Statistical tools and techniques: Regression Analysis, Correlation, Trend Analysis

Data Analysis and Interpretation:

Model Specification:

Regression analysis is a study to see the nature and extent of relationship between two or more variables and with a view of predicting the value of one variable from the others. Mainly, the regression analysis helps to determine how the value of dependent variable changes with the change of independent variable, considering other independent variables as fixed (Montgomery, 2005). It is an attempt to study the effects or relationship between a dependent variable and a number of independent variables. With regard to this study, the dependent variable is the amount of loan disbursed and the independent variables are population in a state (PS), number of self- help groups in a state (NSHG), savings of self- help groups (SSHG), rural population of state (RPS), literacy rate of the state (LR), GDP of state (GDP), female population of state (FPS)

The model for the study can be specified as,

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + e_{ij}$$

Where y = amount of loan disbursed to the states (ALDS)

x_1 = population in a state (PS)

x_2 = number of self-help groups in a state (NSHG)

x_3 = savings of self-help groups (SSHG)

x_4 = rural population of state (RPS)

x_5 = literacy rate of the state (LR)

x_6 = GDP of state (GDP)

x_7 = female population of state (FPS)

The model can be re specified as

$$ALDS = \beta_0 + \beta_1(PS) + \beta_2(NSHG) + \beta_3(SSHG) + \beta_4(RPS) + \beta_5(LR) + \beta_6(GDP) + \beta_7(FPS) + e_{ij}$$

Where, $\beta_1, \beta_2, \ldots, \beta_7$ are regression coefficients estimated from the dataset. They represent the marginal effect of regressors on the amount of loan disbursement to the SHGs. β_0 and e_{ij} respectively the constant (intercept) and the error term.

Table 1: Regression results

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	8009.058	20365.9	0.039972	0.568399	-402422	418439.9	-402422	418439.9
Population (thousands)	-23.4661	11.79899	-1.98882	0.036573	-47.6352	0.70306	-47.6352	0.70306
No. of SHG	0.237661	0.09863	2.409614	0.02279	0.035626	0.439696	0.035626	0.439696
Savings of SHG(lakhs)	0.938893	0.173443	5.413259	8.97E-06	0.583611	1.294176	0.583611	1.294176
Rural population	-0.25893	2.162894	-0.11971	0.905565	-4.68942	4.17156	-4.68942	4.17156
Literacy	-92.894	2490.495	-0.0373	0.270511	-5194.44	5008.654	-5194.44	5008.654
GDP(lakhs	-0.00131	0.000738	-1.77685	0.036461	-0.00282	0.0002	-0.00282	0.0002
Female population	60.87687	30.21826	2.014572	0.053645	-1.02244	122.7762	-1.02244	122.7762

In table 1,

LD= Amount of loan disbursements to the SHGs state wise.

$\beta_1, \beta_2, \beta_3, \ldots, \beta_7$ = coefficients which represents the marginal effects of regressors or explanatory variables on the amount of loan disbursed to the SHGs and β_0 and e_{ij} respectively the constants (intercept) and disturbance terms.

From Table 1, the regression model obtained is,

$$Y = 8009.058 - 23.466x_1 + 0.2376x_2 + 0.9388x_3 - 0.2589x_4 - 92.984x_5 - 0.0013x_6 + 60.876x_7$$

Here $x_1, x_2, x_3, \ldots, x_7$ denote their actual meanings. Here the constant value 8009.058 is the intercept, which represent the total output of amount of loan disbursement given that all predictors are zero, all the other factors are considered as constant. The coefficients of x_1 (population of state), x_4 (rural population) , x_5(literacy) and x_6 (GDP) are -23.466, -0.2589, -92.894 and -0.0013 implies the magnitude by which the amount of loan disbursement is state-wise decrease per unit change in x_1, x_4, x_5, x_6 , that mean all these factors population in states, rural population of states, literacy rate and GDP of states have negative impact on amount of loan disbursement . Otherwise the coefficients of x_2, x_3 and x_7 of 0.2376, 0.9388 and 60.87 respectively indicate that how much the amount of loan disbursement would increase per unit change in x_2, x_3 and x_7.

Table 2: Multiple Correlation and Coefficient of determination.

Regression Statistics	
Multiple R	0.963811
R Square	0.928932
Adjusted R Square	0.911165
Standard Error	94083.65
Observations	36

The R value of 0.9638 shows that there exist a strong positive relationship between amount of loan disbursement as dependent variable and population in a state (PS), number of self-help groups in a state (NSHG), savings of self-help groups (SSHG), rural

population of state (RPS), literacy rate of the state (LR), GDP of state (GDP) and female population of state (FPS) as independent variables. This implies that behavioral pattern of these predictors affect the amount of loan disbursement to the states. The R^2 value of 0.9209 indicates that 92.09% of the variations in loan disbursement to the states is explained by predictor variables.

ANOVA

Table 3: Analysis of variance

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	7	3.24E+12	4.63E+11	52.28418	2.09E-14
Residual	28	2.48E+11	8.85E+09		
Total	35	3.49E+12			

If the hypothesis $H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7$ (the model is not significant)

$H_1 : \beta_i = \beta_k$, atleast one i (model is significant)

	loan disbursed	*Population (thousands)*	No. of SHG	Savings of SHG(lakhs)	Rural population	Literacy	GDP(lakhs)	Female population
loan disbursed	1							
Population (thousands)	0.42407099	1						
No. of SHG	0.769815081	0.736088774	1					
Savings of SHG(lakhs)	0.943983028	0.448616992	0.736107657	1				
Rural population	0.38179235	0.956074825	0.667794147	0.399610703	1			
Literacy	-0.236904975	-0.45808285	-0.3605496	-0.254264255	-0.469908061	1		
GDP(lakhs)	0.419256663	0.79778541	0.752291083	0.44322515	0.655211852	-0.17855	1	
Female population	0.474548021	0.997678367	0.76821031	0.496999601	0.948472636	-0.44569	0.814664252	1

From the table (), it is observed that p- value (2.09E-14) < 0.05 level of significance. We therefore reject the null hypothesis H_0 and conclude that model is significant.

To serve the second objective of the study, a trend analysis was conducted to find out the progression of savings by various Self-Help Groups with Public Sector banks, Regional Rural Banks, Private Sector banks and Co-operative banks.
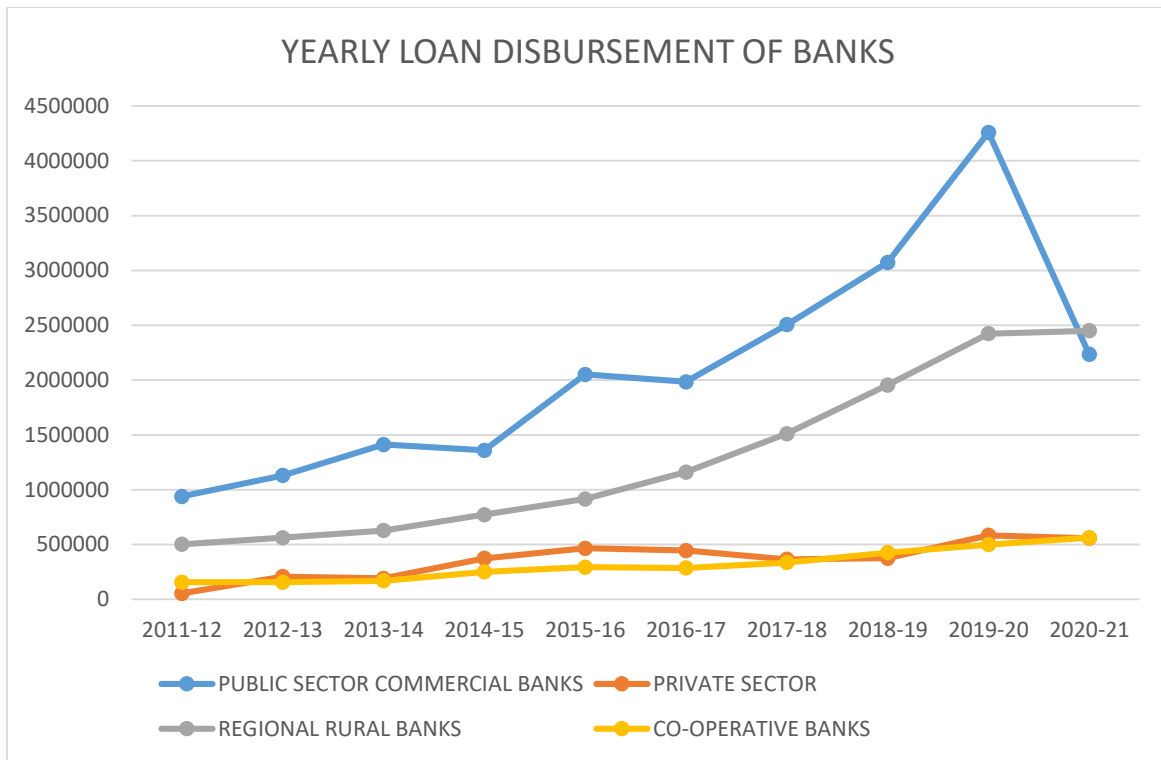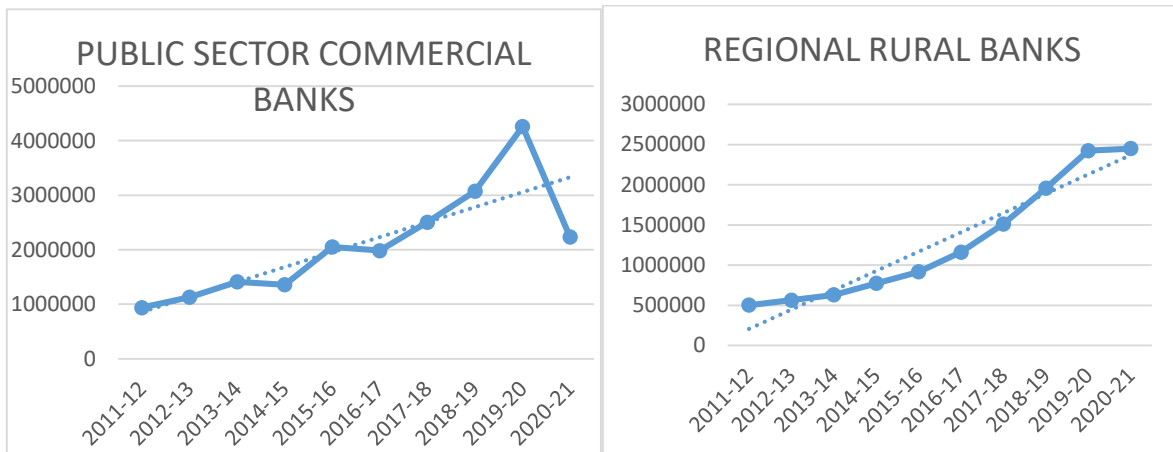
Fig: YEARLY LOAN DISBURSEMENT OF BANKS

From the above figure, it is seen that Public sector banks provide maximum loans to SHGs followed by Regional Rural Banks with respect to loan disbursement. An increasing trend can be seen for both banks over the years, however, in 2020-21, there was a sharp fall in loan disbursements by Public sector banks. Regional Rural banks, too, recorded a decrease in the amount of loan advanced to SHGs during 2020-21. For private sector and co-operative banks loan disbursement is significantly lower as compared to other two.

To see the trend of loan disbursements of different banks, we draw the trend lines and they are shown below:
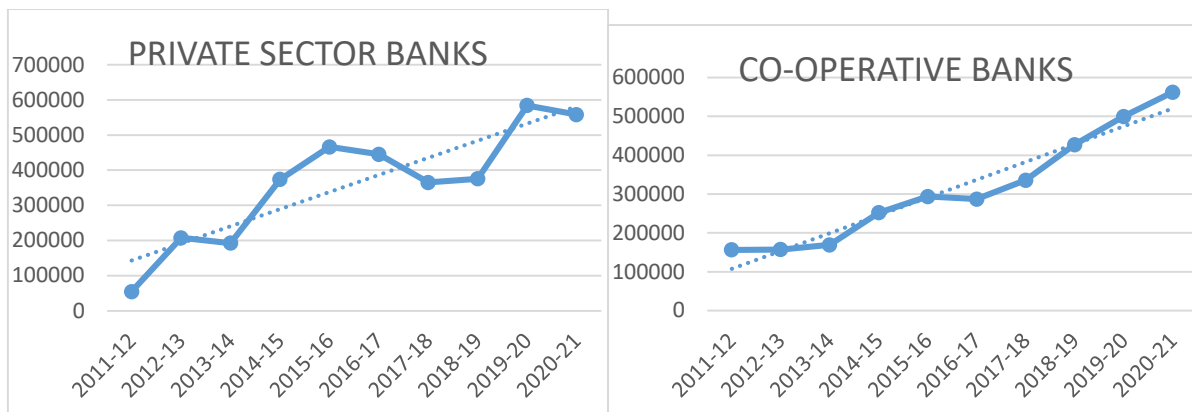
Fig: Trend of Loan disbursement

From the figures, it is seen that, trend is in upward direction for all the banks. From time series plotting for public sector bank, loan disbursement does not have a smooth increase yearly, but for regional rural bank it is seen that there is almost a stable increase in loan disbursement over the years. For public sector banks the loan disbursement fluctuates very frequently, a little bit of fluctuations also seen in case of co-operative banks as well.

CLIENT OUTREACH BY MICROFINANCE INSTITUTIONS
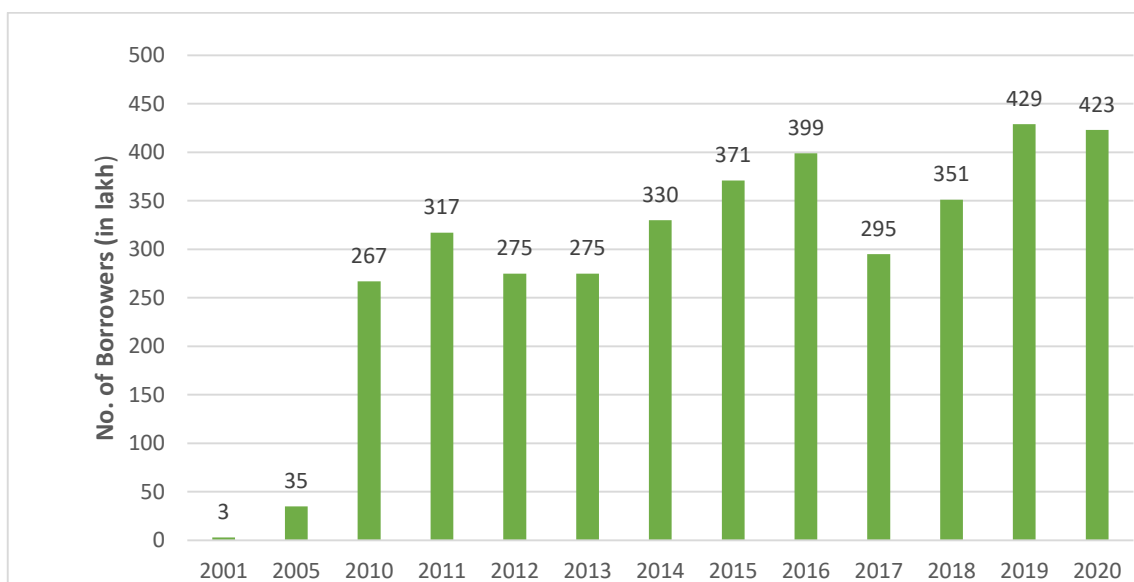
Source: Sa-Dhan 2020

From the above chart, it can be seen that the total number of clients served by MFIs stood at 423 lakh as on 31 March, 2020. There is a decline of 1.46% in client outreach in 2019-20 as the number has gone down to 423 lakh from 429 lakh in 2018-19. As BFIL was acquired by IndusInd Bank in 2020, hence its results are not included in the above data. In 2018-19, BFIL alone had 74 lakh clients out of total clientele of 429 lakh. Although, client outreach in 2019-20 can be seen has decreased but actually there is a growth of 16% (factoring in BFIL's exit as an MFI).

There has been a substantial growth in client outreach of MFIs from 2005 to 2011, reaching a level of 317 lakh. This trend declined during 2012 and 2013 and the number of clients dropped to 275 lakh. There was again an increase in 2014 and the client level reached to 330 lakhs. This trend continued till 2016 and reached an all-time high of 399 lakh, again dipped in 2017, but bounced back to reach a level of 429 lakhs in 2019. On analysis it was found that that most of these clients were served by NBFC-MFIs at a rate of 83%.

CONCLUSION

Microfinance and Self Help Groups form a backbone for the overall development in a developing country like India. From letting rural people connect with financial institutions and their services to encouraging unemployed and poor people to aim for a start-up, MFIs and SHGs have played a huge role in transforming financial inclusion from a mere concept to reality. This paper was

prepared to carry out an impact analysis of various factors like GDP, type of population, number of SHGs etc. in every state and to find out which factor had the highest impact that led to loan disbursements to MFIs of the states. By using multiple regression analysis and correlation, it was found that population type, SHGs and savings pattern has the highest impact on the amount of loans disbursed to MFIs. It also shows that there exist a strong positive relationship between amount of loan disbursement as dependent variable and population in a state, number of self-help groups in a state, savings of self-help groups, rural population of state, literacy rate, GDP and female population of state as independent variables.

References:

- Access, Use and Contribution of Microfinance in India: Findings from a National Study
  Frances Sinha, *Economic and Political Weekly*, Vol. 40, No. 17 (Apr. 23-29, 2005), pp. 1714-1719 (6 pages)
- Microfinance in India: Sectoral issues and challenges Dr. Y.S.P. Thorat, Towards a Sustainable Microfinance Outreach in India Experiences and Perspectives, GTZ
- M. Sharif (2018): "A study on the Performances of Microfinance Institutions in India", *International Academic Journal of Accounting and Financial Management*, Vol 5(4), pp. 116 – 128.
- P. Mahanta at el.(2012), "Status of Microfinance in India – A Review", International Journal of Marketing, Financial Services & Management Researtch, Vol. 1 (11), pp. 142 – 155.
- R Rupa, P. Manoharan (2014), "A Study on Financial Performance of MFIs in India", *The International Journal Of Business & Management*, Vol 2 (10), pp. 187-193.
- T. S. Devraja(2011), "Micro finance in India – A Tool for poverty reduction", *Working paper University Grant Commission, India.*