

Impact of Pre Loan assessment customer credit worthiness on loan defaults at later stages in Rural Segment – a study at Vehicle Financing NBFC

Sundar R.¹, Dr. Sapna Singh², Prof. (Dr.) Mohit Gangwar³

¹PhD. Research Scholar, Department of Management, SRK University Bhopal, MP, India

²Associate Professor, Department of Management, SRK University, Bhopal, MP, India

³*Principal, Bhabha Engineering Research Institute, Bhopal, MP, India

³mohitgangwar@gmail.com

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Abstract: One of the major issues faced by the financial sector today is the loan delinquencies and loan defaults specifically for NBFC's in Rural areas. The study conducted with a sample NBFC Mahindra & Mahindra Financial services also struggles with the same issue. The Researcher in this study has tried to find out the methods used by the NBFC for pre loan assessment and the impact of it in controlling the loan defaults at later stages of loan. Mostly these methods help the credit manager identify the suitability of the applicant for loan disbursement, but if these methods have any impact in controlling loan defaults at later stages of loans is an area for study. The data required for this analysis is not available as a published data. Thus it has been collected as Opinion based data from Credit Managers. One sample T test has been applied to statistically analyse the data.

Key words: Pre Loan assessment methods, customer credit worthiness, loan defaults, loan delinquencies.

1. Introduction

Over a period of time, since evolution the Non Banking Financial Companies (NBFC's) in India have grown and expanded drastically. Be it in terms their size, the diverse category of operations and services they provide, the scale of operations and even their participation and Role in bringing inclusive growth in the economy, NBFCs have come a long way. The effect of all this can be seen very visibly in the growth in the assets of the sector of the sector which comes to be 18.6 Per cent in the past one decade ending March 2019. Where, for the same period the growth in the assets of Scheduled Commercial banks remained just 10.7 per cent. (NBFC Regulation looking ahead, RBI Speech)

In absolute terms if represented, the asset size of NBFC sector stood at Rs. 51.47 lakh crore, including Housing Finance Companies, as on March 31, 2020, and at the same time in terms of borrowing of funds it has come to the highest place. As per reports it can be seen that the NBFC sector is growing at a good pace year on year. In four years the sector has grown from 22Lakh Crore to 35 Lakh crore in size in terms of Total Assets. (NBFC Regulation looking ahead, RBI Speech)

Challenges in Front of NBFC's

Though, the NBFC sector has seen a tremendous growth over a period of time, the coin as the other side as well. It has been facing a lot challenges right from incorporation as an NBFC to becoming operational, following the regulations and even the absence of clear regulations. All these challenges are in the process of being resolved step by step by the Regulatory authorities with the dynamic reforms in the financial sector in the economy.

But one of the major challenges faced by an important segment in Indian Financial Sector has been faced by the NBFC's as well that is Loan Delinquencies and Loan Defaults. (Challenges faced by NBFC's, enterslice.com)

Loan Delinquency: Based on the definition of Delinquency, it can be said that a loan delinquency occurs when an individual or corporation with a contractual obligation to make payments against a debt, a loan payments, does not make those payments on time or in a regular, timely manner. (investopedia)

Delinquent vs. Default

“In a financial sense, delinquency occurs as soon as a borrower misses a payment on a loan. In contrast, default occurs when a borrower fails to repay the loan as specified in the original contract. Most creditors allow a loan to remain delinquent for some time before considering it in default. The duration lenders allow for delinquency depends on the creditor and the type of loan involved.” (investopedia)

Loan Default status in India

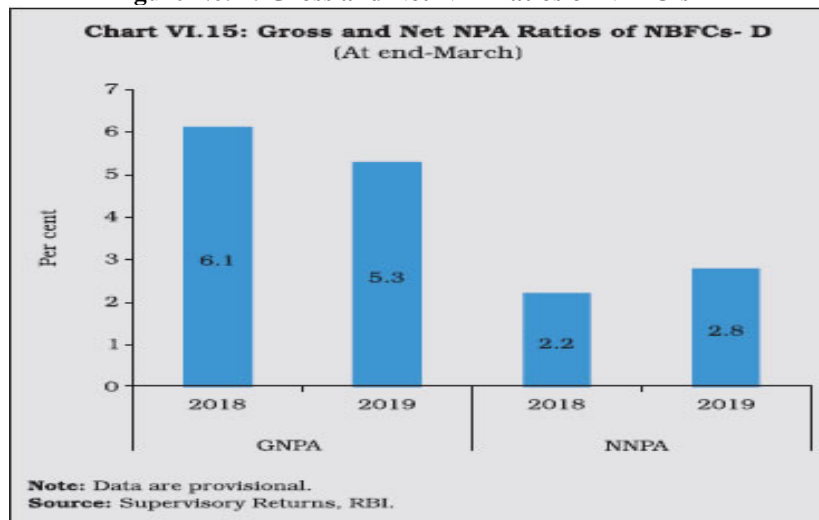
Banking or Non- banking sector in the financial sector in India has always taken a backseat due to the Loan defaults in the Country. Apart from after corporate loans the rural sector is the biggest sector where the loans are disbursed. Though as per the Balance sheet or as per regulations there no such special classification of rural loans but the agricultural loans and many of auto loans, personal loans also are taken by rural population. And when it comes to Loan delinquencies and Loan defaults Indian financial sector has been struggling in all these areas.

Figure No. 1: Asset quality of NBFC's



Source: <https://m.rbi.org.in/Scripts/PublicationsView.aspx?id=19367>

Figure No. 2: Gross and Net NPA ratios of NBFC's - D



Source: <https://m.rbi.org.in/Scripts/PublicationsView.aspx?id=19367>

The figures presented above, taken from recent RBI reports show us the asset quality of overall NBFC's in Figure No. 1 for the period of 5 years from 2014 to 2019 and Deposit taking NBFC's in the Figure No. 2 for the period of 2 years i.e. 2018 and 2019. In both cases 2020 values are not taken due to the unprecedented scenario faced by the overall world, country and economy due to Covid-19 Pandemic.

The analysis of overall NBFC's suggests a continuous growth in GNPA's and NNPA's. The GNPA's have grown from 2.6 per cent in the year 2014 to 6.1 per cent in the year 2019. And the NNPA's have grown from 1.4 per cent to 3.4 per cent for the same period. This clearly shows the reason for worry as except for the year 2018 in all other years the GNPA and NNPA's have shown the increase in NPA's the comparison for 2 years is satisfactory as the GNPA's have gone down from 6.1 per cent to 5.3 per cent due to the growth in assets as can be seen in Figure No. 4 in the abridged Balance sheet of NBFC's. The scenario hasn't been the same for NNPA values, which has gone up from 2.2 per cent in the year 2018 to 2.6% in the year 2019. A clear 0.4 per cent growth can be seen in NNPA's, a good reason to worry for the NBFC's. As per the report of RBI further. In September 2019 the gross NPA's of NBFC's in India increased to 6.3 per cent which was earlier 6.1 per cent in March 2019. (transunioncibil report 2020) The quarter three, overall delinquency rates which we can see for the year 2019, above is 51 bps high than that of overall Delinquency rate a year ago. Whereas the Delinquency rates for public

sector (PSU) and private sector (PVT) banks for the period of comparison reduced in that period by 26 bps and 9 bps, respectively. (NBFC gross NPA rises to 6.3% -Economics Times article)

The loan delinquency status, as presented above, does not look very positive. Thus, it becomes necessary to have control techniques in place to predict and reduce the Loan delinquencies. Thus it is necessary to understand the methods followed for Credit evaluation and prediction of Delinquencies.

2. Literature Review

The researcher has reviewed papers from many renowned journals about various traditional methods and models of credit Evaluation.

One of the major area of study is loan evaluation techniques adopted by the lenders. C. Gajendra Naidu (1993) has identified that it is necessary to have reliable quantitative techniques to identify loan repayment capacity, as per the findings of his study international banks adopted credit worthiness assessment system and for corporate, discriminant analysis and linear probability models. The study further adds the factors for loan default and suggests small land holdings as a major reason for high loan defaults with Inadequacy of loan amount, mis-utilisation of loans, non availability of loans in time, weak monitoring of loans, and non-linkage of repayment to marketing as other major findings of the study.

Mounika Koduru et al (2020) in their study identified the four steps followed by NBFC's while processing loan application It starts with online application, second step to uploading documents, third, credit analysis done by the company and ends with disbursement. The paper further proposes a hybrid model which changes the step no 3 as Calculation of application score before predicting the status of application to be approved or rejected. The model was built considering the inadequate system of loan disbursement followed by NBFC's.

Eliana Angelini (2008) feels that traditional models and new models go hand in hand as it's just a betterment of the previous one. The author has identified three of the traditional models; (1) expert systems, (2) rating systems, and (3) credit scoring systems and has noted the limitations of using the same as well.

Figure No. 3: Traditional Approaches of Credit Evaluation

Approach	Methodology
Judgmental methods	applies the assessor's experience and understanding of the case to the decision to extend or refuse credit
Expert systems (e.g. lending committees)	uses a panel approach to judge the case or formalises judgmental decisions via lending system and procedures
Analytic models	uses a set of analytic methods, usually on quantitative data, to derive a decision
Statistical models (e.g. credit scoring)	uses statistical inference to derive appropriate relationships for decision making
Behavioural models	observes behaviour over time to derive appropriate relationships for reaching a decision
Market models	relies on the informational content of financial market prices as indicators of financial solvency

Michelle Apanga (2016) in their study have listed various approaches of credit evaluation and methodology adopted for the same by NBFC's, which is as follows

The review of literature suggests there are mostly similar methods adopted by overall financial sector and similar methods are followed by NBFC's as well for the credit risk assessment.

The researcher further reviewed R. Balaji Kumar et al (2019) 's paper 'A study on current liquidity crunch faced by NBFCs and HFCs in India' along with pointing out liquidity crunch as a major issue pointed out that the lack of vision has put the NBFC's/HFC's in a big trouble with Larger NPA's and high cost of funds. The lack of balance between intake and outtake of funds has lead to the liquidity crunch wherein the defaults play an important role. The reasons for default also are noted to be the raise of interbank rates resulting in adverse cash crunch. The paper does a detailed analysis of ILFS case and says "The major concerns for NBFC's and HFC's are Steep raise in NPA over last 4 years, which has impacted to their business and question's their sustainability." "Major TOP NBFC's are witnessing growth of stock their GNPA's, which is un controllable in spite of their efforts to roll it back to standard accounts. The Major reason said to be Demonetisation and implementation of GST in 2016-2018 clubbed with current recession in financial market. Since NBFC's are in verge of slowing their business for another 6 months with forecasting of maintaining the Status Quo."

Even after taking many efforts by the authorities, the rural sector of the economy has not yet got the sufficient banking benefits. Along with lower literacy, lesser income one of the big reasons for this status is less profitability and higher defaults in rural areas.

Agricultural loans are not the only area when it comes to Rural financing. One of the important segment is Vehicle loan financing. As per Gumparathi S., (2010) "Vehicle finance NBFCs have shown an increasing trend" The researcher has studied many NBFC's in to the segment and has reached a conclusion that "The commercial vehicles financing segment is a large proportion of the financing market and only smart financing option and service level are a positive influence." As per the researcher the growth in vehicle financing can be directly linked with the growth in the economy. But even the sector struggles with credit risk and need to do risk assessment thoroughly.

Based on the literature considering loan defaults and delinquencies as a major issue specifically in the Rural Loan segment in NBFC's the researcher has selected the same area for further research and specifically in to Vehicle Financing, A research Gap identified.

Mahindra Finance- Profile, Loan Default status and Covid Impact

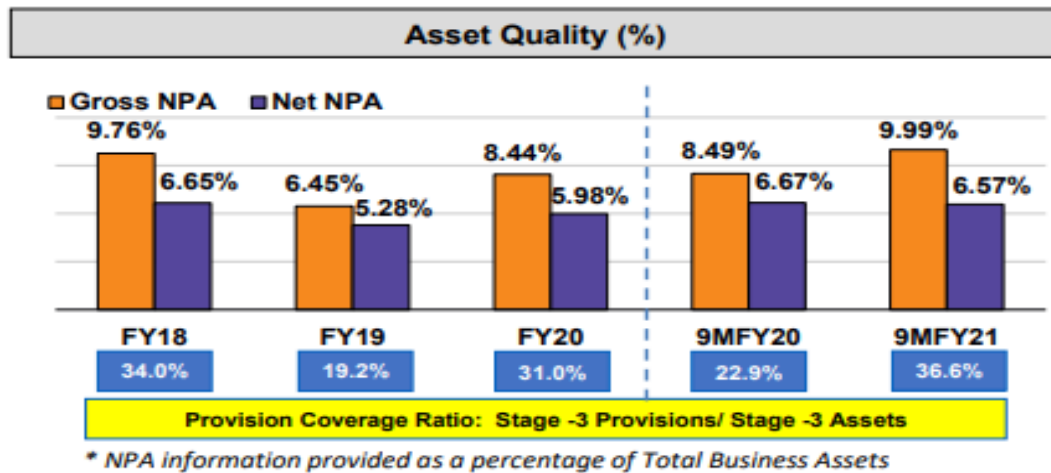
The current study focuses on the selected NBFC- 'Mahindra Finance'. And this section of study gives details about the sample NBFC, the Loan status of the selected NBFC and even Covid Impact on the selected NBFC before the going for the further sections of the study.

Mahindra Finance started its operations nearly Two decades ago, where the focus "with a deep commitment to transform the landscape of semi-urban and rural India by empowering the ambitions and aspirations of millions of people."

The product portfolio of the Mahindra Finance includes vehicle finance, with financing of passenger vehicles, utility vehicles, tractors, commercial vehicles, construction equipment; and pre-owned vehicles under it. The second segment of SME finance includes project finance, equipment finance, working capital finance and bill discounting services to SMEs. The company is a deposit taking registered NBFC in India.

The employee base extends to 33,000 employees with a network of 1300 offices, and a customer base of in more than 3, 70,000 villages. The NBFC has presence in all states across the country and a footprint in 85% of its districts – that's one in every two villages in the country. Thus it can be said that the major business must be coming from rural segments. No such clear bifurcation is available in the published data by the company. The NBFC has assets under management (AUM) of over Rs. 81,000 crores.

Figure No. 4: Asset Quality – Mahindra Finance



Source: https://www.mahindrafinance.com/media/383714/q3fy2021_investor-presentation_vf.pdf

The above figure helps us compare the Gross NPA and NPA proportion of Mahindra finance for a period of 3 years, most of it is a pre covid scenario. Over a period of time just like overall NBFC sector the Gross NPA has reduced to a small extent due to increase in asset size but the Net NPA hasn't reduced much which again shows the collection inefficiency.

Further when compared with the sectoral data the proportion of Gross NPA and NET NPA both are higher than the sectoral data. The values are nearly double that the sectoral figures. Though, this might be due to higher proportion of rural financing, as majority of the operations of the NBFC are stationed at rural areas. This still is a big reason to worry for the organization. The things are expected to deteriorate further as an impact of pandemic and the level of Delinquencies and NPA's is further expected to increase.

The higher NPA proportion of Mahindra finance creates a need for looking at the possible way outs to reduce the NPA's. Thus it is necessary for the researcher to understand the credit evaluation method and also to analyze the delinquency and default status of the NBFC. Thus the researcher has tried to collect data related to Pre loan assessment methods adopted by the selected NBFC and further has tried to check if the methods followed have any impact on controlling loan defaults at the later stages as well as the methods are basically used to assess the credit risk at the time of application mainly.

3. Research Methodology

The researcher here has collected data from more than 300 branches of the selected NBFC spread across the rural areas across the country. The data has been collected from the credit managers of these branches.

4. Hypothesis

1. The pre-loan assessment customer credit worthiness prediction has an association with Proportion of Loan defaults and time required for identification of loan default.
 2. The pre-loan assessment customer credit worthiness prediction and offering methods do not have any impact on rural customer in controlling loan defaults at later stages of loans.
- For the purpose of testing the hypothesis the researcher has collected the data related to the pre-loan assessment customer credit worthiness prediction and offering methods followed by the credit managers of selected NBFC and the identification of the loan default by the credit managers. The researcher has specifically collected the data about methodology followed by the credit managers for pre loan assessment.

Credit Assessment Method Followed: The researcher has collected the data related to Pre loan assessment methods followed by the NBFC's and tried to find out the most preferred method by the credit managers of Mahindra Finance.

Table No. 1: Credit Assessment Method Followed

Sr. No.	Particular	No. of Respondents	%
1	Conducting psychometric test	8	3%
2	Demand Additional collaterals to protect the loan repayment	30	9%
3	Demand for Guarantor / co-applicant who have a credit score/stable income	97	31%
4	Assessment of Earning potential of borrower from the asset being borrowed	49	15%
5	Physical visit to borrower home and interviewing them and their neighbours	134	42%
	Total	318	100%

From the above data presented it can be seen that Physical visit to borrower home and interviewing them and their neighbors and Demand for Guarantor / co-applicant who have a credit score/stable income are the most followed credit assessment methods followed by the Credit risk Managers with 42% and 31% Managers following these methods. 15% Managers follow ‘Assessment of Earning potential of borrower from the asset being borrowed’ as the credit assessment method. Only 9% and 3% Managers follow ‘Demand Additional collaterals to protect the loan repayment’ and ‘conducting psychometric test’ method of credit assessment respectively.

Identification of Loan default: Identifying the timely default by its delay is very important to avoid default and to take necessary action. From the above analysis we can see that with the current traditional methods majority of the managers are failing to identify the delayed payment getting converted in to default and ultimately NPA. The researcher has collected the data related to the time at which the delinquency gets identified by the credit Manager.

Table No. 2: Identification of Loan default

Sr.	Particular	No. of Respondents	%
1	After First delayed Instalment	70	22%
2	After Second delayed Instalment	46	14%
3	After more than 2 delayed instalments	73	23%
4	90 days after loan repayment default	129	41%
	Total	318	100%

The data presented above suggests that majority of the credit Managers are able to identify the loan default only after, 90 days after loan repayment default takes place. 41% of the respondent managers have this view. The time period for classification of a default loan as per RBI guidelines is 90 days. (RBI master circular) 23% of the respondent managers are able to identify the default loan after more than 2 delayed installments which is again more than 90 days. Thus it can be said that 64% of credit managers are able to identify the delayed payment as default only after it gets converted in to NPA. Only around 36% of the credit managers are able to identify the delayed payment getting converted in to default before it gets converted to NPA.

Thus, it can be said that the traditional methods are not much successful in identifying the loan delinquencies in time at later stages of loan, i.e. before they are converted in to NPA.

To check it statistically the researcher has also collected the Rural loan defaults proportion to the loans processed as suggested by the credit managers with and compared it with the NET NPA of the selected organization for the same period in which data was collected i.e. September 2020 NET NPA values of the selected NBFC.

Loan default proportion to the Loans Processed: To check the reliability of the opinion of Managers, of the data collected in the precious questions the researcher further has collected the data related to the proportion of loan defaults for their respective branches. The data has been analyzed further.

Table No. 3: Loan default proportion to the Loan Processed amount

Sr.	Particular	No. of Respondents	%
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1	Negligible	10	3%
2	Between 0% to 5%	144	45%
3	Between 5% to 10%	135	42%
4	Between 10% to 15%	2	1%
5	Between 15% to 20%	22	7%
6	Above 20%	5	2%
	Total	318	1

The formal data about the rural loan defaults is not available either as a secondary data i.e. for the entire country or for the selected NBFC. Thus to understand the average rural loan defaults as a proportion to loans processed in terms of amounts, the data was collected from the Credit managers of the rural branches. The data suggests that majority of the Managers i.e. 45% managers feel that the defaults are between 0% to 5% of the loan processed amount. 42% respondent Managers feel that the rural loan defaults are between 5% and 10% of the loans processed. Only 9% of respondent managers feel that the rural loan defaults are above 10% of the loans processed. And only 3% of the respondents feel that the defaults are negligible.

The data collected as such does not help us reach any conclusion as to the rural loan defaults are significantly different than the overall NPA's of the organization.

The researcher here first tried to find the association between the method used for assessment of Loan and the proportion of default and then method used for assessment of loan and time required to predict the loan default.

The results of Chi- Square test of association

Hypothesis 1.1 Analysis: The pre-loan assessment customer credit worthiness prediction has an association with Proportion of Loan defaults.

Chi-square Value = 21.1

Degrees of freedom = 20

Probability = 0.389 (p value)

Chi Square table Value = 31.41

Null Hypothesis accepted

Hypothesis 1.2 Analysis: The pre-loan assessment customer credit worthiness prediction has an association with time required for identification of loan default.

Chi-square Value = 25.1

Degrees of freedom = 12

Probability = 0.014 (p Value)

Chi Square table Value = 21.026

Alternate Hypothesis Accepted

From the above analysis it can be seen that the proportion of loan default do not have any direct association with method used for Loan assessment but has Loan assessment method has association with time required for identification of loan default. Thus the researcher has selected the parameter for further study and analysis. For the purpose the above data was compared with the overall NPA's of the organization of September 2020. Before and around which the data was collected.

The Overall Net NPA's in September 2020 stood at 4.68% of the advances (Mahindra finance results).

The researcher here uses the One sample T test to compare if the NPA values overall and Rural (based on the opinion of credit managers) are significantly different.

Table No. 4: One sample T Test

	Variable 1
Mean	5.731132075
Variance	16.39987947
Observations	318
Hypothesized Mean Difference	0
Df	317

t Stat	4.628609269
P(T<=t)	0.0000026877
t Critical	1.649674634

Inferences: In the above analysis as the 'p Value' (0.0000026877) is less than 0.05, the 't stat value' (4.63) is greater than 't Critical value' (1.65), the mean of the sample is statistically significantly different than the Overall NET NPA's of the selected NBFC. And as the Means default comes to be 5.73 which is higher than the Overall NET NPA's i.e. 4.68% of the selected NBFC. It can be said that the Rural NPA's are higher than the overall NPA's of the selected NBFC.

Thus from the data collected shows majority of the Credit Managers are able to identify the loan default only after, 90 days after loan repayment delay takes place. 41% of the respondent managers have this view. The time period for classification of a default loan as per RBI guidelines is 90 days. 23% of the respondent managers are able to identify the default loan after more than 2 delayed installments which is again more than 90 days. **Thus it can be said that 64% of credit managers are able to identify the delayed payment as default only after it gets converted in to NPA.**

Further the Rural loan defaults proportion is significantly different than that of the Overall NPA of the Selected NBFC as per the one tail t test results. And the Mean score of the Rural loan defaults proportion as given by the credit managers which comes to be 5.731132075 stands higher than the Overall NPA's of the organization i.e. 4.68 (September 2020), which suggests that the Rural defaults as per credit Managers is higher than that of Overall defaults of the selected NBFC. **Thus it can be said that the hypothesis 'The pre-loan assessment customer credit worthiness prediction and offering methods do not have any impact on rural customer in controlling loan defaults at later stages of loans' is accepted'**

5. Conclusion

The pre loan assessment methods are the major and in many cases the only tool used by the credit managers for assessment of credit worthiness. The methods have been useful for the loan disbursement decision and the methods may not have an association with proportion of loan default but has an association with time period required for identification of loan default and when checked the usefulness of the same methods at later stages to see if the methods are able to identify the loan defaults in time, it can be seen that the results of the study suggest that the methods are not suitable. Thus it is necessary for the financial institutes and credit managers to adopt separate and more effective methods for the identification of the same.

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