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Impact of NPA on profitability in microfinance industry of India: A comparative study on some selected microfinance companies

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Abstract

According to financial reports, people in West Bengal has a higher tendency of neglecting microfinance loan, which increases the amount of Non-performing Asset (NPA) in the Microfinance Companies (MFC). This paper is aimed to check the impact of NPA on profitability of microfinance companies in India from the angle of four selected microfinance companies. This study is performed with secondary data collected for the period of 2018-2023 from money control website and the considered companies are, Bandhan Bank Ltd., Ujjivan Small Finance Bank, Equitas Small Finance Bank, and Suryoday Small Finance Bank. Six financial parameters, named, Net Profit (NP), Return on Asset (ROA), Return on Capital Employed (ROCE), Current and Saving Account Ratio (CASA), Return on Equity (ROE) and revenue are considered as the dependent variables used to measure profitability and Gross Non-performing Asset (GNPA) and Net Non-performing Asset (NNPA) are the independent variables which represent NPA. The correlation is tested with Spearman's rank correlation coefficient and t-test. The t-test result of Equities Bank shows that both GNPA and NNPA have correlation with all parameters except Net Profit. Bandhan Bank shows CASA, ROA ROE are correlated to GNPA, however, NNPA has correlation with CASA. The result of other two companies establish correlation of NPA to revenue, ROA, and CASA. This study concludes that GNPA has a significant impact on the profitability of the discussed microfinance companies, however the impact of NNPA is comparatively less significant than GNPA.

Keywords: NPA, ROE, CASA, financial analysis, microfinance, profitability

Introduction

A recent report by the Times of India states that the banking industry shows a 3% growth in the financial year 2023 whereas the microfinance industry of India grew by 37% in that period¹. In the last financial year, the number of loan accounts increased by 125 lakhs. Micro Finance Industry (MFI) is the sector that offers financial services to the low income group, plays a huge role in reducing poverty in the state of West-Bengal (Naskar, 2022)^[7] as it gives loan to woman that helps to reduce the need of money in a family. However, West Bengal shows a high tendency of ignoring the payment. According to credit bureau data 4.8% of borrowers in West-Bengal have an overdue for more than 90 days². Along with West-Bengal Tamil Nadu and Bihar also show high delinquency tendency with a higher borrower number who did not pay their dues. This behaviour increases the amount of Non-Performing Asset (NPA). It is the loan for which the payment remains overdue for a period of 90 days or more. There are two metrics that indicates the situation of a bank's or finance company's NPA, Gross Non-Performing Asset (GNPA) is the absolute amount of NPA for a financial year, Net Non-Performing Asset (NNPA) is the remaining value which comes after subtracting the bank's provision.

¹ <https://timesofindia.indiatimes.com/business/india-business/microfinance-sector-post-21-growth-in-fy23/articleshow/100602178.cms?from=mdr>

² <https://timesofindia.indiatimes.com/business/india-business/west-bengal-tops-in-microfinance-defaults-credit-bureau-data/articleshow/99112218.cms?from=md>

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This paper tests the correlation between NPA on profitability and its effect on profitability in the micro finance industry of India considering both GNPA and NNPA. This study uses the financial data of four renowned micro finance companies in India those comes under the top 10 microfinance companies³ for the year 2023.

Literature Review

- (Koirala, 2009) ^[4] Checked the impact of NPA on profitability of microfinance companies in Nepal, along with the internal and external factors that increase NPA and relation between NFA and NPA. This research performed analysis on both primary data and secondary data using tools like correlation and t-test. It concluded that loan loss provision causes a negative growth in net profit.
- (Banu, 2018) ^[1] Empirically examined the same and performance of banking sector. It had considered a ten years data from 2008 to 2017. It used the parameters ROE and ROA, and reached to a conclusion that there is a correlation between NPA to ROE and NPA to ROA.
- (Kumari, 2018) ^[5] Checked the dependency of profitability on NPA any credit growth of private sector banks in the state of Bihar in India. The study considered primary data, collected from bank employed through a questionnaire to check the effect on profitability. For the effect on credit growth, it considered secondary data collected from RBI website and other reports. It obtained an increasing NPA affects both profitability and credit growth.
- (Joseph Antony, 2021) ^[3] evaluated the same with respect to selected non-banking companies, it uses ranking correlation to check relation between different profitability parameters and NPA.
- (Lakshmi, 2022) ^[6] Examined the same for public and private sector banks using regression analysis on secondary financial data of some renowned banks. The study took data for the period of 2011 to 2020, it did not find any significant correlation between NPA and profitability of those banks for the mentioned period.
- (Fatima, 2022) ^[2] Performed linear regression on secondary banking data to evaluate the influence of NPA on stability and efficiency of Indian banks. The study considered the data for a period of 18 years and concluded ROA and ROE have a strong negative relation with NPA.
- (Ponnumani, 2023) ^[8] Analysed the secondary data of

some public and private sector bank to measure the performance of public and private sector banks in managing NPA and their profitability. Using CAMEL model and rank correlation, it concluded that private sector banks perform better in managing NPA and profitability.

Most of the available literature checked the impact of NPA in banking sector. Though few research papers work on some specific non-banking companies, no study had been conducted on Indian microfinance companies. Most of the studies used ROA, ROE and net profit as the indicator or profitability.

Objectives

- To analyse the effect of NPA on profitability on some selected micro finance industries in India.
- To study the influence of NPA on the performance of selected micro finance industries in India.
- To examine the influence of NPA on the effectiveness of the management of selected micro finance industries in India.

Research Methodology

Nature of Data	Secondary data ⁴
Type of Data	Financial
Source of Data	Financial Statement of selected micro finance industries
Timespan for the study	2018 to 2023
Parameters	Gross NPA Net NPA Revenue Return on Capital Employed (ROCE), (CASA) Return on Asset (ROA) Return of Equity (ROE) Net Profit
Correlation analysis	Spearman's rank correlation
Hypothesis testing	Two tailed t-test

Data Analysis

1. This Table shows the value of gross NPA, Net NPA, Revenue, ROCE, CASA, ROA, ROE and Net profit of Bandhan Bank for the period of 2018 to 2023.

³ <https://www.inventiva.co.in/trends/microfinance-companies-in-india-in-2023>

⁴ <https://www.moneycontrol.com>

Table 1: Shows the value of gross NPA, Net NPA, Revenue, ROCE, CASA, ROA, ROE and Net profit of Bandhan Bank for the period of 2018 to 2023

Parameters	2023	2022	2021	2020	2019	2018
GNPA	5,298.62	6,380.00	5,757.76	992.78	819.56	373.14
NNPA	1,228.27	1,564.23	2,861.03	389.40	228.32	172.90
Revenue	18,373.25	16,693.94	14,633.27	12,434.69	7,706.42	5,508.48
ROCE	4.65	5.99	6.1	6.14	6.82	5.58
CASA	39.28	41.6	43.38	36.83	40.75	34.32
ROA	1.56	0.11	2.13	3.64	4.23	4.06
ROE	11.2	0.72	12.66	19.89	17.42	3.03
Net Profit	2,194.64	125.79	2,205.46	3,023.74	1,951.50	1,345.56

2. This Table represents the value of Gross NPA, Net NPA, Revenue, ROCE, CASA, ROA, ROE and Net

profit of Ujjivan Small Finance Bank for the time span of 2018 to 2023.

Table 2: Show Ujjivan Small Finance Bank for the time span of 2018 to 2023

Parameters	2023	2022	2021	2020	2019	2018
GNPA	630.61	1,284.08	1,070.60	137.14	97.85	275.92
NNPA	9.04	99.6	424.58	27.49	27.55	224.99
Revenue	4,754.19	3,126.07	3,116.89	3,025.81	2,037.57	1,579.36
ROCE	4.58	2.58	4.12	3.55	2.31	3.44
CASA	26.41	27.29	20.55	13.53	10.62	3.67
ROA	3.3	-1.75	0.04	1.9	1.44	0.07
ROE	27.43	-15.92	0.27	11.71	12.3	0.47
Net Profit	1,099.92	-414.59	8.3	349.92	199.22	6.86

3. This Table declares the value of Gross NPA, Net NPA, Revenue, ROCE, CASA, ROA, ROE and Net profit of Equitas Small Finance Bank for the period of 2018 to 2023.

Table 3: Show Bank for the period of 2018 to 2023

Parameters	2023	2022	2021	2020	2019	2018
GNPA	723.96	837.18	642.78	417.32	295.71	212.53
NNPA	312.02	479.48	266.17	247.61	186.41	131.5
Revenue	4831.46	3997.23	3612.47	2927.8	2394.83	1,783.93
ROCE	3.5	3.37	3.7	3.2	2.79	1.72
CASA	0	52	34.24	20.46	25.25	29.22
ROA	1.82	1.07	0.44	1.38	1.43	0.3
ROE	11.12	6.61	11.31	8.87	9.34	1.55
Net Profit	573.59	280.73	384.22	243.64	210.57	31.83

4. This Table represents the value of Gross NPA, Net NPA, Revenue, ROCE, CASA, ROA, ROE and Net profit of Suryoday Small Finance Bank for the time span of 2018 to 2023.

Table 4: Show Suryoday Small Finance Bank for the time span of 2018 to 2023

Parameters	2023	2022	2021	2020	2019	2018
GNPA	191.40	597.42	393.68	101.25	49.62	56.57
NNPA	92.97	283.37	188.12	20.37	12.01	29.23
Revenue	1281.1	1035.38	875.63	854.14	597.03	324.93
ROCE	3.54	3.35	2.78	5.9	5.89	3.5
CASA	0	18.8	15.44	11.44	11.24	11.02
ROA	0.78	-1.13	0.17	2.06	2.3	0.46
ROE	4.9	-6.18	0.74	10.4	9.83	1.87
Net Profit	77.7	-93.03	11.86	110.94	86.6	10.13

Findings

1. Spearman's rank correlation analysis

a) This Table shows the correlation between GNPA with

other variables such as Revenue, ROCE, CASA, ROA, ROE and Net profit.

Table 5: Show Revenue, ROCE, CASA, ROA, ROE and Net profit

Microfinance Company	GNPA-Revenue	GNPA-ROCE	GNPA-CASA	GNPA-ROA	GNPA-ROE	GNPA-Net Profit
Bandhan Bank	0.8286	-0.1429	0.7714	-0.8857	-0.3143	-0.02857
Ujjivan Small Finance Bank	0.6571	0.4286	-0.7174	-0.2574	-0.3714	-0.1429
Equitas Small Finance Bank	0.943	0.7714	0.2	0.3143	0.3143	0.8286
Suryoday Small Finance Bank	0.7714	-0.6571	0.6	-0.8285	-0.7143	-0.549

Interpretation

- By analysing this Table, it can be implied that Bandhan Bank has a highly positive correlation between GNPA to Revenue and GNPA to CASA. Moreover, GNPA of Bandhan Bank shows a high negative correlation with ROA and a low negative correlation with ROCE and ROE.
- The above Table states that GNPA of Ujjivan Small Finance Bank has a highly positive correlation with Revenue and a low positive correlation with ROCE. It shows a highly negative correlation with CASA and a low negative correlation with all the other parameters.
- Equitas Small Finance Bank shows positive correlation

between GNPA and all other parameters. For this company, GNPA has a highly positive correlation with Revenue, ROCE and Net Profit, and it has a low positive correlation with CASA, ROA and ROE.

- The Table shows highly positive correlation between GNPA and Revenue, and GNPA and CASA for Suryoday Small Finance Bank. It also shows highly negative correlation between GNPA with ROCE, ROA, ROE and Net Profit.

b) This Table shows the correlation between NNPA with other variables such as Revenue, ROCE, CASA, ROA, ROE and Net profit.

Table 6: Show NNPA with other variables such as Revenue, ROCE, CASA, ROA, ROE and Net profit

Microfinance Company	NNPA-Revenue	NNPA-ROCE	NNPA-CASA	NNPA-ROA	NNPA-ROE	NNPA-Net Profit
Bandhan Bank	0.7714	-0.0857	0.8286	-0.7714	-0.1429	0.2
Ujjivan Small Finance Bank	-0.371	-0.2	-0.2	-0.8286	-0.7714	-0.7714
Equitas Small Finance Bank	0.9429	0.7714	0.2	0.3143	0.3143	0.8286
Suryoday Small Finance Bank	0.6571	-0.3143	0.3143	-0.0857	-0.3714	-0.257

Interpretation

- The above Table shows a highly positive correlation between NNPA with Revenue and CASA for Bandhan Bank and a low positive correlation between NNPA and Net Profit. However, it shows a highly negative correlation between NNPA with ROCE and ROA, and a low negative correlation between NNPA and ROE.
- NNPA of Ujjivan Small Finance Banks shows a low negative correlation with Revenue, ROCE and CASA for the time period. On the contrary, it has a highly negative correlation with ROA, ROE and Net Profit.
- In case of Equitas Small Finance Bank, the Table shows a highly positive correlation between NNPA with Revenue, ROCE and Net Profit, and a low positive

correlation between NNPA to CASA, ROA and ROE.

- The above Table establishes a highly positive correlation between NNPA and Revenue of Suryoday Small Finance Bank along with a low positive correlation between NNPA and CASA. NNPA of this micro finance company has a low negative correlation between NNPA with ROCE, ROA, ROE and Net Profit.

2. Hypothesis Testing (T-test)

- a) **H₀:** There is no significant effect of GNPA on Revenue, ROCE, CASA, ROA, ROE and Net profit.
H₁: There is a significant effect of GNPA on Revenue, ROCE, CASA, ROA, ROE and Net profit.

Table 7: Show Hypothesis testing value for GNPA

Parameters	Bandhan Bank		Ujjivan Small Finance Bank		Equitas Small Finance Bank		Suryoday Small Finance Bank	
	T Value	P value	T Value	P Value	T Value	P Value	T Value	P Value
Revenue	-3.924	0.0111	-4.782	0.005	-5.884	0.002	-3.652	0.0147
ROCE	2.8428	0.0361	2.1126	0.0883	5.0793	0.0038	2.5305	0.0525
CASA	2.8137	0.0374	2.0432	0.0965	4.8348	0.0047	2.45	0.058
ROA	2.8456	0.0360	2.1258	0.0869	5.0987	0.0038	2.5682	0.0501
ROE	2.8385	0.0363	2.0983	0.0899	5.029	0.004	2.5359	0.0522
Net Profit	1.2021	0.2832	0.7390	0.4931	1.8567	0.1225	2.0822	0.0919

Interpretation

- All the parameters Revenue (0.01), ROCE (0.04), CASA (0.04), ROA (0.04), ROE (0.04) have significance value less than 0.05, hence it can be concluded that the null hypothesis has been rejected for all the parameters except Net Profit, i.e., GNPA has a significant effect on Revenue, ROCE, CASA, ROA, ROE.
- The t-test value of Ujjivan Small Finance Bank for GNPA with Revenue gives a significance value of 0.005 which successfully rejects H₀.
- Equitas Small Finance Bank shows a significance value

less than 0.05 for Revenue (0.002), ROCE (0.004), CASA (0.005), ROA (0.004), and ROE (0.004), hence it concludes that GNPA has effect on all the profitability metrics in case of this company.

- The significance value of t-test for Revenue comes as 0.0147 hence it rejects null hypothesis as the value is less than considered significance level.

b) **H₀:** There is no significant effect of NNPA on Revenue, ROCE, CASA, ROA, ROE and Net profit.
H₁: There is a significant effect of NNPA on Revenue, ROCE, CASA, ROA, ROE and Net profit.

Table 8: Hypothesis testing value for NNPA

Parameters	Bandhan Bank		Ujjivan Small Finance Bank		Equitas Small Finance Bank		Suryoday Small Finance Bank	
	T Value	P Value	T Value	P Value	T Value	P Value	T Value	P Value
Revenue	-5.435	0.0029	-6.188	0.0016	-6.547	0.0012	-4.755	0.0051
ROCE	2.5053	0.0541	1.9903	0.1032	5.4474	0.0028	1.6189	0.1664
CASA	2.4267	0.0596	1.7828	0.1347	4.9133	0.0044	1.5799	0.175
ROA	2.5129	0.0536	2.0293	0.0982	5.4876	0.0027	1.6373	0.1625
ROE	2.4936	0.0549	1.9431	0.1096	5.3414	0.0031	1.6218	0.1658
Net Profit	-1.252	0.266	-0.335	0.7519	-0.190	0.8568	1.4373	0.2101

Interpretation

- On a two tailed t-test with NNPA, Revenue of Bandhan bank gives a significance value (0.003) less than 0.05, which concludes a rejection of H₀.
- The t-test value of Ujjivan Small Finance Bank for NNPA to Revenue gives 0.0016, hence H₀ is rejected for Revenue.
- Equitas Small Finance Bank shows a significance value less than 0.05 for Revenue (0.001), ROCE (0.003), CASA (0.004), ROA (0.003), and ROE (0.003), which

concludes an acceptance of H₁.

- The significance value of t-test for Revenue comes as 0.005 for Suryoday Small Finance Bank, hence alternative hypothesis is accepted here.

Conclusion

This paper examined the effect of NPA on Profitability in the microfinance industry of India. A highly positive correlation between Revenue and GNPA established by Spearman's Rank Correlation indicates that the generation

of revenue is highly affected by the movement of gross NPA. Net NPA shows a similar trait for the studied microfinance companies except for Ujjivan Small Finance Limited, hence it may need further research. For the rest of the parameters, the effect of NPA varies from company to company except for Equitas Small Finance Bank. For the studied time period, NPA had a positive effect on the profitability of this company. With hypothesis testing verifies the above-discussed result. It shows a significant impact of NPA on Revenue. The hypothesis testing also establishes an impact of NPA on the profitability of Equitas Small Finance Bank.

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