



AN EMPIRICAL STUDY ON THE IMPACT OF NPAs ON PROFITABILITY METRICS OF INDIAN PRIVATE SECTOR BANKS

¹Dr. Bipin Namdev Bandekar, ²Mrs. Krupa Ketan Mayenkar, ³Mrs. Sindura Vishant Malik

¹Associate Professor, ²Assistant Professor, ³Assistant Professor,

Department of Commerce

Narayan Zantye College of Commerce, Bicholim, Goa, India

Abstract:

The economic performance of a country is intrinsically linked to the strength and efficiency of its banking sector, which plays a pivotal role in facilitating economic growth. Since the liberalization of the Indian economy in the 1990s, significant reforms have been introduced to enhance the productivity and operational effectiveness of banking institutions. These measures have contributed to the rapid expansion of the Indian banking industry, particularly within the private sector.

This study examines the impact of Non-Performing Assets (NPAs) on the profitability of private sector banks in India. Using descriptive statistics, correlation matrix, and panel data regression analysis on data spanning from 2004–05 to 2013–14, the study investigates how asset quality, measured through key NPA indicators, affects bank profitability. The empirical findings reveal that variables such as Gross NPA to Gross Advances, Net NPA to Net Advances, Gross NPA to Total Assets, and Net NPA to Total Assets exert a statistically significant and negative influence on profitability.

Furthermore, the study reveals a clear correlation between increasing NPA levels and deteriorating financial performance, as indicated by key indicators such as Net Interest Margin (NIM), Return on Assets (ROA), and Return on Equity (ROE). The results suggest that banks with higher profitability tend to engage in more prudent lending practices, thereby mitigating the risk of asset deterioration. Overall, the study underscores the crucial role of effective NPA management in maintaining the financial health and profitability of private sector banks in India.

Keywords: Non-Performing Assets, Profitability, Private sector banks, Panel Data Regression.

1. INTRODUCTION.

The banking sector serves as a cornerstone of economic development, primarily through the facilitation of financial transactions and the implementation of monetary policies. Banks offer a diverse array of services including deposit accounts, credit facilities, and loan products while functioning as financial intermediaries that channel funds from savers to borrowers. Their principal revenue source is derived from the net interest spread, which represents the differential between interest earned on loans and interest paid on deposits. However, the emergence of Non-Performing Assets (NPAs), defined as loans or advances for which the principal or interest payment remains overdue beyond a stipulated period, poses a significant threat to the financial performance of banks. Non-performing assets are loans where borrowers have failed to meet interest and/or principal payments for a specified period, typically 90 days. NPAs not only erode profitability but also obscure the true financial health of banks due to inadequacies in accounting

transparency. Contributing factors include sub-optimal client evaluation and credit appraisal processes, which result in the locking up of funds and diminished earnings potential—both current and future. Furthermore, the proliferation of NPAs may restrict avenues for long-term investment and exert downward pressure on interest income, thereby exacerbating the decline in profitability. In the Indian context, the issue of NPAs gained prominence during the 1980s, coinciding with broader global financial transformations, and was compounded by inadequate disclosure standards and latent weaknesses within bank balance sheets. Addressing the NPA challenge is imperative for ensuring the robustness of the banking system and fostering sustainable economic growth. The Reserve Bank of India's (RBI) 'Trend and Progress of Banking in India 2023-24' report noted that, as of September 2024, the gross NPA ratio for Indian banks had declined to a 13-year low of 2.5%, with net NPAs also decreasing. This improvement was attributed to enhanced loan-loss provisions and better asset quality, particularly among private sector banks.

The primary objective of this study is to critically examine the impact of Non-Performing Assets on the profitability metrics of private sector banks in India.

2. LITERATURE REVIEW

Kabra (2010) analysed the sensitivity of non-performing loans to macroeconomic factors and bank specific factors by using regression analysis and a panel data for 10 years ranging from 1998-99 to 2008-09 and found that both bank specific factors and macroeconomic factors showed their impact on the loan portfolios of Indian banks.

Shah (2018) analysed the movement and trend of NPAs in Scheduled Commercial Banks in India over 5 years i.e. 2013 to 2017 and critically examined the impact of NPAs on performance of banks and the effectiveness of measures taken by the Government & RBI to control and reduce NPAs in banks.

Shivrajappa M. (2018) discussed the conceptual framework of NPA and highlighted the trends, status and impact of NPA on scheduled commercial banks during the period of 14 years i.e. from 2000 to 2014. The study infers that money locked up in NPAs has a direct impact on profitability of the banks as Indian banks are highly dependent on income from interest on funds lent. The study also shows that extent of NPA is comparatively very high in public sectors banks and NPAs level of Indian banks is still high as compared to the foreign banks.

Prasad et al. (2020) highlighted the effect of Non-performing Assets on the profitability of Nepalese commercial banks. The appraisal of private part banks uncovers that the development pace of NPAs is low when contrasted with the administration claimed Agriculture Development Banks. Besides, the effect of NPA on profitability has been done as positive in relationship. **Soni and Tiwari (2020)** explored the challenges in Indian banking sector with special emphasis on the rising problem of non-performing assets of the banks in India. Three independent factors were taken into consideration representing different factors affecting the financial performance of banks specifically- Net NPA Ratio, Current Ratio and Capital Adequacy Ratio. The analysis also showed the financial performance of each banks and gave useful insights on the overall condition of the private sector banks in India.

Chaudhary and Patel (2020) considered Gross and Net NPA of 10 banks, five Public & five Private sector banks from the period of 2015 to 2019 for the study and identified that both the public and private sector banks gradually increase their Gross & Net NPA during the study period. It also inferred that there is a significant positive relationship between Gross NPA and Net NPA of public and private sector banks. The study also found a significant negative relationship between NPA with Return on Assets of public & private sector banks. The impact of public and private sector banks significantly influences the Gross and Net NPA.

Singh and Sneha (2021) presented a comprehensive analysis of literature in the context of NPA and its impact on the performance of private sector banks. NPAs are a major source of worry for public sector banks than private sector banks, as they must be managed and regulated. They had a review on the banking system in India, NPA, NPA rise, extent and effect and suggested govt. measures to solve NPA. **Mohanty S. (2021)** studied the relationship between NPA with the key parameters of selected banks and

finds out the impact of NPA on Net profit and Return on Assets (ROA) of the selected banks. **Kumar and Kaur (2021)** evaluated the impact of determinants on gross non-performing assets of Private Sector Banks and concluded that Private Sector Banks were influenced by bank specific determinants. Bank specific determinants were negatively and significantly associated with the level of NPAs.

Gupta and Modi (2021) evaluated how differently NPAs affect the financial statements of Public Sector Banks (PSBs) and private sector banks (PVBs). Pearson's correlation coefficient has been used to find out the correlation between NPAs of banks with their net profits. The research resulted into an interesting finding that all selected six PSBs were found to have a negative correlation between NPAs and net profits whereas and only two out of six selected PVBs resulted into negative correlation of NPAs and net profits. The rest four PVBs resulted into a positive correlation with their net profits which technically proves that their other incomes are high enough to absorb the losses by their NPAs and still be able to add it to their net profits. It also reflects that that PVBs are far ahead in managing their stressed assets than PSBs. The study also evidently proves that a continuous increasing trend in net NPAs is seen more prominent in public sector banks in comparison to private sector banks.

Mohan (2022), concluded that NPA have a significant negative impact on profitability of scheduled commercial banks measured using return on assets and return on equity. Besides this, several other bank specific characteristics were also included showing that while net interest margin and non-interest income have a positive effect on bank profits, rising wage bill has a negative impact on return on equity and return on assets. **Bondu (2022)** performed a comparative analysis of NPAs' impact on the profitability of private and public sector banks in India. The study found that public sector banks are more prone to higher NPAs compared to private sector banks, which in turn significantly affects their profitability.

Singh and Chaturvedi (2023) explored the strategies employed by public and private sector banks in managing NPAs. Their comparative study highlighted that private sector banks, owing to robust risk management and stringent credit appraisal processes, have demonstrated superior asset quality and profitability compared to their public sector counterparts.

Srinivas and Pawar (2023) conducted a ten-year analysis (2012–13 to 2021–22) on the influence of NPAs on the financial performance of both public and private sector banks. Their findings indicated that while NPAs negatively impact profitability across the board, private sector banks have managed to mitigate these effects more effectively through better asset quality and operational efficiency.

Sahithi and Yadav (2024) explored the significant influence of NPAs on the profitability of financial institutions. The study found that the escalation of NPAs can adversely affect the profitability of banks and financial entities. As NPAs increase, institutions must allocate more resources as provisions to mitigate potential losses from these delinquent loans, thereby reducing overall profits. Effective management of NPAs is crucial for maintaining a strong financial bottom line.

Gupta and Dongre (2024) conducted a comprehensive study analyzing the impact of NPAs on the profitability performance of selected public and private sector banks in India from 2018–19 to 2022–23. Utilizing key ratios such as Gross NPA (GNPA), Net NPA (NNPA), and Return on Assets (ROA), the study revealed a significant negative correlation between NPAs and profitability, emphasizing that higher NPAs adversely affect the financial performance of banks.

Bandekar and Mayenkar (2024) assessed the influence of NPAs on the profitability of selected public sector banks in India for the period 2004-05 to 2013-14 using panel data techniques and found that Gross NPA to Gross Advances and Net NPA to Net Advances, exhibit a significant and adverse effect on the profitability of public sector banks.

3. RESEARCH METHODOLOGY

3.1 Data Sampling

The study covers 20 private sector banks in India. The top 20 Private Sector Banks used for the study are ICICI Bank, AXIS Bank, Kotak Mahindra Bank, HDFC Bank, South Indian Bank, City Union Bank, RBL Bank, Jammu and Kashmir Bank, Karnataka Bank Ltd., DCB Bank Limited, Tamilnad Mercantile Bank Ltd, IndusInd Bank, Federal Bank, ING Vysya Bank, Dhanlaxmi Bank, Karur Vysya Bank, IDBI Bank,

Lakxmi Vilas Bank and CSB Bank.

3.2 Data and Sources of data

The data used for the study is for the period of 10 years from 2004-05 to 2013-14. The data required for the study are drawn from the Secondary sources i.e. websites, reports etc. The data on Gross Advances, Total Assets, Ratios of Gross NPA (GNPA) and Net NPA (NNPA) of Private Sector banks is collected from RBI bulletins, RBI reports and websites of every bank.

3.3 Theoretical Framework

3.3.1 Dependent variables

Dependent variables applied in the study are Ratio of Interest Income to Total Asset (IITA), Ratio of Net Interest Margin to Total Asset (NIMTA), Return on Asset (ROA), Return on Equity (ROE). These variables are used as proxies for banks profitability.

Ratio of Interest Income to Total Asset is calculated by dividing interest earned with total assets.

Ratio of Net Interest Margin to Total Asset is calculated as net interest income divided by average interest earning assets.

Return on Assets (ROA) is a profitability ratio which indicates the net profit (net income) generated on total assets. It is calculated as $(\text{Profit after tax} / \text{Total assets}) * 100$.

Return on Equity (ROE) is a ratio relating net profit to shareholders' equity which refers to share capital reserves and surplus. It is calculated by applying this formulae $\text{Profit after tax} / (\text{total equity} + \text{total equity at the end of previous year}) / 2 * 100$.

3.3.2 Independent variables

The independent variables are Gross Non-Performing Asset to Gross Advances (GNPAGA), Net Non-Performing Asset to Net Advances (NNPANA), Gross Non-Performing Asset to Total Asset (GNPATA), Net Non-Performing Asset to Total Assets (NNPATA). All ratios are measured in percentage.

Gross NPA denotes the total of all the loan assets that haven't been repaid by the borrowers within the ninety-day period. Whereas Net NPA is the amount remaining after deducting doubtful and unpaid debts from the Gross NPA. Both are measured in Rupees Crores.

GNPA to GA is the ratio of Gross Non-Performing Assets to Gross advances.

NNPA to NA is the ratio Net Non-Performing Assets to Net advances.

GNPA to TA is the ratio of Gross Non-Performing Assets to Total Assets.

NNPA to TA is the ratio of Net Non-Performing Assets to Total Assets.

3.3.3 Hypotheses

Following hypotheses are framed to achieve the above objectives:

H₀: There is no significance difference between NPA and ratio of IITA.

H₀: There is no significance difference between NPA and ratio of NIMTA.

H₀: There is no significance difference between NPA and ROA.

H₀: There is no significance difference between NPA and ROE.

3.4 Statistical Tools and Econometric Models

This section elaborates the statistical/econometric models which are being used to forward the study from data towards inferences. The detail of methodology is given as follows.

Descriptive statistics, Correlation matrix and Regression analysis are used to analyse the impact of NPA on profitability of Indian private sector banks. The collected data have been analysed with the help of panel data Regression.

1. Descriptive Statistics:

Descriptive Statistics is a method of organizing, summarizing, and presenting data in an informative way. Descriptive Statistics is used to understand the Measures of Central Tendency i.e. Mean, Minimum value, Maximum value, Measures of Dispersion i.e. Standard Deviation (SD) of all the variables.

2. Correlation matrix

Correlation analysis is one of the methods of determining the relationship between the variables. Karl Pearson's coefficient of correlation (Simple correlation) is the most widely used method of measuring degree of relationship between the two variables.

The value of correlation „relies between +1 and -1. Positive value of „r“ indicates positive correlation between the two variables, (i.e. changes in both variables take place in the same direction), and whereas negative value of „r“ indicate negative correlation i.e. changes in two variables taking place in the opposite direction. A zero value of „r“ indicate that there is no association between the two variables. If the value of „r“ is +1, it indicates perfect positive correlation and when it is -1, it indicates perfect negative correlation. The value of „r“ nearer to +1 or -1 indicates high degree of correlation between the two variables.

3. Regression Analysis

Regression is the determination of a statistical relationship between two or more variables. There are two types of regression i.e. Simple and Multiple Regressions. But the present study covers multiple regressions.

Multiple Regression Equation: $\hat{Y} = a + b_1X_1 + b_2X_2 + \dots + b_nX_n$

Where, $\hat{Y}$ = Estimated value of Y for given value of X

X_1, X_2 to X_n are independent variables, Y is dependent variable, a is a constant and b_1, b_2 to b_n are regression coefficients.

In Multiple Regression Analysis, the regression coefficients (b_1 and b_2) become less reliable as the degree of correlation between the independent variables (X_1 and X_2) increases. If there is high degree of correlation between the independent variables, there are chances of problem of multicollinearity. Prediction for the dependent variable can be made even multicollinearity is present but it is necessary to ensure that multicollinearity is reduced to the minimum.

The econometric models used in the study are as follows:

Model I

Ratio of interest income to Total Asset_{it} = $\alpha + \beta_1X_{1it} + \beta_2X_{2it} + \beta_3X_{3it} + \beta_4X_{4it} + \mu_{it}$

Model II

Ratio of Net Interest Margin to Total Asset_{it} = $\alpha + \beta_1X_{1it} + \beta_2X_{2it} + \beta_3X_{3it} + \beta_4X_{4it} + \mu_{it}$

Model III

Return on Asset_{it} = $\alpha + \beta_1X_{1it} + \beta_2X_{2it} + \beta_3X_{3it} + \beta_4X_{4it} + \mu_{it}$

Model IV

Return on Equity_{it} = $\alpha + \beta_1X_{1it} + \beta_2X_{2it} + \beta_3X_{3it} + \beta_4X_{4it} + \mu_{it}$

X_1, X_2 to X_n are independent variables, α is constant and b_1, b_2 to b_n are regression coefficients, i is individual bank, t is time i.e. Year and μ is error term.

4. Results and Discussion

Descriptive statistics, Correlation matrix and Regression analysis are used to analyse the impact of NPA on profitability of Private Sector banks in India. The collected data have been analysed with the help of panel data Regression.

4.1 Descriptive Statistics:

Table 1: Descriptive Statistics of Variables of Private Sector Banks

Variable	Mean	Median	S.D.	Min	Max
GNPA	921.	309.	1.95e+003	10.6	1.05e+004
NNPA	355.	107.	756.	5.45	4.90e+003
TA	6.97e+004	2.31e+004	1.14e+005	870.	5.95e+005
ROA	0.990	1.15	0.760	-3.38	2.13
ROE	11.9	13.9	10.8	-63.8	25.8

Source: Authors Compilation

Interpretation:

Table 1 shows that the GNPA of 20 Private Sector Banks on an average is ₹ 921 crores, minimum GNPA is ₹ 10.60 crores, maximum is ₹ 10500 Crores, standard deviation is ₹ 1950 crores. The average NNPA is ₹ 355 crores, minimum is ₹ 5.45 crores, maximum is ₹ 4900 crores, Standard deviation is ₹ 756 crores. The average TA is ₹ 69700 Crores, minimum is ₹ 870 Crores, maximum is ₹ 59500 crores, Standard deviation is ₹ 11400 Crores. The average ROA is 0.99 %, minimum is -3.38 %, maximum is 2.13 %, Standard deviation is 0.76 %. The average ROE is 11.9 %, minimum is -63.8 %, maximum is 25.8 % and Standard deviation is 10.84 %.

4.2 Correlation Matrix

Table 2: Correlation Matrix of Variables of Private Sector Banks

(5% critical value (two-tailed) = 0.1388 for n = 200)

GNPAG A	NNPAN A	IITA	NIMTA	ROA	ROE	GNPATA	NNPATA	
1.0000	0.6924	-0.1833	-0.1024	-0.6146	-0.6298	0.9028	0.7335	GNPAG A
	1.0000	-0.0430	-0.1266	-0.6261	-0.6330	0.7478	0.8577	NNPAN A
		1.0000	0.4030	0.2969	0.2808	-0.1620	-0.1264	IITA
			1.0000	0.3940	0.2764	-0.0791	-0.2153	NIMTA
				1.0000	0.9015	-0.6128	-0.7061	ROA
					1.0000	-0.6317	-0.6560	ROE
						1.0000	0.8158	GNPATA
							1.0000	NNPATA

Source: Authors Compilation

Interpretation:

Table 2 Shows that there is very high correlation of more than (0.80) between ROE and ROA (0.90), GNPA to TA and GNPA to GA (0.902), NNPA to TA and NNPA to NA (0.85), NNPA to TA and GNPA to TA (0.81). It also shows that there is very low correlation of less than (0.20) between IITA and GNPA to GA (-0.18), IITA and NNPA to NA (-0.04), NIMTA and GNPA to GA (-0.10), NIMTA and NNPA to NA (-0.12), GNPA to TA and IITA (-0.16), GNPA to TA and NIMTA (-0.07), NNPA to TA and IITA (-0.126). All others have medium correlation (0.21 to 0.80).

4.3 Regression Analysis

4.3.1 Analysis of Impact of NPAs on Interest Income to Total Assets

Table 3 - Regression Analysis of NPA on IITA of Private Sector Banks

Dependent Variable: Ratio of Interest Income to Total Assets of Private Sector Banks					
	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	8.73925	0.144164	60.62	<0.0001	***
GNPA to GA	-0.116324	0.0812538	-1.432	0.1539	
NNPA to NA	0.352063	0.159102	2.213	0.0281	**
GNPA to TA	-0.823920	19.0081	-0.04335	0.9655	
NNPA to TA	-45.3076	33.9601	-1.334	0.1837	
R ²	0.057420				
Adjusted R ²	0.038085				
F	2.969752				
P Value	0.020676				

Source: Authors Compilation

*** Significant at 1% level ** Significant at 5 % level * Significant at 10% level

Interpretation:

Table 3 depicts the impact of selected factors measured on IITA. Analysis shows that the listed factors have caused variation of 5% as value of R² stands at 0.057. The null hypothesis “There is no significant difference between NPA and ratio of IITA” fails to reject with respect to GNPA to GA, GNPA to TA and NNPA to TA, since the P value is more than 0.05.

The t-test shows negative but insignificant impact of independent variables GNPA to GA, GNPA to TA and NNPA to TA on dependent variable IITA. But, NNPA to NA has positive and significant impact on IITA, since its P value is 0.02, which is less than 0.05, thus significant at 5 % level. Model has been found fit as F value is 2.969752 and P value of the model is 0.02 which is less than 0.05. It is noted that only variable NNPA to NA is having significant impact on profitability of private sector banks measured by IITA.

4.3.2 Analysis of Impact of NPAs on Ratio on Net Interest Margin to Total Asset

Table 4 Regression Analysis of Impact of NPAs on NIMTA of Private Sector Banks

Dependent Variable: Ratio of Net Interest Margin to Total Asset of Private Sector Banks					
	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	3.04056	0.108873	27.93	<0.0001	***
GNPA to GA	-0.0748413	0.0613632	-1.220	0.2241	
NNPA to NA	0.165470	0.120155	1.377	0.1700	
GNPA to TA	33.7176	14.3550	2.349	0.0198	**
NNPA to TA	-97.6770	25.6469	-3.809	0.0002	***
R ²	0.088728				

Adjusted R ²	0.070035
F	4.746642
P Value	0.001123

Source: Authors Compilation

*** Significant at 1% level ** Significant at 5 % level * Significant at 10% level

Interpretation:

Table 4 indicates the impact of selected factors measured on NIMTA. Analysis shows that the listed factors have caused variation of 8 % as value of R² stands at 0.08. The null hypothesis “There is no significant difference between NPA and ratio of NIMTA” is rejected with respect to NNPA to TA, since the P value is less than 0.00 it is significant at 1% level and GNPA to TA, since the P value is less than 0.05 it is significant at 5 % level.

The t-test showed the significant and negative impact of NNPA to TA on NIMTA but positive and significant impact of GNPA to TA on NIMTA. Insignificant and negative impact of GNPA to GA on NIMTA. Results analyzed that NPA badly affect the profitability of Private Sector Banks with respect to NIMTA. Model has been found fit as P value of the model is 0.00 which is less than 0.05, therefore the model is significant at 1% level. It also explains that, other things remaining constant, increase in NNPA to TA of Private Sector Banks by 1% leads to decrease in profitability measured by NIMTA, by 97.68%.

4.3.3 Analysis of Impact of NPAs on Return on Asset of Private Sector Banks

Table 5 - Regression Analysis of NPAs on ROA of Private Sector Banks

Dependent Variable: Return on Asset of Private Sector Banks					
	Coefficient	Std. Error	t-ratio	p-value	
const	1.63863	0.0619026	26.47	<0.0001	***
GNPA to GA	-0.102413	0.0348896	-2.935	0.0037	***
NNPA to NA	-0.0235372	0.0683170	-0.3445	0.7308	
GNPA TO TA	12.2700	8.16192	1.503	0.1344	
NNPA TO TA	-77.4216	14.5822	-5.309	<0.0001	***
R ²	0.524488				
Adjusted R ²	0.514734				
F	53.77102				
P Value	1.74e-30				

Source: Authors Compilation

*** Significant at 1% level ** Significant at 5 % level * Significant at 10% level

Interpretation:

Table 5 depicts the impact of selected factors measured on Return on Assets. Listed factors have caused variation of 52% as value of R² stands at 0.52. The null hypothesis “There is no significant difference between NPA and ROA” is rejected with respect to GNPA to GA and NNPA to TA, since the P value is less than 0.00, it is significant at 1% level.

The analysis of t-test showed that significant and negative impact of GNPA to GA and NNPA to TA on ROA whereas insignificant and negative impact of NNPA to NA on ROA. Model has been found

fit as P value of the model is 0.00 which is less than 0.01, therefore the model is significant at 1% level. It also explains that, other things remaining constant, increase in GNPA to GA and NNPA to TA by 1% each leads to decrease in profitability measured by ROA, by 0.10 % and 77.42% respectively. Null hypothesis is rejected and thus it is proved that NPA badly affect the profitability of Private Sector Banks with respect to ROA.

4.3.4 Analysis of Impact of NPAs on Return on Equity

Table 6 - Regression Analysis of NPAs on ROE of Private Sector Banks

Dependent Variable: Return on Equity of Private Sector Banks					
	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	21.2256	0.910925	23.30	<0.0001	***
GNPA TO GA	-1.32207	0.513417	-2.575	0.0108	**
NNPA TO NA	-1.94573	1.00532	-1.935	0.0544	*
GNPA TO TA	16.9096	120.106	0.1408	0.8882	
NNPA TO TA	-512.938	214.583	-2.390	0.0178	**
R ²	0.487987				
Adjusted R ²	0.477484				
F	46.46236				
P Value	2.19e-27				

Source: Authors Compilation

*** Significant at 1% level ** Significant at 5 % level * Significant at 10% level

Interpretation:

Table 6 indicates the impact of selected factors measured on Return on Equity. Analysis shows that the listed factors have caused variation of 48% as value of R² stands at 0.48. The null hypothesis “There is no significant difference between NPA and ROE” is rejected with respect to GNPA to GA and NNPA to TA, since the P value is 0.01, it is significant at 5% level, and NNPA to NA, since the P value is 0.054, it is significant at 10% level.

The t-test shows significant and negative impact of GNPA to GA , NNPA to NA and NNPA to TA on dependent variable ROE. Model has been found fit as P value is 0.00 which is less than 0.01, therefore the model is significant at 1% level. It also explains that, other things remaining constant, increase in GNPA to GA, NNPA to NA and NNPA to TA of Private Sector Banks by 1% each leads to decrease in profitability measured by ROE, by 1.32%, 1.95% and 512.94% respectively. Null hypothesis is rejected and thus it is proved that NPA badly affect the profitability of Private Sector Banks with respect to ROE.

5. Conclusion

The findings of the study indicate that the independent variables—namely, Gross NPA to Gross Advances, Gross NPA to Total Assets, Net NPA to Total Assets, and Net NPA to Net Advances—exert a statistically significant and negative influence on the profitability of private sector banks in India. The overall analysis reveals a consistent inverse relationship between the level of NPAs and bank profitability; as the proportion of NPAs rises, profitability indicators correspondingly decline.

Furthermore, the Net Interest Margin (NIM) of private sector banks is adversely affected by increasing NPA levels, suggesting that banks with higher profitability tend to exercise greater caution and are less inclined to engage in high-risk lending practices. The empirical results also demonstrate a significant

association between NPAs and key profitability metrics such as Return on Assets (ROA) and Return on Equity (ROE), reinforcing the premise that asset quality plays a critical role in determining financial performance.

In conclusion, the study substantiates that Non-Performing Assets have a pronounced and detrimental impact on the profitability of private sector banks in India. Effective management of NPAs is therefore essential for safeguarding the financial stability and long-term sustainability of these institutions.

Future research could expand upon this study by incorporating more recent data and exploring additional variables or advanced analytical techniques to deepen the understanding of the relationship between Non-Performing Assets and bank profitability. Moreover, a comparative analysis across various categories of banks in India—such as public sector banks, private sector banks, foreign banks, and cooperative banks—could offer more nuanced insights into how NPAs affect profitability within different institutional and regulatory contexts. Such investigations would contribute to more targeted policy recommendations and strategic interventions tailored to specific banking segments.

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