Research Article

An Analytical Study of NPA and its Affect in Purvanchal & Sarva U.P. Gramin Bank

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I N F O

A B S T R A C T

Indian Economy heavily depends on Banking Sector. Rural Banking provide finance in semi urban and rural areas. Due to growing NPAs in the banks, the Indian banking system is currently facing numerous difficulties. This paper focusing on the Regional Rural Banks of Uttar Pradesh. Two banks selected for this research Purvanchal Bank and Sarva U.P Graim Bank both these banks are functioning in Eastern Uttar Pradesh which is underdeveloped when it compare to Western Uttar Pradesh. Due to lack of industrialization these area a large number of people are staying in Rural Areas so these two banks are functional in rural areas. This research will study the bank businesses, profitability and NPAs of these banks from the period of 2013-2018.

Keywords: Regional Rural Banks, Banking, Serva U.P.Gramin Bank, Purvanchal Bank

Introduction of NPA

Loans or advances that are in default or arrears are categorised as non-performing assets. NPA. Today, the banking industry and commercial world are spooked by the three letters Strike. The hated NPA rule basically states that when interest or other amounts owing to a bank go unpaid for more than 90 days, the entire bank loan becomes a nonperforming asset.

Concept of NPA

A loan that is listed under "Non-Performing Assets" has not produced any income from interest or principal repayment. The Narasimham Committee Report (1991) states that assets with outstanding interest and principal payments for 180 days or more should be classified as non-performing assets (NPAs). According to the Banking Regulation Act of 1949, the grace period was shortened to 90 days starting in 1995.

Classification and Provisions for Assets

Banks divide loan assets into four groups, as follows:

Standard Assets: These kinds of assets are risk-free and don't cause any issues for routine business. As a result, these assets are regarded as performing assets in banking parlance; yet, a provision of 0.25 percent must be made for safety in order to sustain the worldwide loan portfolio.

Substandard Assets: As of the 31st of March 2005, a substandard asset is one that has remained non-performing for less than or equal to a year. These assets have a credit risk, and there is a chance of some loss if borrowers delay making payments, which reduces the banks' liquidity. These subpar assets require a general provision of 10% of the outstanding amount.

Doubtful assets: Assets that have been non-performing for longer than a year but are not regarded as loss assets are referred to as doubtful assets. After deducting the

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realised amount under the Deposit Insurance and Credit Guarantee Corporation Scheme (DICGC) and the realized/ realizable amount of guarantee cover under the Export Credit Guarantee Corporation ECGC) schemes, banks are required to provide 100% of the outstanding advance's unsecured component. As of June 3, 2014, the advances listed below would be considered doubtful assets according to provisional criteria for assets older than three years.

Unsecured Component: Up to the entire amount would be granted for the portion of the advance not covered by the recoverable amount of the physical security to which the bank has legal recourse, and the realisable value would be calculated on a reasonable basis.

Secured Portion: The time frame during which the advance was classified as Doubtful. provisions needed (percent) Up to one year, 25 years, and three decades Over three years, one hundred.

Loss Assets: are those that have been recognised as losses by the bank, internal or external auditors, and in accordance with RBI requirements but have not yet been fully written off. These are the lost assets, however some of them may be salvaged.

Review of Literature

Singh and Singh (2009) study the endeavour of NPAs management of Manipur Rural Bank., It has been found both gross and net NPA was in a wildly fluctuating trend during the study period from 2001 to 2008. This study some curative measures for current NPAs management.

Khan and Ansari (2016) discuss the issues RRBs are experiencing and identify possible solutions for reducing and controlling NPAs. NPAs don't bring in money for RRBs, which has an impact on the bank's profitability and increases provisioning because a significant portion of profits are set aside as a provision for bad loans, which has an impact on the recycling of funds. Therefore, amalgamation is a possible strategy for reducing NPAs.

Geetha (2016) evaluates the Krishna Pragathi Gramina Bank's financial performance in the Shivamoga District. In terms of liquidity, profitability, and asset management between the study years of 2012 and 2014, Krishna Pragathi Gramina Bank did well in the four Shimogga district communities of Hosanagara, Soraba, Sagara, and Shikaripura.

Kopra (2017) compared the total NPA of the Maharashtra Gramin Bank with the Vidharbha Konkan Gramin Bank using data from 2013 to 2015. Data on Gross and Net NPA were also examined. When it comes to managing non-performing assets, Vidharbha Konkan Gramin Bank performs better than Maharashtra Gramin Bank.

Banerjee & Verma, (2020) study on NPAs of Allahabad Uttar Pradesh Gramin Bank. Net NPA and Net Profit Data analysis by using correlation coefficient test. From the study period 2013-2018 it has been found there is a negative correlation between Net Profit and Net NPA, when Net Profit increases Net NPA decreases.

Banerjee & Verma (2022) worked on the NPAs of Allahabad U. P. Regional Rural Bank and Kashi Gomti Samyut Gramin Bank data analysis on the basis of Gross Advances, Net Advances, Gross NPAs, Net NPAs, Gross Profit, Net Profit and various categories of NPAs and the recovery channels used by these banks for recovery from the 2011-2018. It has been revealed from ANOVA and Post Hock Tukey & Hochberg test there is significant relation among various classes of NPAs and Gross Advances with Gross NPAs of Allahabad U. P. Regional Rural Bank, and Net Advances with Net NPAs of Kashi Gomti Samyut Gramin Bank.

Statement of The Problem

Gaining profit and preserving market stability are crucial components of any business. Because of the environmental strategies used in banking, sustainability in relation to the business environment has gained broad awareness. In addition to effectiveness and efficiency, sustainability emphasises corporate productivity and the generation of value for the company (competitiveness), which flow from the environmental, economic, and social components. A company that makes sustainable improvement its strategic goal will eventually need to decide how to apply for the dimension of bank sustainability, how to define its goals, and what procedures and methods need to be applied to reap the benefits.

Objectives

1. To find out the relationship between Gross advances & Gross NPAs of Purvanchal & Sarva U.P. Gramin Bank.
2. To find out the relationship between Net advances & Net NPAs of Purvanchal & Sarva U.P. Gramin Bank.
3. To find out the relationship between Gross Non-Performing Assets and Gross Profits of Purvanchal & Sarva U.P. Gramin Bank.
4. To find out the relationship between Net Non-Performing Assets and Net Profits of Purvanchal & Sarva U.P. Gramin Bank.

Research Methodology

Nature of Study: Secondary Data Analysis
Sources of Data Collection: Annual Audit Reports of the Banks.
Time Frame: 2012-2018
Sample Banks: Purvanchal & Sarva U.P. Gramin Bank

Data Analysis

Parametric Test: Correlation, Regression, Coefficient of determination, ANOVA

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Non Parametric Test: Mann-Whitney Test.

Hypothesis

H_0 : There is no significant association between Gross Non-Performing Assets & Gross Advances of the Purvanchal and Sarva U.P. Gramin Bank.

H_0 : There is no significant association between Net Non-Performing Assets & Net advances of the Purvanchal and Sarva U.P. Gramin Bank.

H_0 : There is no significant association between Gross Non-Performing Assets & Gross Profit of the Purvanchal and Sarva U.P. Gramin Bank.

H_0 : There is no significant association between Net Non-Performing Assets & Net Profit of the Purvanchal and Sarva U.P. Gramin Bank.

Data Analysis

H_0: There is no significant association between Gross Non-Performing Assets s & Gross Advances of the Purvanchal and Sarva U.P. Gramin Bank.

Table 1.Gross Advances & GNPAs of Purvanchal Bank & Sarva U.P. Gramin Bank (Rs. Cr)

Year	Purvanchal Bank		Sarva U.P. Gramin Bank	
	Gross Advances	Gross NPA	Gross Advances	Gross NPA
2012-13	3078	493	2423	93
2013-14	3377	505	2986	91
2014-15	3634	424	3522	99
2015-16	4014	319	4268	154
2016-17	4382	305	5170	135
2017-18	3995	711	6250	270

Table 2.Model Summary Gross Advances & GNPAs of Purvanchal Bank

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.305	.093	-.133	158.848

Table 3.Purvanchal Bank ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10385.004	1	10385.004	.412	.556
	Residual	100930.496	4	25232.624		
	Total	111315.500	5			
a. Predictors: (Constant), Gross Advances						
b. Dependent Variable: Gross NPA						

Rom the Table 1, Table 2 & 3 regression and ANOVA Test shows Gross Advances and Gross NPA of Purvanchal Bank. Adjusted R Square value negative so the model does not fit and now we have to conduct non-parametric test. The alternative a non-parametric test of ANOVA is the Mann-Whitney Test as Gross Advances and Gross NPA both are independent variables.

Table 4.Mann-Whitney Test Statistics

	Amount(Rs)
Mann-Whitney U	.000
Wilcoxon W	21.000
Z	-2.882
Asymp. Sig. (2-tailed)	.004
Exact Sig. [2*(1-tailed Sig.)]	.002[a]
a. Not corrected for ties.	
b. Grouping Variable: Item	

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Table 5.Model Summary Gross Advances & GNPAs of Sarva U.P. Gramin Bank

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.888	.789	.736	35.172

Table 6.Sarva U.P. Gramin Bank ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18462.958	1	18462.958	14.924	.018ª
	Residual	4948.375	4	1237.094		
	Total	23411.333	5			
a. Predictors: (Constant), Gross Advances						
b. Dependent Variable: Gross NPA						

Table 7.Net Advances and Net NPA Purvanchal and Sarva U.P. Gramin Bank. (Rs. Cr)

Year	Purvanchal Bank		Sarva U.P. Gramin Bank	
	Net Advances	Net NPA	Net Advances	Net NPA
2012-13	2960	332	2090	6
2013-14	3128	267	2949	3
2014-15	3400	214	3087	25
2015-16	3774	100	3706	39
2016-17	4129	66	4663	24
2017-18	3677	404	5614	82

Table 8.Model Summary Net advances & Net NPAs of Purvanchal Bank

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.616	.379	.224	115.616

Table 9.Purvanchal Bank ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32631.459	1	32631.459	2.441	.193ª
	Residual	53468.041	4	13367.010		
	Total	86099.500	5			
a. Predictors: (Constant), Net Advances						
b. Dependent Variable: Net NPA						

Table no 4, Mann and Witney test suggests P-value .002, which is lower than the .05 or 5% significance level for rejecting the H_0 hypothesis.

Table no 5, regression tests shows relationship between Gross advances & GNPAs of the Sarva U.P. Gramin Bank. Adjusted R square value 0.736 which lies between -1 to +1, Adjusted R Squared the independent variables here cumulatively explain 73.6% of the dependent variables. Adjusted R square is saying this model is 73.6% fit. Table 6 calculated value of F which is (14.924) which is significant at 5%, so the difference is significant and hypothesis is rejected which indicates that the value of slope is nonzero.

Therefore null hypothesis rejected, hence there is a cause and effect relationship between Gross advances & GNPAs.

H_0 : There is no significant association between Net Non-Performing Assets & Net advances of the Purvanchal and Sarva U.P. Gramin Bank.

From Table 7 data Table 8 & 9 regression and ANOVA tests shows relationship between Net advances & Net NPAs of the Purvanchal Bank. Adjusted R Square value negative so the model does not fit and now we have to conduct non-parametric test. The alternative a non-parametric test of ANOVA is the Mann-Whitney Test as Net Advances and Net NPA both are independent variables.

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Table 10.Mann-Whitney Test Statistics

	Amount(Rs)
Mann-Whitney U	.000
Wilcoxon W	21.000
Z	-2.882
Asymp. Sig. (2-tailed)	.004
Exact Sig. [2*(1-tailed Sig.)]	.002ᵃ
a. Not corrected for ties.	
b. Grouping Variable: Item	

Table 11.Model Summary Net advances & Net NPAs of Sarva U.P. Gramin Bank

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.848	.720	.650	17.052

Table 12.Sarva U.P. Gramin Bank ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2987.770	1	2987.770	10.276	.033
	Residual	1163.063	4	290.766		
	Total	4150.833	5			
a. Predictors: (Constant), Net Advances						
b. Dependent Variable: Net NPA						

Table 13.Gross Non-Performing Assets and Gross Profit Purvanchal and Sarva U.P. Gramin Bank. (Rs. Cr)

Year	Purvanchal Bank		Sarva U.P. Gramin Bank	
	Gross NPA	Gross Profit	Gross NPA	Gross Profit
2012-13	493	289	93	174
2013-14	505	343	91	196
2014-15	424	317	99	230
2015-16	319	373	154	272
2016-17	305	382	135	362
2017-18	711	428	270	417

Table no 10, Mann and Witney test suggests P-value .002, which is lower than the .05 or 5% significance level for rejecting the Ho hypothesis.

Table no 11, regression tests shows relationship between Net Advances & Net NPAs of the Sarva U.P. Gramin Bank. Adjusted R square value 0.650 which lies between -1 to +1, Adjusted R Squared the independent variables here cumulatively explain 65% of the dependent variables. Adjusted R square is saying this model is 65% fit. Table 12

calculated value of F which is (10.276) which is significant at 5%, so the difference is significant and hypothesis is rejected which indicates that the value of slope is nonzero. Therefore null hypothesis rejected, hence there is a cause and effect relationship between Net advances & Net NPAs.

H_0 : There is no significant association between Gross Non-Performing Assets & Gross Profit of the Purvanchal and Sarva U.P. Gramin Bank.

Table 14.Model Summary Gross Non-Performing Assets and Gross Profits of Purvanchal Bank

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.277	.077	-.154	53.342

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Table 15.Purvanchal Bank ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	944.011	1	944.011	.332	.595[a]
	Residual	11381.323	4	2845.331		
	Total	12325.333	5			
a. Predictors: (Constant), Gross NPA						
b. Dependent Variable: Gross Profit						

Table 16.Mann and Witney Test Statistics

	Amount(Rs)
Mann-Whitney U	10.000
Wilcoxon W	31.000
Z	-1.281
Asymp. Sig. (2-tailed)	.200
Exact Sig. [2*(1-tailed Sig.)]	.240[a]
a. Not corrected for ties.	
b. Grouping Variable: Item	

Table 17.Model SummaryGross Non-Performing Assets and Gross Profits of Sarva U.P. Gramin Bank

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.865	.748	.685	53.959

Table 18.Sarva U.P. Gramin Bank ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34562.574	1	34562.574	11.871	.026
	Residual	11646.259	4	2911.565		
	Total	46208.833	5			
a. Predictors: (Constant), Gross NPA						
b. Dependent Variable: Gross Profit						

From the Table 13 data Table 14 & 15 regression and ANOVA tests shows relationship between Gross Non-Performing Assets and Gross Profits Bank. Adjusted R Square value negative so the model does not fit and now we have to conduct non-parametric test. The alternative a non-parametric test of ANOVA is the Mann and Witney Test as Gross Non-Performing Assets and Gross Profits both are independent variables.

Table no 16 Mann and Witney test suggests P-value .240, which is more than the .05 or 5% significance level for not rejecting the Ho hypothesis.

Table no 17 regression tests shows relationship between Gross Non-Performing Assets and Gross Profits of Sarva U.P. Gramin Bank. Adjusted R square value 0.685 which lies between -1 to +1, Adjusted R Squared the independent variables here cumulatively explain 68.5% of the dependent variables. Adjusted R square is saying this model is 68.5% fit. Table 18 calculated value of F which is (11.871) which is significant at 5%, so the difference is significant and hypothesis is rejected which indicates that the value of slope is nonzero. Therefore null hypothesis rejected, hence there is a cause and effect relationship between Gross Non-Performing Assets and Gross Profits.

H0 : There is no significant association between Net Non-Performing Assets & Net Profit of the Purvanchal and Sarva U.P. Gramin Bank.

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Table 19.Net Non-Performing Assets and Net Profit Purvanchal and Sarva U.P. Gramin Bank. (Rs. Cr)

Year	Purvanchal Bank		Sarva U.P. Gramin Bank	
	Net NPA	Net Profit	Net NPA	Net Profit
2012-13	332	28	6	30
2013-14	267	30	3	41
2014-15	214	33	25	52
2015-16	100	33	39	81
2016-17	66	40	24	87
2017-18	404	31	82	133

Table 20.Model Summary Net Non-Performing Assets and Net Profits of Purvanchal Bank

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780	.608	.510	2.895

Table 21.Purvanchal Bank ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51.979	1	51.979	6.202	.067[a]
	Residual	33.521	4	8.380		
	Total	85.500	5			
a. Predictors: (Constant), Net NPA						
b. Dependent Variable: Net Profit						

Table 22.Mann and Witney Test Statistics

	Amount(Rs)
Mann-Whitney U	.000
Wilcoxon W	21.000
Z	-2.887
Asymp. Sig. (2-tailed)	.004
Exact Sig. [2*(1-tailed Sig.)]	.002[a]
a. Not corrected for ties.	
b. Grouping Variable: Item	

Table 23.Model Summary Net Non-Performing Assets and Net Profits of Sarva U.P. Gramin Bank

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.938	.880	.850	14.652

Table 24.Sarva U.P. Gramin Bank ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6282.605	1	6282.605	29.265	.006
	Residual	858.729	4	214.682		
	Total	7141.333	5			
a. Predictors: (Constant), Net NPA						
b. Dependent Variable: Net Profit						

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From the Table 19 data Table 20 & 20 regression and ANOVA tests shows relationship between Net Non-Performing Assets and Net Profits of Purvanchal Bank. Adjusted R square value 0.510 which lies between -1 to +1, Adjusted R Squared the independent variables here cumulatively explain 51 % of the dependent variables. Adjusted R square is saying this model is 51% fit. Due to lower model fit there is need of alternative non parametric test of ANOVA which is Mann and Witney Test.

Table no 22 Mann and Witney test suggests P-value .002, which is more than the .05 or 5% significance level for rejecting the Ho hypothesis.

Table no 23 regression tests shows relationship between Net Non-Performing Assets and Net Profits of Sarva U.P. Gramin Bank. Adjusted R square value 0.850 which lies between -1 to +1, Adjusted R Squared the independent variables here cumulatively explain 85% of the dependent variables. Adjusted R square is saying this model is 85% fit. Table 24 calculated value of F which is (29.265) which is significant at 5%, so the difference is significant and hypothesis is rejected which indicates that the value of slope is nonzero. Therefore null hypothesis H_{01} rejected, hence there is a cause and effect relationship between Net Non-Performing Assets and Net Profits.

Table 24.Sarva U.P. Gramin Bank ANOVA

S. No		Correlation
1	Gross advances & GNPAs of Purvanchal Bank	-0.31
2	Net advances & Net NPAs of Purvanchal Bank	-0.62
3	Gross Non-Performing Assets and Gross Profits of Purvanchal Bank	0.28
4	Net Non-Performing Assets and Net Profits of Purvanchal Bank	-0.78
5	Gross advances & GNPAs of Sarva U.P. Gramin Bank	0.89
6	Net advances & Net NPAs of Sarva U.P. Gramin Bank	0.85
7	Gross Non-Performing Assets and Gross Profits of Sarva U.P. Gramin Bank	0.86
8	Net Non-Performing Assets and Net Profits of Sarva U.P. Gramin Bank	0.94

Findings

S. No		Hypothesis
1	There is no significant association between Gross advances & GNPAs of Purvanchal Bank	Rejected
2	There is no significant association between Net advances & Net NPAs of Purvanchal Bank	Rejected
3	There is no significant association between Gross Non-Performing Assets and Gross Profits of Purvanchal Bank	Not Rejected
4	There is no significant association between Net Non-Performing Assets and Net Profits of Purvanchal Bank	Rejected
5	There is no significant association between Gross advances & GNPAs of Sarva U.P. Gramin Bank	Rejected
6	There is no significant association between Net advances & Net NPAs of Sarva U.P. Gramin Bank	Rejected
7	There is no significant association between Gross Non-Performing Assets and Gross Profits of Sarva U.P. Gramin Bank	Rejected
8	There is no significant association between Net Non-Performing Assets and Net Profits of Sarva U.P. Gramin Bank	Rejected

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Conclusion

From this study it has been proven there is relationship between Independent variables Gross Advances and Gross NPAs. Gross Advances which is the businesses of the banks increases suggest growth of business but increasing Gross NPAs is alarming sign correlation test suggest Purvanchal Banks Gross Advances and Gross NPAs Negative Correlation where is Sarva U.P. Gramin Bank Positive Correlation between Gross Advances and Gross NPAs. Net Advances & Net NPAs of Purvanchal Banks negative correlation which indicates one increases other decreases. Net advances & Net NPAs of Sarva U.P. Gramin Bank Positive correlation which indicates one increases other also increases. Both Purvanchal Banks & Sarva U.P. Gramin Bank Positive correlation GNPAs and Gross Profits. Net Non-Performing Assets and Net Profits of Purvanchal Bank negative correlation. Net Non-Performing Assets and Net Profits of Sarva U.P. Gramin Bank positively correlated.

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