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FINANCIAL RESILIENCE AND NPA ANALYSIS OF STATE BANK OF INDIA FOR STRENGTHENED LOCAL SELF-GOVERNANCE

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Abstract: This study critically examines the financial health and management efficiency of the State Bank of India (SBI) and its associate banks, emphasizing the implications of Non-Performing Assets (NPAs) on institutional stability and local financial governance. Using secondary data from annual reports, banking bulletins, and official publications, the research employs a robust econometric framework integrating descriptive statistics, multivariate Skewness (Sk), Kurtosis (Ku), correlation, regression, and the Augmented Dickey-Fuller (ADF) unit root test to assess data stationarity. ANOVA tests were used to evaluate interbank performance differences, while Altman's Z-score model was applied to measure financial resilience. The results revealed that, in several parameters—such as demand deposits, cost of credit, and term loans—there exists both significant and non-significant variations among SBI and its affiliates. Particularly, the ratio of term loans and net NPA as a percentage of total assets indicated notable disparities, affirming the influence of NPA management on overall financial performance. Multiple regression analysis further demonstrated a strong positive relationship (R = 0.998) between current and prior year credit recoveries, indicating consistent recovery performance trends. The study underscores that effective NPA management contributes to strengthening local banking governance and sustainable financial decentralization. These findings offer valuable insights for policymakers, financial regulators, and local government institutions in enhancing the resilience of public sector banks within India's evolving financial ecosystem.

Keywords: *Local financial governance, Non-Performing Assets, State Bank of India, Econometric analysis, Banking performance, Fiscal decentralization*

1.Introduction

The banking sector mobilizes and distributes resources which is a crucial part of the economy. The assurance that represents the entire countrys economy is the banks financial situation. The elements that support Indian banking industries are growth asset quality and profitability. Throughout the liberalization process Indias banking sector has experienced a number of changes. The Reserve Bank of India and the government have developed a number of laws and rules pertaining to banks in order to bolster this industry. Changes in banking include strengthening prudential standards improving the payments system integrating bank regulations regarding asset quality and capital adequacy and having a clean strong and transparent system. When an asset whether owned or leased does not produce revenue for the bank it is considered nonperforming.

A loan or advance given to a borrower for which the principal loan amount or the interest on the principal amount remains unpaid or past due for a maximum of ninety days is referred to as a non-performing asset [1]. Compared to new private sector banks and foreign banks State Bank of India is one of the public sector banks with a large number of nonperforming assets (NPAs) a large workforce and a lack of modern technology [2]. Review helps the researcher understand what is currently known in the field of study. This aids the researcher in succinctly and clearly stating their goals. The researcher has provided a thorough review of the literature on numerous studies pertaining to non-performing assets of banking sector organizations in this chapter [3]. The issue of non-performing assets in Indian banks was highlighted in his research. When evaluating a credit proposal a banker must consider a few straightforward but crucial fundamentals he noted. These 18 points are important for managing credit risk and can be used to assess the ventures strengths and weaknesses prior to funding [4].

Researchers examined the issues surrounding non-performing assets (NPAs) in the banking industry and came to the conclusion that the issue grew more serious primarily following Indias economic reforms. Additionally the amount of NPA and its contributing factors were discovered. They put forth some recommendations for controlling credit risks such as credit evaluation risk management strategies and steps to manage NPA issues.

This conducted a comparative analysis of the non-performing assets of various bank groups and their effectiveness in handling non-performing assets during difficult times [5].
When compared to private sector banks during the study period their research indicates that public sector banks make an effort to effectively manage their non-performing assets.
Researchers looked into the issues with non-performing assets that Indian banks were facing. After researching HDFC and Kotak Mahindra banks they came to the conclusion that both macroeconomic and microeconomic factors are to blame for the growing NPA levels. The primary causes of non-performing assets (NPAs) are funding allotted to infrastructure projects a slowdown in the global economic recovery and ongoing market uncertainty that results in less credit growth than anticipated [6]. Using historical data from two well-known public sector banks in India SBI and BOB as well as the degree to which NPA and bank profitability are correlated the effect of NPAs on banks financial efficiency is evaluated [7].
A bank will classify a borrowers advances and loans as non-performing assets (NPAs) if they are unable to make their principal and interest payments on time. Finding out how Union Bank of India handles NPAs is the aim of this study [8]. Indias banking industry is vital to the nations economic development and NPAs play a major role in its expansion. NPAs are a crucial tool for evaluating various institutions financial health [9]. Loans and advances that have not had their principal and interest paid on time for ninety days are considered non-performing assets (NPAs). Banks are a key instrument for both capital mobilization and economic expansion in India. The banking sector in India was among the biggest in the world and its growth prospects are being boosted by the countrys growing working population mass financial integration and banking innovations.
However growth has its own drawbacks like non-performing assets (NPAs) or bad loans which seriously jeopardize bank profit liquidity and reputation [10]. In recent years one of the industries with the fastest growth has been banking. Conversely the current banking system is growing more complicated [11]. Most people agree that one of the key elements of a nations economic prosperity is banking. The economy will suffer from any agreement pertaining to the banking industry. A banks liquidity profit asset quality and long-term viability are all directly impacted by non-performing assets. Therefore investigating how NPAs affect the banking system is the studys objective [12]. Indias monetary division has rapidly changed due to factors like deregulation of loan costs reduced availability for future needs barriers to section prudential standards and risk-based management. The analysis reveals that the games shifting operational standards are shielding weak foundations making it difficult and inadequate to implement effective variations [13]. To be truly persuasive variations necessary to address the NPA issue would need to cover the entire spectrum of the legal executive the country and the organization. Further Asian countries interactions with NPAs are managed by this project [14]. It also looks into how the changes affect the level of non-performing assets (NPAs) and suggests ways to address the problem using examples from interactions with various countries [15].

2.Methodology

2.1Sources of Data

The majority of the data used in this study is secondary. The information was gathered from State Bank of India's annual report. Data was gathered from banking bulletins, websites, newspapers, and periodicals in addition to the bank's records.

2.2 Framework of Analysis

Statistical and economic tools have been utilized to analyze the acquired data. The statistical methods include regression, correlation, skewness (Sk), kurtosis (Ku), trend, and descriptive statistics. The unit root test is part of the econometric analysis (Figure 1).

2.3 Sampling Techniques

Purposive sampling was used to choose the study's data from the RBI-listed banking sector. The State Bank of India's NPA and the data's accessibility during the course of the ten-year study period were taken into consideration when choosing the sample.

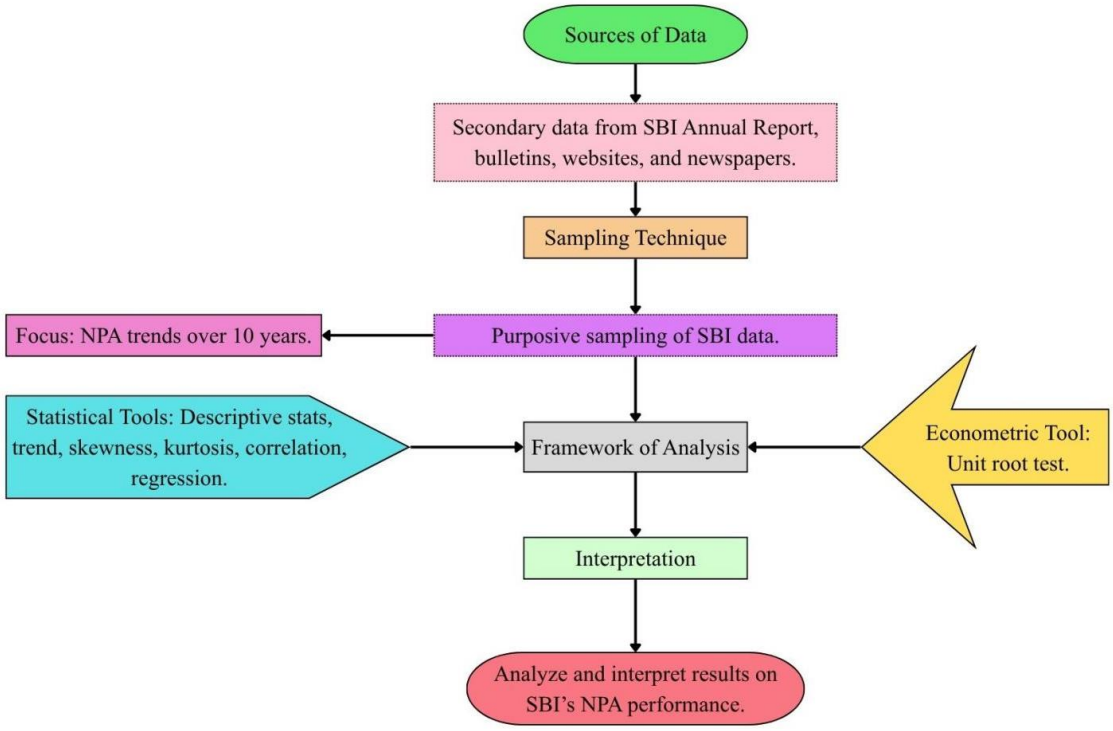

Figure 1: Flowchart

The study considers the following SBI is select sample

2.4 **Statistical Tools**

2.4.1 Measures of multivariate Skewness (S_k)

It is to measure a data average and its helps to estimate whether future data mean value will be more or less.

2.4.2 Measures of multivariate Kurtosis (K_u)

It is a measure to test whether the data peaked or flat relative to a normal distribution.

2.4.3 Econometric Tools

Unit root test

We employ the Augmented Dicky Fuller (ADF) test, a traditional unit root test, to assess the data integration level and stationary. The reason for this is that the ADF test is a more dependable method for determining whether a data series is non-stationary. Therefore, a variable that has a constant mean and variance with regard to time is said to be stationary.ession formula (Eq 1-3).

Therefore,

Without Intercept(c) and Trend (t): $\Delta Y = \delta Yt\text{-}1 + ut$ (1)

Without Intercept; (c): $\Delta Y = \alpha + \delta Yt\text{-}1 + ut$ (2)

With Intercept (c) and Trend (t): $\Delta Y = \alpha + \beta T + \delta Yt\text{-}1 + ut$ (3)

2.5 Regression analysis

Regression analysis examines the connection between two or more variables, whereas correlation investigates potential correlations between two or more variables. A functional form is used to describe and quantify the relationship. A linear function is referred to as a simple regression equation if the connection between two variables—that is, one dependent variable and the other independent or explanatory variable—is a linear function or a straight line.

3. Results And Discussion

3.1 Economic Presentation Of Sbi And Its Acquaintances Banks

3.1.1 Demand–Saving Deposit Ratio of SBI and Associates

The State Bank of India (SBI) and its affiliated banks instant ratio of request and exchangeable bank payments to total payments was analyzed (Table 1) and the results showed that differences between banks were

comparatively small indicating a consistent pattern in deposit mobilization and transactional efficiency. Stable performance levels in terms of deposit-to-payment ratios were indicated by the average ratios which varied from 50. 94 for the State Bank of Bikaner and Jaipur to 53. 56 for the State Bank of Travancore. However the moderate variances suggested variations in specific bank operations perhaps as a result of regional differences in customer bases and market structures.

Table 1 Instant ratio of request and exchangeable bank payment to total payment – SBI and its acquaintances banks

Groups	State Bank of Hyderabad	State Bank of Bikaner and Jaipur	State Bank of Mysore	State Bank of India	State Bank of Travancore	State Bank of Patiala
Average	51.98583	50.94083	51.7625	51.26667	53.565	51.94333
Sum	623.83	611.29	621.15	615.2	642.78	623.32
Variance	405.4527	139.8677	307.275	31.22604	440.5624	542.1843
Count	12	12	12	12	12	12

The F-value (0. 0317) was significantly lower than the critical F-value (2. 3538) in the ANOVA results for the ratio of request and exchangeable bank credit to total payment (figure 2) suggesting that there was no statistically significant difference between SBI and its affiliated banks. The P-value (0. 9994) further demonstrated that differences in financial performance could not be explained by variations among banks. According to this research all banks maintained consistent deposit and credit patterns by operating under a similar structural and regulatory framework. As a result the hypothesis that there was no significant variation in SBIs and its acquaintances financial execution was accepted highlighting the consistency of their financial and operational strategies throughout the period under analysis.

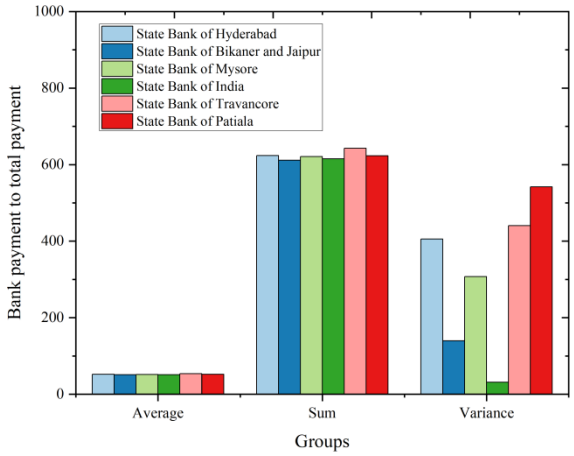

Figure 2 ANOVA – Ratio of request and exchangeable bank credit to total payment – SBI and its acquaintances banks

3.1.2 Term Loan–Advance Ratio of SBI and Associates

There was a discernible difference between SBI and its affiliated banks when the instant tenure loan to total loan ratio was analyzed (Table 2). Different lending strategies and loan portfolio structures were indicated by the average proportion which varied from 48. 40 for the State Bank of Travancore to 57. 38 for the State Bank of Patiala. While the lower ratios in Travancore and Bikaner indicated cautious credit expansion the higher averages in Hyderabad and Patiala indicated more robust long-term lending activity. Overall the findings suggested that during the study period SBIs affiliated banks managed long-term loan allocations with varying degrees of efficiency.

Table 2 Instant proportion of tenure loan to entire loan – SBI and its Acquaintances Banks

Groups	Average	Sum	Variance	Count
State Bank of Bikaner and Jaipur	49.3792	592.55	34.5819	12
State Bank of Hyderabad	57.3792	688.55	8.35768	12
State Bank of India	51.0542	612.65	7.13394	12
State Bank of Mysore	55.915	670.98	51.8976	12
State Bank of Patiala	57.3858	688.63	14.5907	12
State Bank of Travancore	48.4058	580.87	18.5643	12

Table 3 shows that F esteem (9. 007) is higher than F basic worth (2. 353) indicating a centrality contrast in the money-related execution of different SBI and its partner banks in terms of term credit to add up to progress.

Table 3 ANOVA- instant proportion of tenure loan to entire loan – SBI and its Acquaintances Banks

Sources of Variation	Between Groups	Within Groups	Total
P-value	1.45006		
F crit	2.353809		
F	9.007938		
MS	202.8679	22.52101	
Df	5	66	71
SS	1014.339	1486.387	2500.726

3.1.3 Price of Credit SBI and its Acquaintances

There was little variation in the instant price of credit between SBI and its affiliated banks according to the analysis (Table 4) indicating uniform interest rate management across institutions. The average values showed slight variations in lending costs ranging from 5. 28 for the State Bank of India to 6. 04 for the State Bank of Patiala. The low variance values indicated stable credit pricing policies which were probably impacted by

consistent market conditions and regulatory frameworks. All things considered the results supported a fair and uniform approach to credit pricing across all SBI-affiliated banks.

Table 4 Instant Price of Credit - SBI and its Acquaintances Banks

Groups	Average	Sum	Variance	Count
State Bank of Bikaner and Jaipur	5.55583	66.67	0.79628	12
State Bank of Hyderabad	5.86667	70.4	1.49555	12
State Bank of India	5.28667	63.44	0.15766	12
State Bank of Mysore	5.60917	67.32	0.91977	12
State Bank of Patiala	6.04	72.48	1.79595	12
State Bank of Travancore	5.71	68.52	0.71673	12

The table 5 speaks to that F esteem (0.833) is lower than F basic worth (2.353) show that there is no hugeness distinction in budgetary execution of various SBI and its partner banks in proportion of expense of store.

Table 5 ANOVA – price of credit - SBI and its Acquaintances Banks

Sources of Variation	Between Groups	Within Groups	Total
P-value	5.30E-01		
F crit	2.35389		
F	0.833949		
MS	0.817122	0.979823	
Df	5	66	71
SS	4.085611	64.66832	68.7539

3.1.4 Cost of Stealing of SBI and its Acquaintances

Significant variations in borrowing costs between SBI and its affiliated banks were found by analyzing the instant price of theft (Table 6). The average values showed different cost structures and funding strategies

ranging from 0. 87 for the State Bank of Travancore to 3. 95 for the State Bank of India. While lower values in Travancore and Patiala indicated cautious financial operations higher averages in SBI and Hyderabad indicated more borrowing activity. Overall the findings demonstrated a substantial difference in the acquisition costs between the banks over the course of the study.

Table 6 Instant Price of stealing - SBI and its Acquaintances Banks

Groups	Average	Sum	Variance	Count
State Bank of Bikaner and Jaipur	3.30917	39.71	1.61923	12
State Bank of Hyderabad	3.3525	40.23	4.575	12
State Bank of India	3.9525	47.43	2.42462	12
State Bank of Mysore	2.85167	34.22	1.78189	12
State Bank of Patiala	2.59833	31.18	3.62225	12
State Bank of Travancore	0.87583	10.51	0.21708	12

The table 7 demonstrates that F esteem (5.698) is higher than F basic worth (2.353) show that there is criticalness contrast in money related execution of various SBI and its partner banks in proportion of expense of obtaining.

Table 7 ANOVA – price of stealing - SBI and its Acquaintances Banks

Sources of Variation	Between Groups	Within Groups	Total
P-value	1.009804		
F crit	2.35389		
F	5.698542		
MS	13.52461	2.373345	
Df	5	66	71
SS	67.62303	156.6408	224.2638

3.1.5 Net NPA–Asset Ratio of SBI and Associates

There were obvious differences in asset quality between SBI and its affiliated banks according to the analysis of the instant net NPA as a percentage of possessions (Table 8). The average values showed different amounts of non-performing assets ranging from 0. 59 for the State Bank of Hyderabad to 1. 95 for the State Bank of India. While lower values in Hyderabad and Patiala indicated better asset management higher averages in SBI indicated more exposure to credit risk. Overall the results revealed inconsistent NPA performance emphasizing variations in the banks credit monitoring effectiveness.

Table 8 Instant Net NPA as fraction of possessions SBI and its Acquaintances Banks

Groups	Average	Sum	Variance	Count
State Bank of Bikaner and Jaipur	1.385	16.62	0.26412	12

State Bank of Hyderabad	0.595	7.14	0.16325	12
State Bank of India	1.95333	23.44	0.16339	12
State Bank of Mysore	1.06667	12.8	0.34135	12
State Bank of Patiala	1.09083	13.09	0.08672	12
State Bank of Travancore	1.29167	15.5	0.16967	12

Figure 3 demonstrates that F esteem (12.433) is higher than F basic worth (2.353), showing that there is an essential distinction in financial performance of various SBI and its partner banks in proportion of net NPA as a level of advantages.

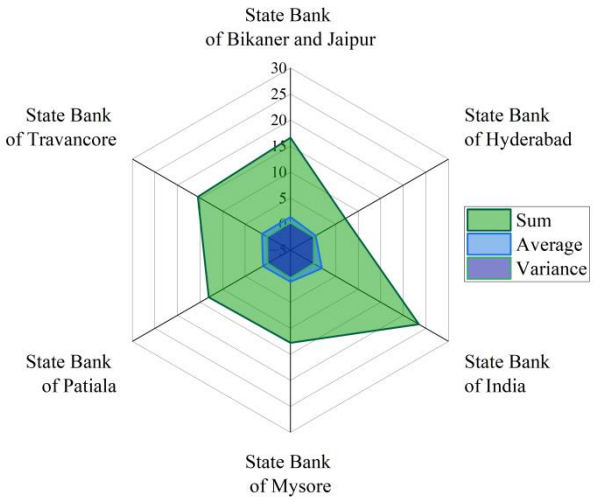

Figure 3 ANOVA – Net NPA as fraction of possessions - SBI and its Acquaintances Banks

3.1.6 Multiple regression analysis

Table 9 demonstrates the Multiple Regression investigation of current recuperation of credit to earlier year recuperation during the period from 2006-07 to 2021-22. It uncovers the recuperation of advance is have a ($p>0.05$) solid association with earlier years. The select bank's presentation will in general increment essentially with increment in recuperation of credit. Accordingly, recuperation of credit is the huge indicators of among the state bank of India. The R2 esteem (0.997) demonstrates the difference of the needy variable being clarified by the autonomous factors and the estimation of F (4.063) demonstrates the noteworthy relationship. The criticalness estimation of F static affirms the wellness of the model. The estimation of R (0.998) demonstrates the connection between current recuperation of credit and earlier year. The R2 demonstrates the indicators of standard resource,

unacceptable, question full, misfortune resource incorporated into the model of together record for 5 percent variety in the present recuperation of advance. While testing the speculation, it tends to be seen current recuperation of credit. The table demonstrates that the determined F worth is more than the table worth. Subsequently, the invalid speculation is rejected and there is no effect connection between current recuperation of advance and earlier year.

Table 9 Numerous reversion scrutiny of recent year retrieval of finance to preceding year repossession

S.no	Values
Adjusted R Square	0.997
F Value	4.063
R	0.998
R Square	0.997
Sig	0.1975
Significant/ Non-significant	Non-Significant
Std. Error of the Estimation	0.562

3.2 Discussion

The administration of nonperforming resources is a startling assignment for each bank in the financial business. The significant reason and need for the executives of NPA is expected to their multi-dimensional impact on the operations, execution and position of bank. Consequences of concentrate through light on the degree of nonperforming resources of various banks and relation between various banks in the degree of nonperforming resources. The non-performing resource is a noteworthy issue and obstacle looked by banking industry. Wilful defaults, ill-advised handling of credit recommendations, poor monitoring, etc are the foundations for records for getting to be NPAs. NPAs influence the position just as execution in a few different ways, for example, intrigue pay, benefits, and provisions against NPA‟s, etc. Subsequently steps ought to be taken to fix this issue at most punctual and in a productive way. NPA.

4. Conclusion

This research can conclude from the aforementioned analysis and interpretation that the study emphasizes having a solid grasp of the macroeconomic variables. All of the nation's banks' operations were immediately impacted by gross and net non-performing assets (NPAs), which had a direct impact on the banks' profitability. The gross non-performing assets (NPA) and loss condition are displayed in the above findings. We can analyze the effects of non-performing assets (NPAs) in the banking industry using the data and information provided. It also illustrates the various policies implemented by the Indian government and banking association. NPA refers to the booking of funds in terms of a bad asset that happened as a result of a client's poor decision. Because so much of the earnings was invested in a project or asset that would yield a return, B NPA also results in opportunity costs. The ultimate reason for this is their multidimensional impact on the operations and performance of the bank. A non-performing asset is a serious problem and an obstacle to the banking sector. Deliberate defaults, improper handling of loan proposals, poor monitoring, etc. are the reasons for accounts that in future become NPAs. Therefore, steps should be taken to solve this problem as soon as possible.

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Conflict of Interest

The authors declare that they have no known financial or personal relationships that could have appeared to influence the work reported in this paper.

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