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Exploring The Relationship Between Credit Risk Management Practices and The Growth of Non-Performing Assets in Indian Banks

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Abstract

This research explores the nexus between credit risk management techniques and the increase in non-performing assets (NPAs) of Indian banks. Using a quantitative research methodology, questionnaires were administered to 150 banking experts and supported with secondary data from finance reports and RBI publications. The study examined the impact of several elements of credit risk management, including loan recovery procedures, portfolio diversification, credit monitoring systems, risk assessment tools, and credit appraisal processes, on non-performing assets (NPAs) using descriptive statistics, correlation, and regression techniques. The results indicate that the most important factors in reducing non-performing assets (NPAs) are credit appraisal and risk assessment, and that there is a strong negative association between NPA growth and best practices for credit risk management. While credit monitoring had a moderate effect, loan recovery and diversification of the portfolio were not very important in the present scenario. The results highlight the importance of sound credit appraisal and risk assessment in managing asset quality and suggest improvements in monitoring and recovery systems. These findings provide important advice for Indian banks and regulators to promote financial.

Keywords: Credit Risk Management, Non-Performing Assets, Indian Banks, Credit Appraisal, Risk Assessment Tools.

1.INTRODUCTION

The banking industry is the key driver of economic growth in any nation by ensuring financial intermediation, directing savings into productive investment, and ensuring overall financial stability. The Indian banking system has changed in a wide variety of ways over the decades, particularly with the liberalization policies of the 1990s. These reforms were accompanied by greater emphasis on performance, competition, and risk management. One of the most important problems that Indian banks still face is that of Non-Performing Assets (NPAs). The ongoing increase in NPAs not only has weakened the financial health of banks but also questioned the efficacy of their risk management structures, especially those related to credit risk management.

Credit risk is the risk of loss due to a borrower's inability to repay a loan or fulfill obligations under the contract. It is a fundamental risk inherent in the banking business, as lending is one of the main activities of financial institutions. Credit risk management, then, involves a set of practices and policies designed to reduce the probability and effect of default. These encompass borrower credit evaluation, collateral requirements, credit grading systems, risk-adjusted pricing, portfolio diversification, and ongoing monitoring. While the banks in India have progressively embraced cutting-edge credit risk management systems in accordance with regulatory directives like those prescribed by the (RBI) and global standards like the Basel norms, the rising NPAs of the past decade indicate a possible disconnect between such trends in the risk management practices and their true effectiveness.

The stability and profitability of the financial system are now most at danger from the rise in non-performing assets (NPAs) of Indian banks. Economic slowdown, weak credit appraisal processes, willful defaults, regulatory forbearance, and political intrusion in credit disbursement are some of the reasons behind rising NPAs. It is public sector banks that have suffered the most, with a large proportion of their loan books becoming non-performing. The implication is significant — not only does it undermine investor confidence and profitability, but it also constrains banks' ability to create new credit, hence impacting economic growth. In order to understand the underlying gaps and identify possible corrective actions, it is crucial to look into the connection between credit risk management methods and the rise in non-performing assets.

This study aims to examine the degree and kind of correlation between credit risk management procedures and the prevalence of non-performing assets in Indian banks. It attempts to evaluate whether risk evaluation and mitigation systems in vogue remain suitably realigned with real lending outcomes, or if loopholes in operations and implementation continue. In addition, the research aims to identify differences in practices adopted by public and private sector banks, thus providing a comparative outlook on institutional ability and issues. In doing so, it advances the debate on banking reforms, financial health, and policy interventions necessary to improve credit discipline and alleviate systemic risk.

2. REVIEW OF LITREATURE

Ali and Dhiman (2019) conducted an empirical investigation of how credit risk management affects Indian public sector commercial banks' profitability. Their findings showed a significant inverse relationship between credit risk indicators and bank profitability. Stated differently, they discovered that ineffective credit monitoring systems and a rise in the number of non-performing assets (NPAs) had a negative effect on public sector banks' ROA and ROE. The writers emphasized the desire for more stringent risk management structures and tighter loan appraisal structures to guarantee sustainable profitability.

Butola, Dube, and Jain (2022) further added to this discussion by examining public and private sector banks. Their study reaffirmed that effective credit risk management greatly enhanced bank profitability. They established that indicators like capital adequacy, loan-to-deposit ratios, and credit assessment process quality were highly correlated with financial performance. Their results highlighted that effective risk management practices not only lower default rates but also boost customer confidence and operational efficiency.

In a more recent study, Chaudhary and Kumar (2023) focused on the total impact of credit risk on Indian banks' performance. According to their research, credit risk is still a significant determinant of stability and profitability. They commented that even after regulatory reforms and adoption of Basel norms, numerous banks still lingered with high levels of NPAs due to lack of adequate credit appraisal, sectoral concentration of advances, and ineffective post-sanction monitoring. The research highlighted the need to incorporate advanced analytics and data-driven decision-making in credit risk management in order to reduce likely defaults.

Gaur (2024) examined the management of non-performing assets (NPAs) of Indian banks, specifically during and after the COVID-19 pandemic. The research sought to examine how the practices of credit risk management evolved in the face of economic disruption wrought by the global pandemic. Gaur noted that those banks that had employed quick and technology-based risk assessment measures stood to gain more in recognizing early warning signs of default during the pandemic. The study highlighted the increased significance of dynamic credit surveillance and industry-focused risk analysis in controlling the deterioration of assets during times of economic uncertainty. The study concluded that robust crisis-resilient credit risk models had decreased the exposure of banks to pandemic-fostered NPAs considerably.

Gaur and Gupta (2023) analyzed the contribution of intellectual capital in the management of NPAs in Indian banks. Their study presented an original approach by linking knowledge assets like employees' know-how, learning systems in the organization, and customer relationship management with credit quality improvement. The authors observed that banks with greater investment in intellectual capital reflected lower NPAs levels and improved loan performance. The research emphasized that in addition to financial capital and regulation adherence, intellectual capital development and usage were equally important for effective credit risk management. It hypothesized that strategic human resource development and intra-company knowledge sharing could reasonably improve risk foretelling and containment capacities.

3. RESEARCH METHODOLOGY

This section explains the methodology used to look at the relationship between credit risk management procedures and the growth of Indian banks' non-performing assets (NPAs). The research follows a quantitative research design to facilitate objectivity, precision, and replicability of findings. Through systematic data collection and statistical testing, the study

seeks to offer empirical evidence on how credit risk management influences the incidence of NPAs in the Indian banking system.

3.1. Research Design

The research employs a correlational and descriptive design of study. This research design is apt for identifying and describing patterns, trends, and association between risk management practices and NPA increases. The descriptive component permits summarizing the state of credit risk models in Indian banks, and the correlational component explores the direction and strength of the association between risk management factors and NPAs.

3.2. Nature of the Study

Primary data from structured questionnaires and secondary data from academic journals, financial reports, and regulatory reports are the main sources of this quantitative study.

3.3. Sample Size and Sampling Method

The research employs a sample of 150 responders, including banking experts, credit analysts, and risk managers working in different public and private sector banks in India. The sampling technique utilized is purposive sampling since it focuses on individuals with firsthand knowledge and experience of credit risk management practices and NPA management.

3.4. Data Collection Methods

- Primary Data: Primary data were gathered through a systematic questionnaire prepared to measure the credit risk management practices, i.e., those relating to credit appraisal procedures, risk assessment methods, credit watch mechanisms, and recovery practices. Respondents were requested to score different practices on a Likert scale.
- Secondary Data: Secondary data were collected using published annual reports of banks, Reserve Bank of India (RBI) publications, research journals, and industry-specific databases. These data gave quantitative measures of NPA levels and trends for the last five years.

3.5. Research Variables

- Independent Variables: Credit risk control techniques (e.g., credit evaluation systems, credit risk monitoring, portfolio diversification, risk assessment tools)
- Dependent Variable: Growth of Non-Performing Assets (NPAs) as calculated in terms of indicators like Gross NPA Ratio and Net NPA Ratio

3.6. Data Analysis Techniques

The gathered data were tested statistically using tools and software like SPSS. The following methods were utilized

- Descriptive statistics to provide a summary of the data (mean, standard deviation, frequencies).
- Correlation analysis to determine the direction and degree of the association between credit risk management and the rise in non-performing assets.
- Regression analysis to assess how different aspects of credit risk management affect NPA size.

3.7. Reliability and Validity

To confirm the questionnaire's reliability, pilot testing was done on a sample of 20 respondents. Cronbach's Alpha was measured to determine internal consistency. Instrument validity was established by expert review and by ensuring questions were aligned with existing credit risk frameworks and RBI guidelines.

Ethical research standards were observed during the study. The participation was voluntary, and the respondents were made aware of why the study was being conducted. Confidentiality and anonymity of data were ensured.

4. DATA ANALYSIS AND INTERPRETATION

This section gives the results based on the analysis of primary data obtained from 150 bankers working in different banks of India. The objective was to determine the relationship between the growth of non-performing assets (NPAs) and credit risk management strategies.

4.1. Descriptive Statistics

Table 1 presents the summary of answers on five key elements of credit risk management practices on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

Table 1: Descriptive Statistics of Credit Risk Management Practices

Variable	Mean	Std. Deviation	Interpretation
Credit Appraisal Procedures	4.21	0.68	Strong agreement on effective practices
Risk Assessment Tools	4.03	0.73	Good adoption, room for enhancement
Credit Monitoring Systems	3.88	0.80	Moderate effectiveness
Loan Recovery Mechanisms	3.65	0.85	Neutral to positive perception
Portfolio Diversification Strategies	3.79	0.78	Moderately agreed upon

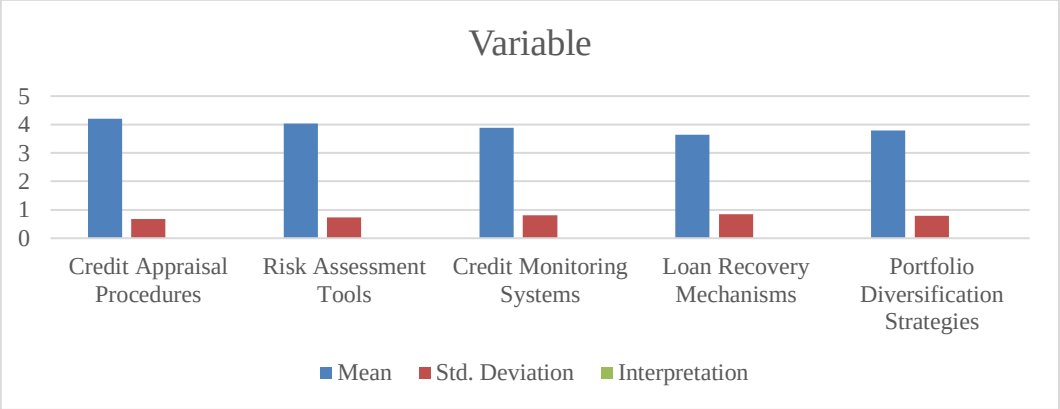

Figure 1: Graphical Representation of Descriptive Statistics of Credit Risk Management Practices

Most of the respondents confirmed that their banks have well-organized and efficient credit appraisal and risk assessment procedures. Credit monitoring and recovery mechanisms were rated a little lower, indicating areas for enhancement.

4.2. Correlation Analysis

To determine the direction and intensity of the associations between the amount of non-performing assets (NPAs) and credit risk management methods, the Pearson correlation test was employed.

Table 2: Correlation between Risk Practices and NPA Growth

Independent Variable	Correlation with NPAs (r)	Significance (p-value)	Relationship Type
Credit Appraisal Procedures	-0.482	0.000	Moderate Negative
Risk Assessment Tools	-0.441	0.002	Moderate Negative
Credit Monitoring Systems	-0.392	0.004	Weak to Moderate Negative
Loan Recovery Mechanisms	-0.366	0.011	Weak Negative
Portfolio Diversification Strategies	-0.274	0.028	Weak Negative

All aspects of credit risk management are inversely related with growth in NPA, with the relation statistically significant ($p < 0.05$). Better credit risk practices are related to lesser NPAs. Credit appraisal and risk assessment are most strongly inversely related with NPAs.

4.3. Regression Analysis

A multiple linear model was used to determine the explanatory ability of credit risk management elements on the NPA levels.

Table 3: Model Summary

R	R^2	Adjusted R^2	Std. Error of Estimate
0.578	0.334	0.316	0.487

Figure 2: Graphical Representation of Model Summary

The model accounts for about 33.4% of the variance in levels of NPA due to credit risk management practices, which is rated moderate for social science studies

Table 4: Coefficients of Regression

Independent Variable	B Coefficient	Std. Error	Beta (β)	t-value	Sig. (p)
Credit Appraisal Procedures	-0.328	0.078	-0.348	-4.21	0.000
Risk Assessment Tools	-0.294	0.092	-0.305	-3.41	0.001
Credit Monitoring Systems	-0.201	0.087	-0.226	-2.31	0.022
Loan Recovery Mechanisms	-0.154	0.095	-0.172	-1.62	0.107
Portfolio Diversification Strategies	-0.138	0.091	-0.123	-1.45	0.148

Regression findings show credit appraisal processes and risk evaluation tools to be the most powerful determinants of diminishing NPAs, with strong negative coefficients ($p = 0.000$ and 0.001 respectively). Credit monitoring systems also exert a significant negative influence on NPAs ($p = 0.022$), albeit to a lesser degree. Yet, mechanisms for loan recovery and portfolio diversification initiatives failed to demonstrate statistically significant impacts ($p > 0.05$), indicating their impact on NPA reduction may be less immediate or needs further enhancements. Overall, the results emphasize the paramount importance of complete credit appraisal and risk assessment in effective management of credit risk.

5.DISCUSSION

The current study used quantitative data collected from banking experts from a variety of public and private sector banks to examine the relationship between credit risk management strategies and non-performing asset growth (NPAs) in Indian banks. An important factor in enhancing banks' financial health is NPA levels, and the findings provide important insights into how different facets of credit risk management impact these levels.

Descriptive statistics showed that the overwhelming consensus among respondents was that good credit appraisal practices and risk assessment tools are well ingrained within their banks, with a mean above 4 on a scale of 5. This indicates a strong emphasis on preliminary credit evaluation and risk measurement as a starting point in credit risk management. Credit monitoring systems, loan recovery systems, and portfolio diversification approaches received relatively lower ratings, which reflects possible areas where Indian banks can enhance their practices.

Correlation analysis revealed that all of the five credit risk management elements have a statistically significant inverse correlation with NPAs, establishing that sound risk management procedures indeed keep asset defaults at bay. Of these, credit appraisal procedures and risk assessment tools proved to be most strongly inversely correlated, establishing their critical role

in pre-empting and controlling credit risks in advance of when the loans turn non-performing. The less strong but still substantial negative correlations of loan recovery and credit monitoring suggest that continuous monitoring and recovery also help to contain NPAs, albeit less authoritatively.

The regression findings also supported these results by measuring the effect of each of these components on NPA levels. Credit appraisal processes and risk measuring tools proved to be the strongest predictors that significantly lowered NPAs with significant p-values. This supports the fact that the rigor and quality of preliminary credit assessment and the accuracy of risk measurement tools directly affect asset performance. Credit monitoring systems were also an important, but lesser, contributor to NPA reduction, indicating the need for ongoing monitoring across the life cycle of the loan. On the other hand, mechanisms of loan recoveries as well as diversification of the portfolio did not have statistically significant impacts, which could reflect the fact that these are either less uniformly implemented or less effective in today's banking context. It proposes that banks may gain from enhancing these areas to further counteract credit risk.

On the whole, the report emphasizes that sound credit risk management, particularly good credit appraisal and risk assessment processes, plays a vital role in keeping the NPAs' growth in check in Indian banks. Although monitoring and recovery are still significant, the report indicates that prevention of NPAs build-up is started with strict credit evaluation and good risk measurement. These findings can assist Indian banks and regulators in prioritizing resources and reforms towards strengthening credit risk systems, leading to better asset quality and financial stability. Additional research would be able to investigate the changing role of recovery and diversification measures and identify the part of new technologies in credit risk management.

6.CONCLUSION AND RECOMMENDATIONS

This study used quantitative data gathered from 150 banking experts to examine the relationship between credit risk management procedures and the growth of non-performing assets (NPAs) in Indian banks. The study demonstrates a substantial and statistically significant inverse relationship between the level of non-performing assets (NPAs) and good credit risk management techniques. Particularly, credit approval processes and risk assessment mechanisms have been recognized as the most important determinants of successfully managing NPAs, highlighting their significance in the early detection and management of credit risks. Credit watch systems also help in managing NPAs, but to a lesser degree. In contrast, loan recovery processes and diversification of portfolios revealed weaker and statistically insignificant impacts on NPA reduction in the present banking scenario, indicating possible gaps or inconsistencies in their application. Overall, the study reiterates that effective credit risk management—especially at the appraisal and risk assessment levels—is essential to containing the expansion of NPAs and strengthening the financial health and stability of Indian banks. The findings highlight the need for ongoing risk management improvement frameworks, particularly enhancing credit monitoring and recovery procedures to better contain credit risks.

- Improve credit appraisal processes to conduct complete assessment of borrower risk prior to loan sanction.
- Implement sophisticated risk assessment techniques for improved prediction and early identification of future defaults.
- Enforce stronger credit monitoring systems through ongoing monitoring and real-time notifications during the loan life.
- Enhance mechanisms for recovery of loans through more efficient and customer-centric recovery processes.
- Revisit portfolio diversification to minimize concentration risk and ensure balanced credit exposure.
- Support regulation to foster improved credit risk management practices and technology uptake in banks.

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