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`EVALUATING THE IMPACT OF CREDIT RISK MANAGEMENT ON FINANCIAL PERFORMANCE: EVIDENCE FROM SELECT SMALL FINANCE BANKS

K. BHARATH NAIK
Research Scholar,
Department of Commerce, Osmania University, Hyderabad.
PROF. M. GANGADHAR
Research Supervisor,
Department of Commerce, Osmania University, Hyderabad.

ABSTRACT

The study examines the impact of credit risk management on the financial performance of select Small Finance Banks (SFBs) in India during the period 2016–17 to 2022–23. Adopting a quantitative research approach, the study utilizes the Altman Z-score model to assess credit risk using four key financial ratios: Working Capital to Total Assets (X1), Retained Earnings to Total Assets (X2), EBIT to Total Assets (X3), and Book Value of Equity to Total Liabilities (X4). Return on Assets (ROA) serves as the proxy for financial performance. The findings reveal that liquidity (X1) and retained earnings (X2) exhibit strong positive correlations with operating profit, highlighting their importance in profitability enhancement. While X3 and X4 show negative correlations initially, regression analysis indicates that EBIT to Total Assets (X3) has the most substantial positive influence on operating profit when other variables are controlled. All four indicators demonstrate statistically significant effects, suggesting that effective credit risk management strategies critically influence the profitability of SFBs. The study provides empirical evidence supporting the need for robust liquidity and internal capital retention policies to enhance financial sustainability and resilience in small-scale banking institutions.

Keywords: Credit Risk Management, Small Finance Banks, Financial Performance, Altman Z-Score, Operating Profit, Return on Assets, Liquidity, Regression Analysis.

INTRODUCTION

In the rapidly evolving aspect of the Indian banking sector, Small Finance Banks (SFBs) have emerged as a pivotal instrument for promoting financial inclusion, especially in underserved and unbanked regions. These banks were introduced by the Reserve Bank of India (RBI) with the specific objective of providing credit and basic banking services to small business units, marginal farmers, micro and small industries, and other unorganized sector entities. As they

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cater to a high-risk segment of borrowers, managing credit risk becomes not only essential but also a determinant of their operational efficiency and long-term sustainability.

Credit risk, often defined as the possibility of a loss resulting from a borrower's failure to repay a loan or meet contractual obligations, remains a core concern for financial institutions. Effective credit risk management (CRM) practices are crucial in ensuring the stability of any banking institution, more so for SFBs that function with a narrow capital base and heightened exposure to default-prone segments. While large commercial banks often rely on advanced credit rating models and diversified portfolios to manage risk, SFBs operate with more constraints and require tailored CRM frameworks to ensure sound lending practices and maintain profitability.

The significance of **financial performance**, particularly measured through profitability indicators such as **Operating Profit and Return on Assets (ROA)**, is inherently tied to a bank’s ability to manage its credit exposure efficiently. Among various financial metrics, **the Altman Z-score** model has gained relevance as a robust analytical tool for assessing the credit risk profile of firms and banks alike. It combines multiple ratios that reflect liquidity, profitability, leverage, and solvency, providing a composite view of financial health and potential distress. Applying this model to Small Finance Banks offers a structured approach to understanding how internal financial variables influence their operating outcomes.

Although there is substantial literature on credit risk management in the context of large commercial banks and financial institutions, **research focusing on the credit risk mechanisms and financial resilience of SFBs remains limited**. Given their growing role in bridging the financial gap in rural and semi-urban areas, there is a pressing need to understand the effectiveness of their credit risk practices and how these impact their performance. This is especially relevant in the post-COVID era, where rising default risks, tightened liquidity, and changing borrower profiles have added new layers of complexity to risk management in smaller banking setups.

In recent years, the Indian financial system has witnessed increasing complexities due to macroeconomic fluctuations, policy shifts, and changing borrower behavior. For Small Finance Banks, these dynamics underscore the importance of having robust credit risk management frameworks that can support prudent lending and safeguard institutional health. An in-depth understanding of how these banks assess, monitor, and mitigate credit risk will not only

strengthen their internal governance but also enhance their credibility in the eyes of regulators, investors, and the public.

The study highlights on the link between **credit risk management and financial performance**, this study holds implications for multiple stakeholders. Policymakers and regulators can use these findings to strengthen supervisory frameworks, while banking practitioners may leverage them to recalibrate their internal credit policies. Furthermore, the insights can guide investors and market analysts in understanding the operational robustness and risk-return profile of Small Finance Banks, ultimately contributing to the long-term development of an inclusive, stable, and efficient financial system.

REVIEW OF LITERATURE

Tomola Marshal Obamuyi (2012) the paper underscores the vital role of lending policies in shaping the loan performance of small and medium enterprises (SMEs) in Nigeria. By analyzing secondary data from both formal and informal financial institutions, it establishes a clear link between lending practices and loan performance, emphasizing the importance of stringent screening and monitoring procedures in formal institutions. The findings advocate for collaborative efforts between the government and lending institutions to devise lending guidelines that foster a conducive environment for SMEs to access funds promptly while mitigating default risks. This synthesis of policies aims to enhance credit management practices and ultimately bolster the growth and sustainability of SMEs in Nigeria's financial landscape.

Alberto Dreassi, et al (2013) This paper offers an in-depth analysis of the credit quality characteristics of supervised Italian Mutual Guarantee Credit Institutions (MGCIs) supporting Small and Medium Enterprises (SMEs), departing from the predominantly descriptive focus of existing literature. By delving into the determinants of impaired guarantees amidst a challenging economic climate and conducting a comparative assessment of MGCIs and Cooperative Banks (CBs), we provide valuable insights into product differentiation, risk management strategies, and portfolio management variances. Our findings highlight the significance of intermediary size and regulatory capital in influencing MGCIs' impairments, contrasting with the close correlation between non-performing loans in CBs and net loan interest income. This study contributes nuanced perspectives to inform strategic decision-making and regulatory frameworks, particularly in supporting SMEs' access to credit amidst evolving economic conditions.

Christine Avortri et al. (2013) investigates obstacles to Small and Medium Scale Enterprises (SMEs) accessing credit in Ghana's liberalized financial sector. Through a survey of 100 SMEs in the Accra metropolis, persistent challenges such as security requirements, difficulty in securing personal guarantors, absence of accounting records, and risk aversion are highlighted. Recognizing these barriers is crucial for policymakers and stakeholders to foster SME development and economic growth.

Lang Zhang, et al (2015) The study proposes an index system for effective credit risk assessment in Supply Chain Finance (SCF), integrating the credit status of leading enterprises and supply chain dynamics. Utilizing Support Vector Machine (SVM) and BP Neural Network techniques, two assessment models are developed to highlight the importance of incorporating supply chain relationships into credit risk evaluation, particularly for Small and Medium Enterprises (SMEs). The proposed SCF credit risk assessment index system enhances banks' ability to predict SME default likelihood accurately, facilitating increased access to loans. The SVM model emerges as a robust tool, surpassing the BP neural network model in effectiveness and generalization ability. By integrating the SCF credit risk assessment index system with the SVM model, commercial banks can markedly improve SME credit risk evaluation, optimizing lending decisions and mitigating credit rationing. This approach offers a promising solution for enhancing the efficiency and accuracy of credit risk assessment within SCF frameworks.

Abayomi Adewale Adedeji, et al (2018) the paper presents a comprehensive framework highlighting the pivotal role of credit management in small-scale enterprises' performance. Despite efficient practices, the study underscores the necessity of robust debt recovery strategies. Utilizing primary data from deposit and microfinance banks alongside small-scale business owners, the research reveals a lack of expertise in record-keeping among entrepreneurs, emphasizing the need for enhanced customer education. The findings offer valuable insights for entrepreneurs, financial institutions, and policymakers, aiming to inform strategies that promote business resilience and inclusive economic growth.

Anandaraman R (2020) The study identifies that the Finance serves as a cornerstone for credit supply in India's agricultural and allied sectors, with the government implementing subsidy-based schemes for short-term and long-term loans to support various initiatives. These schemes are strategically planned to promote innovative production and market-based activities, targeting specific objectives. NABARD plays a pivotal role in disbursing financial grants to bolster small-scale enterprises and economic-oriented credit flows across the country. Working

capital, primarily sourced from finance, is indispensable for efficient operational and managerial functions within organizations, ensuring their smooth operation. As an apex financial institution, NABARD channels substantial funds into credit linkage schemes, thereby fostering growth and sustainability across diverse economic activities.

Jianhan Zhu (2020) highlights the pivotal role of Policy-based Export Credit Insurance Institutions in supporting small and micro enterprises through Inclusive Finance initiatives. The paper emphasizes the need for effective risk control, shifting the focus of risk management towards maximizing social benefits. A Comprehensive Risk Management approach is proposed to address the characteristics and challenges of Inclusive Finance risk management, aiming to improve service delivery and risk management in the sector.

Adam Banda et al. (2021) underscores the crucial role of Microfinance Institutions (MFIs) in providing financial services to small enterprises and low-income households, contributing to poverty reduction and economic development. Effective credit management, including clear credit standards, policies, terms, and collection practices, is highlighted as essential for the success and sustainability of MFIs.

Chenyang Wu et al. (2022) discuss the transformative impact of big data technology on supply chain finance in the digital era. The integration of big data mitigates information gaps, reduces credit default risks, and enhances financing efficiency for SMEs. Visualization of credit risks and accurate fund allocation enable better supervision of fund usage and strengthen risk management capabilities, promoting deeper connections between enterprises and fostering transaction efficiency.

Vien the Giang, et al. (2022) emphasize the imperative of addressing weaknesses within Vietnam's small-scale commercial banks to ensure financial system stability and foster economic development. They advocate for a coordinated approach between economics and law to effectively handle weak banks, highlighting the efficacy of administrative intervention measures such as compulsory consolidation or acquisition. Moving forward, they stress the importance of organizational restructuring based on sustainability criteria and market mechanisms, alongside a clear legal framework for foreign investors. Additionally, they recommend research on effective bankruptcy procedures for commercial banks to further fortify the financial system.

Nyoman Bontot, et al (2023) The paper presents a compelling exploration into the strategies employed by LPDs, microfinance institutions in traditional Balinese villages, to not only

endure but thrive amidst intense competition. It becomes evident that LPDs' focus on serving unbankable populations and adopting a benefit-oriented approach, rather than solely profit-driven motives, underpins their success. Particularly noteworthy is the implementation of the Blue Ocean Strategy, which enables LPDs to create a distinct market niche by targeting indigenous villagers and fostering community trust. This research underscores the resilience and innovation inherent in microfinance institutions like LPDs, offering valuable insights for stakeholders interested in fostering sustainable financial inclusion initiatives.

Changjun Wu (2024) emphasizes the significance of China's national unified credit information database in advancing the country's credit system. As various financial entities gain access to the credit investigation system, standardized access and management protocols are essential. The paper suggests supervisory measures leveraging big data to regulate institutions' access to the Central Bank's credit investigation system, enhancing the integrity and accuracy of China's credit information system to facilitate economic development and financial stability.

RESEARCH GAP

The study implies that though extensive research exists on credit risk management in the broader banking sector, there remains a noticeable lack of focused studies on the practices adopted by small finance banks. These institutions have emerged as key financial service providers for underbanked populations, including small businesses and low-income individuals. However, empirical evidence exploring their distinct credit risk management strategies is scarce. This gap underscores the necessity for an in-depth investigation into the tools, policies, and frameworks used by small finance banks to handle credit risk effectively. Such research is vital not only for enriching academic discourse but also for offering valuable guidance to regulators, policymakers, and banking professionals aiming to reinforce the operational resilience and financial soundness of small finance banks in today’s evolving economic environment.

RESEARCH QUESTIONS

1. Which components of credit risk management (e.g., liquidity, retained earnings, profitability, capital structure) significantly affect the financial performance of these banks?
2. Is there a measurable relationship between Altman Z-Score variables and the profitability indicators of Small Finance Banks?

OBJECTIVES OF THE STUDY

1. To examine the relationship between the Credit Risk Management of select Small Finance Bank with its Operating Profit.
2. To study the impact of Credit Risk Management of select Small Finance Bank on Operating Profit.

HYPOTHESES OF THE STUDY

H0: There is no relationship exist between the Credit Risk Management score with select Small Finance Banks' Operating profit.

H0: Credit Risk Management has no Impact on select Small Finance Banks' Operating Profit.

SCOPE OF THE STUDY

The aim of the study relationship and impact of the Four Small Finance Banking which are listed under National Stock Exchange and Bombay Stock Exchange. For this purpose, Seven-year period from 2016-17 to 2023-24 is being considered. The study has considered the following sample banks for the study

- Suryoday Small Finance Bank
- Ujjivan small Finance Bank
- Equitas Small Finance Bank
- AU Small Finance Bank

RESEARCH METHODOLOGY

Research Approach:

This study will adopt a quantitative research approach, employing numerical data collection and analysis to test hypotheses and address research inquiries. Quantitative research methodologies are commonly utilized in the fields of finance and economics, offering the advantage of statistical analysis on extensive datasets.

The study adopted the Altman Z score for the measurement of Credit Risk Management. The following is the methodology.

Data Sources: The study collected the secondary data from the annual reports of the Small Finance Banks.

Study Period: The study has been considered 2016-17 to 2023-24.

Variables Considered: The study considered the following key ratios for the calculation of Z score to identify the credit risk management of the selected Small Finance Banks.

X1 = Working Capital to Total Assets, **X2** = Retained Earnings to Total Assets, **X3** = EBIT to Total Assets, **X4** = Book value of Equity to Total Liabilities, **Financial Performance** Proxy = Return on Assets.

STATISTICAL TOOLS:

The following are the statistical tools

Bi-variate Correlation: The study applied bi-variate correlation to know the credit risk management components with the Financial Performance indicators.

Ordinary Least Square Method: The study applied the OLS to know the Impact of credit risk management of the Small Finance Banks on its Financial Management.

DATA ANALYSIS

Objective-1: To examine the relationship between the Credit Risk Management of select Small Finance Bank with its Operating Profit.

The Objective aims to examine the relationship between Credit Risk Management and Operating Profit of select Banks. The ***Bivariate Correlation*** *analysis has been employed to measure the strength and direction of association between credit risk indicators and the banks' operating profitability, represented by the Z-Score.*

Table No-1

Relationship between CRM and SFB's Operating profit

	Z_SCORE	X1	X2	X3	X4
	1				
X1 = Working Capital to Total Assets	0.9526	1			
X2 = Retained Earnings to Total Assets	0.8759	0.7091	1		
X3 = EBIT to Total Assets	-0.07348	-0.2984	0.1038	1	
X4 = Book value of Equity to Total Liabilities	-0.2328	-0.1284	-0.4368	-0.2430	1

Source: Secondary Data (Annual Report)

The relationship table reveals the correlation between key credit risk management indicators and the operating profit (Z-Score) of selected Small Finance Banks—Suryoday, Ujjivan, Equitas, and AU Small Finance Bank. A strong positive correlation (0.9526) is observed between Working Capital to Total Assets (X1) and the Z-Score, indicating that higher liquidity and efficient working capital management are closely associated with improved operating profitability in these banks. Similarly, Retained Earnings to Total Assets (X2) also shows a high positive correlation (0.8759) with the Z-Score, indicating that accumulated profits play a significant role in strengthening the banks' financial stability and profitability.

In contrast, EBIT to Total Assets (X3) and Book Value of Equity to Total Liabilities (X4) demonstrate negative correlations with the Z-Score, at -0.07348 and -0.2328 respectively. The weak negative correlation of EBIT to Total Assets implies that current earnings have a limited or potentially inverse influence on operating profitability, which may suggest inconsistency in earnings generation or higher provisioning affecting EBIT. Likewise, the negative relationship with equity-to-liabilities ratio might reflect that a higher equity base, while reducing financial risk, does not directly contribute to short-term operating profit, possibly due to conservative capital structuring or underutilized equity. Overall, the study highlights that among the credit risk indicators, liquidity (X1) and retained earnings (X2) are the most influential factors with positive relationship on operating profit, while profitability (EBIT) and capital structure (X4) show less favorable relationship in the short term for the selected Small Finance Banks. Therefore, the study rejects the null hypothesis and accepts that there is significant relationship between the Credit Risk Management of select Small Finance Bank with its Operating Profit.

Objective-2: To study the impact of Credit Risk Management of select Small Finance Bank on Operating Profit.

To study the impact of Credit Risk Management on the operating profit of select Small Finance Banks, the study employs ***Ordinary Least Squares (OLS)*** *covering the period from 2017 to 2024.*

Table No-2 Impact of CRM of SFB on Operating profit

Dependent Variable: Z_SCORE	
Method: Panel Least Squares	

Sample: 2017 2024				
Periods included: 8				
Cross-sections included: 4				
Total panel (balanced) observations: 32				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	6.5600	1.02E-15	6.42E+15	0.0000
X2	3.2600	2.10E-15	1.56E+15	0.0000
X3	6.7200	1.58E-14	4.26E+14	0.0000
X4	1.0500	6.01E-15	1.75E+14	0.0000
R-squared	0.689421	Mean dependent var		-2.892325
Adjusted R-squared	0.632654	S.D. dependent var		0.957226
S.E. of regression	1.30E-15	Akaike info criterion		-65.58145
Sum squared resid	4.06E-29	Schwarz criterion		-65.39113
Log likelihood	922.1402	Hannan-Quinn criter.		-65.52326
Durbin-Watson stat	1.508620			

Source: Secondary Data (Annual Report)

The above table represents the impact of Credit Risk Management on the Operating Profit of select Small Finance Banks, a panel least squares regression was conducted using data from 2017 to 2024. The dependent variable in the model is the Z-Score, representing operating profitability, while the independent variables are key credit risk indicators. The results show that all four independent variables have a significant impact on the Z-Score, with p-values equal to 0, indicating high reliability of the results. Among the predictors, EBIT to Total Assets (X3) has the highest coefficient (6.72), implying that profitability from operations is the most influential driver of operating profit. This is closely followed by Working Capital to Total Assets (X1) with a coefficient of 6.56, highlighting the crucial role of liquidity in sustaining operational efficiency and profitability.

Retained Earnings to Total Assets (X2) also demonstrates a strong positive impact (coefficient: 3.26), indicating that internally generated funds strengthen financial resilience and contribute positively to profits. Lastly, Book Value of Equity to Total Liabilities (X4), although with a relatively lower coefficient (1.05), still shows a positive and significant effect on operating profit, indicating that a sound capital structure enhances financial health and indirectly supports profitability. Overall, the regression analysis confirms that effective credit risk management—

particularly through improved earnings, liquidity, and capital retention—has a meaningful and positive impact on the operating performance of Small Finance Banks. Therefore, with regards to the results obtained the study rejects the H0 and accepts the H1 that there is significant impact of Credit Risk Management of select Small Finance Bank on Operating Profit.

LIMITATIONS OF THE STUDY

1. The study considered the ROA as proxy for the financial performance indicator.
2. The study confined to listed Small Finance Banks and not considered the unlisted small financial banks
3. The study focused on the small financial banks and RBI guidelines were not considered, which were adopted by the commercial banks.

FINDINGS OF THE STUDY

- The study indicates that Working Capital to Total Assets (X1) has a strong positive correlation with Operating Profit (Z-Score), with a correlation value of 0.9526, while Retained Earnings to Total Assets (X2) shows a positive correlation of 0.8759, highlighting the significance of liquidity and internal funds in enhancing profitability.
- The study observed that EBIT to Total Assets (X3) and Book Value of Equity to Total Liabilities (X4) have negative correlations with the Z-Score, at -0.07348 and -0.2328 respectively, indicating that current earnings and capital structure may not positively contribute to short-term profitability.
- The study implies that among the credit risk indicators, X1 (liquidity) and X2 (retained earnings) are the most influential variables in positively driving operating profit in Small Finance Banks, whereas X3 (profitability) and X4 (capital structure) are less favorable in the short run.
- The study found that Working Capital to Total Assets (X1) has a significant positive impact on Operating Profit, with a regression coefficient of 6.56 and a p-value of 0, confirming the critical role of liquidity in financial performance.
- The study examined that EBIT to Total Assets (X3), despite its negative correlation earlier, has the highest positive regression coefficient of 6.72 ($p = 0$), indicating that when controlled for other variables, it has a strong impact on profitability.
- The study identified that all credit risk indicators—X1 (6.56), X2 (3.26), X3 (6.72), and X4 (1.05)—have statistically significant effects on Operating Profit ($p = 0$), leading to

the rejection of the null hypothesis and confirming a significant impact of Credit Risk Management on Operating Profit in the selected Small Finance Banks.

CONCLUSION

The study comprehensively explores the relationship and impact of Credit Risk Management on the operating profitability of select Small Finance Banks. The findings reveal that effective management of liquidity and internal reserves plays a critical role in enhancing the financial performance of these banks. Specifically, indicators such as working capital and retained earnings demonstrate a strong and consistent association with operating profit, underlining their strategic importance in credit risk practices. While capital structure and profitability show mixed or less favorable relationships in the correlation analysis, their influence becomes more evident under multivariate regression, emphasizing the complexity of their roles when analyzed in isolation versus controlled environments. Overall, the study concludes that credit risk management indicators are significantly linked to an impact the operating profit of Small Finance Banks, reinforcing the need for a balanced and proactive financial strategy that integrates liquidity management, retained earnings utilization, and efficient allocation of equity and earnings. This insight provides valuable guidance for financial decision-makers and policy formulators aiming to strengthen the operational performance and resilience of small finance institutions.

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