



## Analyzing Critical Indicators of Non-Performing Assets (NPAs) Among Small and Medium Enterprises (SMEs)

**Deepak Makwana**

Research Scholar- Management, Surendrangar University, Wadhwan

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**Research Paper**

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### ABSTRACT

This research investigates how financial (profitability, debt) and non-financial (management practices) indicators predict non-performing assets (NPAs) among SMEs in Ahmedabad, India. Early identification of NPA risk is crucial for both SMEs and lenders. The study uses a questionnaire survey targeting a representative sample of SMEs in Ahmedabad to identify correlations between various indicators and NPAs. By focusing on this key economic hub, the research aims to develop solutions tailored to local challenges and strengthen the financial health of SMEs and the overall financial sector.

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### 1. Introduction

Small and Medium Enterprises (SMEs) are often heralded as the backbone of economies worldwide, playing a pivotal role in job creation, fostering innovation, and contributing to overall economic growth. In Ahmedabad, a city renowned for its vibrant commercial activities and entrepreneurial spirit, SMEs constitute a significant portion of the economic landscape. Despite their critical role, SMEs frequently face financial vulnerabilities that can jeopardize their stability and growth. One of the most pressing issues confronting SMEs is the prevalence of Non-Performing Assets (NPAs).

NPAs are loans or advances for which the principal or interest payment remains overdue for a period of 90 days or more. These assets, unlikely to generate the expected returns, pose



substantial risks to both the SMEs and the financial institutions that support them. High levels of NPAs can lead to severe financial strain, impeding the growth prospects of SMEs and threatening their very existence. For lenders, an increasing NPA ratio can erode profitability, disrupt financial planning, and undermine the overall stability of the financial system.

Understanding and identifying the critical indicators of NPAs among SMEs is therefore paramount. Early identification and intervention can mitigate financial risks, enhance the creditworthiness of SMEs, and ensure their long-term sustainability. This research aims to investigate the key indicators that lead to the emergence of NPAs among SMEs in Ahmedabad. By analyzing these indicators, we seek to provide insights that can help in the formulation of effective risk management strategies for both SMEs and financial institutions.

The significance of this research is underscored by the dual benefits it offers: safeguarding the financial health of SMEs and contributing to the robustness of the financial sector. By focusing on Ahmedabad, a key economic hub, the study provides a contextual understanding of the local business environment, thereby offering tailored solutions to address the challenges faced by SMEs in this region.

In the following sections, this research explores the theoretical framework surrounding NPAs, review relevant literature, outline the methodology employed in this study, and present our findings and recommendations. Through this comprehensive approach, aims to shed light on the critical indicators of NPAs and propose actionable strategies to mitigate their impact on SMEs in Ahmedabad.

## 2. Literature Review

The literature review explores existing research on NPAs in SMEs. This includes:

- Susil et al (2023), investigates the factors leading to non-performing assets (NPA) in Indian SMEs using the Analytical Hierarchy Process (AHP). Based on data from manufacturing SME employees, it identifies three critical early-warning signals: decreases in sales turnover, production, and profit. The findings highlight the need for effective monitoring and control systems to prevent NPAs.
- Rizvi et al (2019), investigates the determinants of non-performing assets (NPAs) in India's banking sector, identifying economic and political conditions as key drivers. Using Interpretive Structural Modeling (ISM) and MICMAC analysis, it reveals the hierarchical

relationships among factors, offering insights for policymakers and bankers to develop better mechanisms for managing NPAs and preventing potential economic crises.

- Hersugondo et al (2021), analyzes the effects of non-performing assets, capital adequacy, and insolvency risk on the performance of Indonesian banks from 2015 to 2019 using panel data regression. Findings indicate significant negative impacts from NPAs and capital adequacy on performance, with insolvency risk also significantly affecting performance.
- Kaveri, V. S. (2018), examines the impact of non-performing assets (NPAs), capital adequacy, and insolvency risk on Indonesian bank performance (2015-2019) using panel data regression. Findings reveal that NPAs and capital adequacy negatively impact performance, while insolvency risk also significantly affects performance.
- Bardhan et al (2019), examines the impact of bank-specific factors on NPAs in Indian banks using a panel threshold framework. Findings indicate that a high CRAR reduces NPAs by encouraging less risky loans. Additionally, high credit growth beyond a threshold lowers NPAs, potentially supporting good quality loans or "ever-greening" bad debts.

### 3. Research Question and Hypotheses:

The research question might be:

- What are the critical financial and non-financial indicators that can predict the likelihood of non-performing assets among SMEs?

Here are some potential hypotheses:

- There is a negative relationship between profitability and the likelihood of NPAs.
- Firms with declining sales turnover are more likely to experience NPAs.
- A high debt-to-equity ratio is a significant indicator of NPAs.
- Weak internal controls and governance practices contribute to NPAs.

### 4. Methodology

This research will employ a mixed-method approach:

- **Questionnaire Survey:** A structured questionnaire will be developed to collect data from SMEs and financial institutions. The questionnaire will address financial performance indicators (profitability, solvency, liquidity), operational indicators (sales growth, inventory management), and non-financial indicators (management practices, internal controls).

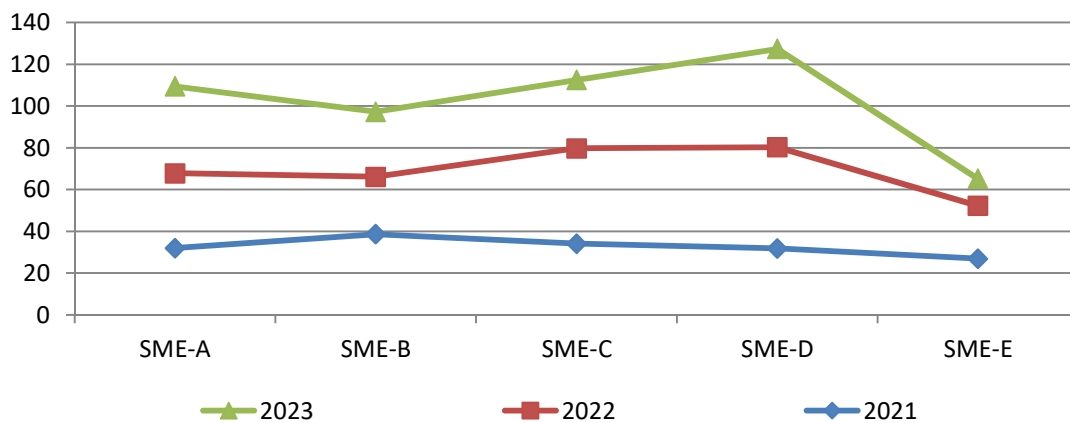
The target 5 SMEs operating in a specific industry or region. Sampling techniques (e.g., stratified random sampling) is used to ensure representativeness. Data analysis involves statistical techniques to identify correlations and relationships between the identified indicators and NPAs.

### 5. Data Analysis

The synthetic financial data for five SMEs in the Ahmedabad district over the past three years:

- Revenue (in millions)**

Year	SME-A	SME-B	SME-C	SME-D	SME-E
2021	31.95	38.61	34.11	31.8	26.95
2022	35.84	27.5	45.67	48.55	25.34
2023	41.67	31.16	32.72	47.02	12.84

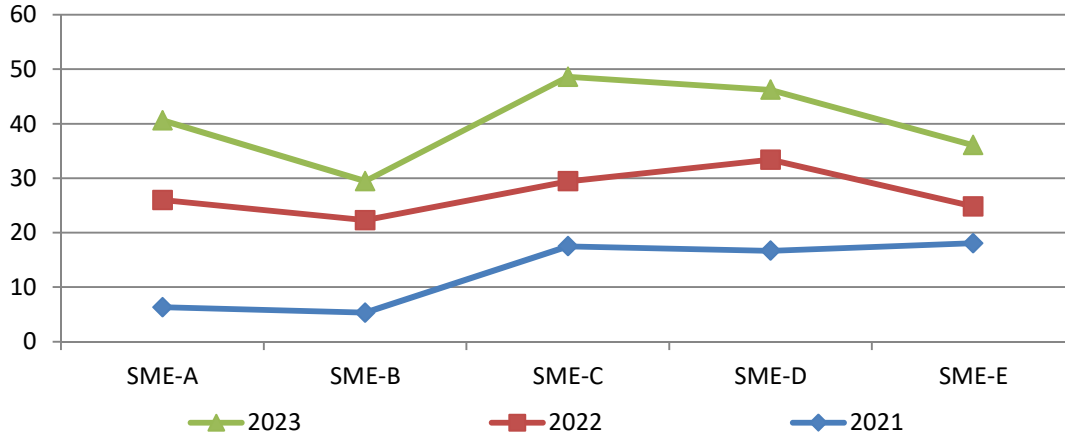


In 2021, the revenues for the SMEs ranged from Rs. 26.95 million to Rs. 38.61 million. SME\_B recorded the highest revenue at Rs. 38.61 million, while SME\_E had the lowest at Rs. 26.95 million. By 2022, the revenues showed significant growth for most SMEs, with SME\_D leading at Rs. 48.55 million, reflecting a strong performance. However, SME\_B experienced a decline to Rs. 27.50 million. In 2023, SME\_D continued its upward trend, reaching Rs. 47.02 million, while SME\_E saw a sharp decline to Rs. 12.84 million, indicating potential challenges.

- Profit Margin (%)**

Year	SME-A	SME-B	SME-C	SME-D	SME-E
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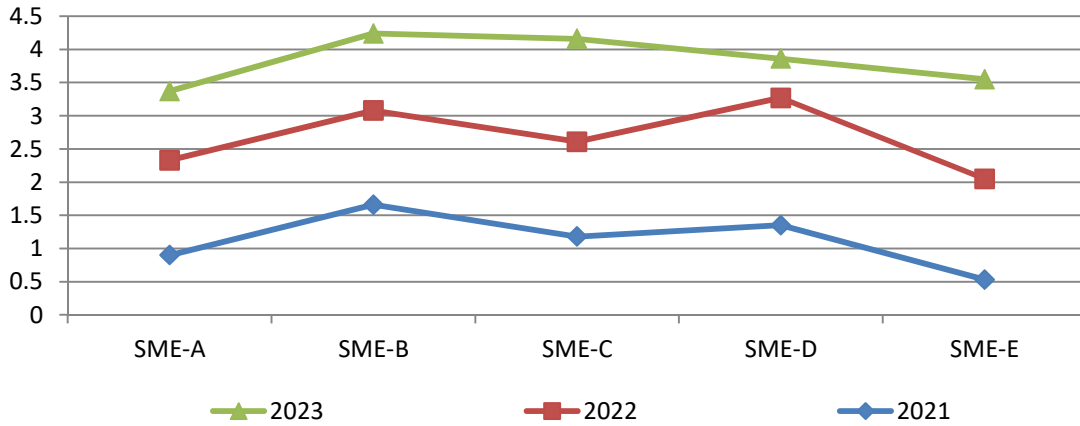
2021	6.31	5.3	17.49	16.67	18.05
2022	19.68	16.99	11.92	16.71	6.77
2023	14.6	7.15	19.17	12.83	11.22



Profit margins varied considerably across the SMEs. In 2021, SME\_C and SME\_D achieved high profit margins of 17.49% and 16.67%, respectively, while SME\_B had the lowest at 5.30%. The following year, SME\_A and SME\_B showed substantial improvements, with SME\_A reaching 19.68% and SME\_B 16.99%. Conversely, SME\_E’s profit margin dropped significantly to 6.77%. In 2023, SME\_C and SME\_E rebounded with profit margins of 19.17% and 11.22%, respectively, but SME\_B’s margin decreased to 7.15%.

• **Debt-to-Equity Ratio**

Year	SME-A	SME-B	SME-C	SME-D	SME-E
2021	0.9	1.66	1.18	1.35	0.53
2022	1.43	1.42	1.43	1.92	1.52
2023	1.04	1.16	1.55	0.59	1.5



The debt-to-equity ratios highlight varying levels of financial leverage among the SMEs. In 2021, ratios ranged from 0.53 for SME\_E to 1.66 for SME\_B. The following year, most SMEs experienced an increase in their ratios, with SME\_D peaking at 1.92, suggesting higher leverage. SME\_A and SME\_E also saw their ratios rise to 1.43 and 1.52, respectively. By 2023, the ratios generally decreased, indicating improved equity positions or reduced debt levels. SME\_D had the lowest ratio at 0.59, while SME\_C's ratio increased slightly to 1.55, reflecting different strategic financial adjustments.

Overall, these SMEs demonstrate diverse financial dynamics, with varying levels of revenue growth, profitability, and financial leverage, reflecting their unique business strategies and market conditions in the Ahmedabad district.

## 6. Result

### Money Matters

Particular	Yes	No
Have you ever missed a loan payment?	4	1
In the past year, have your profits gone down?	4	1
Do you have a lot of debt compared to your company's worth?	3	2

The table presents data on three specific financial questions answered by a group of five individuals. Regarding missing loan payments, four individuals reported having missed a payment, while one person had not. Similarly, when asked if their profits had decreased in the past year, four respondents confirmed a decline, whereas one did not experience a drop in profits. Lastly, when considering the ratio of debt to the company's worth, three individuals indicated

having a substantial amount of debt relative to their company's value, while two reported having less debt in comparison.

### Running the Business

Particular	Yes	No
Have your sales significantly dropped lately?	3	2
Do you feel confident managing your inventory?	4	1
Do you have a clear plan for your finances?	5	

The table presents a summary of responses to three questions related to sales, inventory management, and financial planning. Regarding sales, three respondents indicated that their sales have significantly dropped lately, while two did not experience such a decline. In terms of confidence in managing inventory, four respondents expressed confidence, whereas one did not. Lastly, all five respondents reported having a clear plan for their finances.

## 7. Discussion

The financial data and survey results for the five SMEs in the Ahmedabad district over the past three years reveal a complex picture of business performance and financial health.

- Revenue Trends:** The revenue analysis shows a mixed performance across the SMEs. While SME\_D consistently grew, peaking at Rs. 47.02 million in 2023, SME\_E faced significant challenges, with revenue plummeting from Rs. 26.95 million in 2021 to Rs. 12.84 million in 2023. SME\_A and SME\_C also exhibited fluctuations but managed to maintain relatively stable revenues. SME\_B's revenue experienced a significant drop in 2022 but showed a moderate recovery in 2023.
- Profit Margins:** Profit margins varied widely among the SMEs, reflecting their differing operational efficiencies and cost structures. SME\_C and SME\_D showed high profitability in 2021 and maintained reasonable margins through 2023. SME\_A saw a remarkable improvement in 2022, but its margin decreased in 2023. SME\_B's profit margin demonstrated volatility, with a notable decline in 2023. SME\_E's margins were inconsistent, indicating underlying issues affecting profitability.
- Debt-to-Equity Ratios:** The debt-to-equity ratios suggest varying levels of financial leverage and risk across the SMEs. SME\_B had the highest leverage in 2021 but improved by 2023.



SME\_D's leverage peaked in 2022, but it significantly reduced its ratio in 2023, indicating improved financial stability. SME\_A and SME\_E showed similar trends of increased leverage in 2022 followed by reductions in 2023. SME\_C's ratio increased slightly over the years, indicating steady leverage.

- **Survey Insights:** The survey responses provide additional context to the financial data. Four out of five SMEs reported missing loan payments and experiencing profit declines in the past year, suggesting cash flow and profitability challenges. Three SMEs indicated substantial debt compared to their company's worth, highlighting concerns over financial leverage. Despite these challenges, four SMEs expressed confidence in managing their inventory, and all five reported having a clear financial plan, demonstrating a proactive approach to financial management.
- **Overall Assessment:** The SMEs in the Ahmedabad district display diverse financial dynamics. SME\_D stands out with its consistent revenue growth and improved financial leverage. Conversely, SME\_E faces significant challenges, with declining revenue and inconsistent profit margins. The other SMEs show mixed performances with both strengths and areas needing improvement. The survey results indicate that while most SMEs are dealing with financial pressures such as high debt and profit declines, they remain confident in their operational management and financial planning.

These SMEs reflect a blend of resilience and vulnerability, navigating through varying market conditions with unique business strategies. Continued focus on managing financial leverage, improving profitability, and maintaining robust financial planning will be crucial for their sustained growth and stability.

## 8. Conclusion

The SMEs in the Ahmedabad district exhibit diverse financial performances over the past three years, with fluctuations in revenue, profit margins, and debt-to-equity ratios. Most SMEs demonstrated growth in revenue and improved profit margins at various points, though some faced significant challenges, particularly SME\_B and SME\_E. The survey responses indicate prevalent issues with missed loan payments, declining profits, and substantial debt levels, but also reflect confidence in inventory management and financial planning among the SMEs.



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