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### A study on financial performance using Altman's Z model at frontier industrial co-operative tea factory Ltd Erumad

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#### Abstract

The study titled "A Study on Financial Performance Using Altman's Z-Score Model at Frontier Industrial Co-operative Tea Factory Ltd, Erumad" evaluates the company's financial health and stability. Using the Altman's Z-Score model, the research analyzes financial data from balance sheets and income statements to assess profitability, liquidity, solvency, and efficiency. The Z-Score helps determine the firm's position in the safe, grey, or distress zone, indicating its risk of bankruptcy. Findings reveal that while the company shows moderate financial stability, there is scope for improvement in working capital management and cost control. The study concludes that continuous monitoring and strategic financial planning are essential for enhancing overall financial performance and ensuring sustainable growth.

**Keywords:** Financial performance analysis, Altman's z-score model, financial stability

#### Introduction

Financial performance analysis is one of the most crucial aspects of assessing an organization overall health, efficiency, and long-term sustainability. It provides deep insights into how effectively a company utilizes its resources to generate profit, maintain liquidity, and ensure solvency. In the current dynamic business environment, where competition and market fluctuations are intense, financial analysis serves as a fundamental tool for decision-making, strategic planning, and risk assessment. Among the various techniques used to evaluate financial performance, Altman's Z-Score model has emerged as one of the most reliable and widely accepted methods to predict corporate financial distress and bankruptcy. Developed by Edward Altman in 1968, the model uses a combination of financial ratios derived from balance sheets and income statements to assess the likelihood of an organization facing financial difficulty. The Z-Score model not only measures financial stability but also acts as a valuable early warning system for stakeholders, including management, investors, creditors, and regulatory bodies.

#### Objectives of the study

- To evaluate the financial performance of Frontier Industrial Co-operative Tea Factory Ltd., Erumad using Altman's Z-Score Model.
- To assess the financial stability and determine the potential risk of insolvency of the factory.
- To analyse the key financial ratios influencing the factory's overall performance.
- To offer practical suggestions for strengthening the financial health and improving the operational efficiency of the organization

#### Review of literature

- **Altman, E. I. (1968)**<sup>[1]</sup>: Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. The Journal of Finance, this seminal study by Altman (1968)<sup>[1]</sup> is widely regarded as the foundational work in the field of financial distress prediction.
- **Brigham, E. F., & Houston, J. F. (2020)**<sup>[2]</sup>: Fundamentals of financial management (15th ed.). Cengage Learning. This comprehensive textbook by Brigham and Houston (2020)<sup>[2]</sup> provides an in-depth exploration of core financial management principles and

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practices. It covers essential topics such as financial analysis, planning, budgeting, capital structure, risk management, and investment decision-making.

- **Deakin, E. B. (1972)** <sup>[3]</sup>: A discriminant analysis of predictors of business failure. *Journal of Accounting Research*, 10(1), 167-179. In this influential study, Deakin (1972) <sup>[2]</sup> applied discriminant analysis to a variety of financial ratios in order to identify early indicators of business failure. Using a sample of manufacturing firms, the research examined key financial ratios related to liquidity, profitability, leverage, and efficiency, and developed a statistical model capable of distinguishing between financially healthy companies and those at risk of bankruptcy.
- **Kothari, C. R., & Kothari, R. (2019)** <sup>[4]</sup>: Research methodology: Methods and techniques (4th ed.). New Age International. This book by Kothari and Kothari (2019) <sup>[4]</sup> is a comprehensive guide to research design, methodology, and data analysis, widely used by students, academicians, and researchers in management, social sciences, and finance.

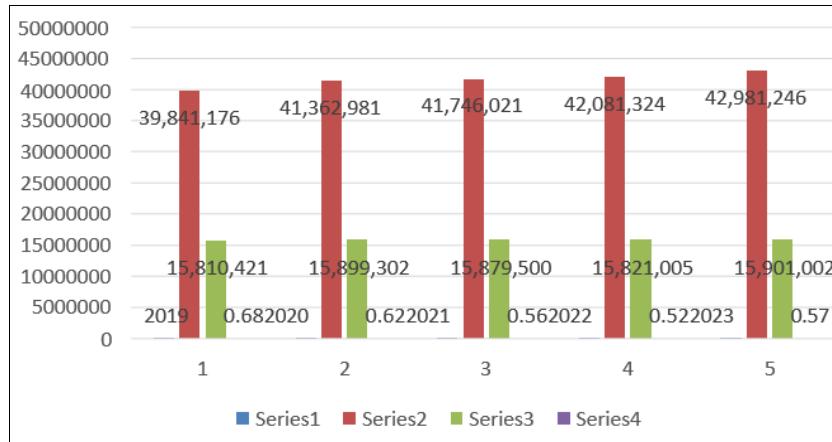
## Research methodology

The research methodology provides a detailed and structured framework for conducting this study, outlining the systematic procedures and analytical approaches used to achieve the research objectives. The primary aim of this study is to evaluate the financial performance of Frontier Industrial Co-operative Tea Factory Ltd., Erumad, and to assess its financial stability and risk of distress using Altman's Z-Score model. This chapter explains the research design, sources of data, population and sampling methods, analytical tools, and step-by-step procedures employed to ensure accuracy, reliability, and validity of findings

## Data analysis and interpretation.

**Table 1:** Fixed Asset Ratio

Year	Fixed Assets	Long-Term Funds	Ratio
2019	39,841,176	15,810,421	0.68
2020	41,362,981	15,899,302	0.62
2021	41,746,021	15,879,500	0.56
2022	42,081,324	15,821,005	0.52
2023	42,981,246	15,901,002	0.57



**Chart 1:** Showing fixed asset ratio

## Interpretation

The fixed asset ratio remained below 1:1, which is ideal. The ratio declined until 2022, indicating efficient utilization of long-term funds. A slight increase in 2023 shows additional investment in fixed assets but still within the optimal level.

## Chi-Square Test

Chi square table showing the relationship between absolute liquid ratio & proprietary ratio.

**Table 2:** Observed Frequency

Liquidity Level	High Financial Stability	Moderate Financial Stability	Low Financial Stability	Total
High	1	1	0	2
Moderate	0	2	1	3
Total	1	3	1	5

**Table 3:** Expected Frequency

Liquidity Level	High Stability	Moderate Stability	Low Stability	Total
High	0.4	1.2	0.4	2
Moderate	0.6	1.8	0.6	3
Total	1	3	1	5

## Null Hypothesis ( $H_0$ )

There is no significant relationship between the Absolute Liquid Ratio and the Proprietary Ratio of the company.

## Alternative Hypothesis ( $H_1$ )

There is a significant relationship between the Absolute Liquid Ratio and the Proprietary Ratio of the company

## Findings

- The company's current ratio ranged between 1.50 and 1.74, which is slightly below the ideal standard of 2:1.
- This indicates moderate liquidity - the company is capable of meeting short-term obligations, but with limited cushion for unexpected liabilities.
- Liquidity improved slightly in 2022-2023, showing better working capital management.
- The company's overall financial health is satisfactory, with consistent growth in assets and effective use of long-term funds.
- Liquidity ratios are above the standard benchmark, but slightly declining solvency and proprietary ratios suggest the need for capital restructuring.
- The organization's inventory and conversion efficiency have improved, contributing to better working capital

management.

- The firm demonstrates financial stability, operational efficiency, and scope for optimizing liquidity for higher returns.

### **Conclusion**

The study titled “A Study on Financial Performance Using Altman’s Z-Score Model at Frontier Industrial Co-operative Tea Factory Ltd., Erumad” was undertaken to assess the financial stability, liquidity, profitability, and overall financial health of the organization. The analysis was based on audited financial data for a five-year period, using both ratio analysis and Altman’s Z-Score Model as key analytical tools. Through this research, an attempt was made to evaluate whether the company falls under the safe, grey, or distress zone, and to provide insights that can help the management make informed strategic decisions.

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