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Investigating the Impact of Profitability on Bankruptcy Risk in Cosmetic Manufacturing Firms

ABSTRACT

This study aims to analyze the effect of profitability ratios, namely Return on Assets (ROA), Return on Equity (ROE), Gross Profit Margin (GPM), and Net Profit Margin (NPM), on corporate bankruptcy prediction using the Altman Z-Score model. The sample consists of five cosmetic manufacturing companies listed on the Indonesia Stock Exchange during 2019–2024 (30 observations). The research employs a quantitative approach using multiple linear regression analysis. The results indicate that profitability ratios simultaneously have a significant effect on Z-Score ($R^2 = 0.607$; Sig = 0.000). Partially, only NPM significantly affects bankruptcy prediction, while ROA, ROE, and GPM are not significant due to multicollinearity issues. The findings highlight that net profit is the most sensitive indicator in detecting financial distress risk. This study contributes empirically to bankruptcy prediction modeling in the Indonesian manufacturing sector.

Keywords: Profitability Ratios, Bankruptcy Prediction, Altman Z-Score.

INTRODUCTION

In a business world filled with dynamics and uncertainty, the survival of a company becomes a crucial issue, especially in the highly competitive manufacturing industry like cosmetics. One of the biggest challenges companies face is the risk of bankruptcy, which refers to their inability to meet short-term and long-term financial obligations. Bankruptcy harms not only shareholders but also has widespread effects on employees, suppliers, consumers, and the overall economic stability (De Blasio, Pavone & Migliaccio, 2022; da Costa, et al., 2023).

The cosmetics industry is one of the manufacturing sectors that shows significant growth in Indonesia. This growth is marked by an increasing number of both local and international cosmetic companies operating in the domestic market. Changing consumer preferences, advancements in production technology, and rising awareness about personal care drive the growth of this industry year by year. However, behind this growth, intensified competition, fluctuating raw material prices, and pressures from global trends can threaten the financial stability of cosmetic companies, especially those that lack a strong financial foundation.

One common approach to assess a company's financial health and predict potential bankruptcy is to analyze financial ratios (De Blasio, Pavone & Migliaccio, 2022). Financial ratios provide a comprehensive overview of the company's performance from various aspects, such as liquidity, solvency, activity, and profitability. In the context of bankruptcy prediction,

profitability ratios play a crucial role as they indicate how well a company can generate profit from its operations (Yu & He, 2018). A consistent decline in profit performance can signal the early stages of a potential financial crisis (Samariya, et al., 2026).

The profitability ratios commonly used in this research include Return on Assets (ROA), Return on Equity (ROE), Gross Profit Margin (GPM), and Net Profit Margin (NPM). ROA measures the efficiency of a company in using its assets to generate profits, while ROE shows the return that shareholders earn on their invested equity. On the other hand, GPM and NPM measure the gross and net profit margins respectively that the company achieves from its sales. Together, these four ratios provide a thorough understanding of the operational efficiency, effectiveness, and profitability of a company.

Several previous studies have shown that these ratios have a significant relationship with predicting corporate bankruptcy. For instance, research on the Z-score model emphasizes the importance of financial ratios in detecting potential bankruptcy (Lohmann, Möllenhoff & Ohliger, 2023). Although the Altman model places more emphasis on liquidity and solvency ratios, many subsequent studies highlight that profitability ratios also contribute significantly to estimating a company's financial health (Radovanovic & Haas, 2023). Companies that consistently report low or even negative ROA and ROE indicate managerial inefficiency in managing assets and capital, which could ultimately lead to bankruptcy if not addressed promptly.

In the context of the Indonesian market, particularly among cosmetic manufacturing firms listed on the Indonesia Stock Exchange (BEI), there is an intriguing opportunity for analysis. While this sector generally shows positive growth, many companies face financial pressures. These challenges can arise from various factors, such as marketing strategy errors, production inefficiencies, or suboptimal cost structures. Therefore, it is essential to conduct a more in-depth study of the profitability conditions of these companies and their connection to bankruptcy risk.

By analyzing the financial data of cosmetic companies listed on the Indonesia Stock Exchange (ISE), this research aims to determine the extent to which profitability ratios can serve as indicators in predicting the likelihood of bankruptcy. The findings of this study are expected to contribute not only academically to the field of corporate finance but also provide valuable information to company managers, investors, and other stakeholders for making more informed strategic decisions. This research also becomes relevant in the face of global challenges, such as supply chain disruptions due to geopolitical crises or pandemics, which can significantly impact a company's financial performance. Amid this uncertainty, strengthening early detection systems for potential bankruptcy becomes crucial. Profitability ratios, as part of a company's fundamental analysis, can be important tools for assessing resilience and long-term business sustainability.

Moreover, the financial information published by companies on the Indonesia Stock Exchange provides sufficient data for empirical analysis. Using a quantitative approach with secondary

data in the form of annual financial statements, this research identifies patterns and trends that can serve as references for assessing bankruptcy risk in a more objective and measurable manner. Empirical data shows the following bankruptcy predictions:

The period from 2019 to 2024 is chosen for this study because it encompasses the time before the pandemic, during the pandemic, and the economic recovery phase. This timeframe offers a comprehensive view of the financial performance dynamics of manufacturing companies in the cosmetics sub-sector as they face significant external pressures. The analysis of this period aims to provide empirical insights into the consistency of the impact of profitability ratios on bankruptcy predictions. Financial Statements and bankruptcy analysis for manufacturing companies from 2019 to 2024 are presented below.

Table 1 Financial Statements and Bankruptcy Analysis for Cosmetic Manufacturing Companies from 2019 to 2024

Company	Years	VAR X				VAR Y
		ROA	ROE	GPM	NPM	Z SCORE
KINO	2019	11,15	19,89	46,82	11,02	2,87
	2020	2,20	4,53	47,92	2,82	1,90
	2021	2,00	4,04	45,16	2,53	2,01
	2022	-20,76	-64,84	29,22	-26,17	0,55
	2023	1,55	4,56	41,68	1,87	1,43
	2024	1,96	5,26	43,15	2,04	1,48
MAPI	2019	6,77	15,13	47,53	-12,45	0,85
	2020	-3,33	-10,35	41,63	-68,37	0,10
	2021	2,52	7,05	41,75	-70,66	0,19
	2022	10,14	26,03	44,66	-11,78	0,42
	2023	6,91	18,94	44,29	-7,63	0,47
	2024	1,59	15,11	40,25	-1,03	0,60
MRAT	2019	0,02	0,04	60,00	0,04	3,19
	2020	-1,16	1,97	60,22	-2,12	2,61
	2021	0,06	0,10	64,22	0,11	2,54
	2022	9,76	17,97	48,00	23,78	2,73
	2023	-2,23	-3,47	-48,57	-4,70	2,72
	2024	-0,01	-1,05	54,00	-1,53	2,78
UNVR	2019	35,80	139,97	51,30	17,22	3,99
	2020	34,89	145,09	52,40	16,67	3,86
	2021	30,20	133,25	50,00	14,56	3,58
	2022	29,29	134,21	46,25	13,02	3,66
	2023	28,81	141,99	49,70	12,43	3,62

	2024	20,99	156,74	47,60	9,59	2,87
UCID	2019	-4,90	9,18	25,21	4,68	2,85
	2020	-4,10	6,93	20,46	3,70	3,02
	2021	-6,30	-9,80	20,37	5,21	3,44
	2022	-3,70	-6,10	18,33	3,04	3,40
	2023	-5,10	-7,80	19,76	4,24	3,67
	2024	-4,00	-6,00	20,42	3,62	3,70

This research is also expected to provide practical contributions in developing financial improvement strategies for companies that show potential bankruptcy indications. By identifying which profitability variables have the most significant impact, companies can conduct internal evaluations and create more targeted financial plans. For example, if the Net Profit Margin (NPM) proves to have a significant influence on bankruptcy predictions, the company should implement efficiencies in its operational cost structure to increase net income. Overall, this study will address several important questions, including: Do the ratios ROA, ROE, GPM, and NPM significantly affect bankruptcy predictions for cosmetic companies? Which ratio has the most dominant influence? How does the relationship between profitability levels and a company's overall financial health manifest?

By addressing these questions, this research aims to strengthen the literature on financial analysis and provide a foundation for developing more specific bankruptcy prediction models tailored to the characteristics of the cosmetic manufacturing industry in Indonesia. Furthermore, to enhance the competitiveness of the national cosmetics industry in the global market, companies need to establish reliable financial management systems, including the ability to detect risks early and take appropriate anticipatory measures. This study analyzes the impact of profitability ratios on the bankruptcy predictions of manufacturing companies in the cosmetics sub-sector listed on the Indonesia Stock Exchange from 2019 to 2024. It is anticipated that this research will contribute academically to the development of literature related to financial distress and offer practical insights for company management, investors, and regulators in strategic decision-making.

RESEARCH METHODS

This research adopts a quantitative methodology, specifically using a causal associative design to explore how various independent variables (X1, X2, X3, and X4) influence a single dependent variable (Y). By employing this approach, the study aims to uncover significant relationships between these variables, providing insight into how changes in the independent variables can affect outcomes in the dependent variable. Utilizing inferential statistical analysis allows for a robust examination of these relationships, helping to confirm or refute the hypotheses grounded in the theoretical framework of the research.

The data used in this study is primarily secondary, derived from financial reports and other relevant documentation. This data is essential for ensuring a rigorous examination and is analyzed numerically to facilitate clear statistical assessments. With a sample size of 30 observations, purposive sampling was employed to select participants who meet specific criteria that align with the research's objectives. This targeted approach enhances the relevance and quality of the data collected. The analysis techniques encompass descriptive statistical methods alongside tests for both simultaneous and partial effects, enabling a comprehensive understanding of how each independent variable impacts the dependent variable.

RESULT AND DISCUSSION

The descriptive statistics provide a summary of the key characteristics of the variables used in this study. For the dependent variable Y, the mean value is 2.3700, with a standard deviation of 1.25439 based on a sample of 30 observations. This suggests that the values of Y show moderate variability around the mean, indicating a potential range of responses among participants. Examining the independent variables, X1 has a mean of 6.0340 and exhibits a high standard deviation of 13.73613, indicating considerable variability in participants' responses. Similarly, X2 shows a mean of 29.9523 with an even greater standard deviation of 59.09161, demonstrating significant differences among observations. For X3, the mean is 39.1243, with a standard deviation of 20.89827, indicating a more contained variability compared to X1 and X2. Conversely, X4 presents a mean of -1.8083, paired with a standard deviation of 20.88594, suggesting that values for this variable are clustered around a negative mean, which may reflect a unique aspect of the data.

The t-test results reveal that among the independent variables, X1, X2, and X3 do not significantly impact the dependent variable Y. Specifically, X1 shows a significance level of 0.373, which is greater than 0.05, indicating no significant effect on Y. Similarly, X2 has a significance level of 0.156, and X3 has a significance level of 0.250, both exceeding the threshold of 0.05, thus not demonstrating a significant influence on Y. In contrast, X4 stands out with a significance level of 0.000, which is less than 0.05, indicating a positive and significant effect on Y.

The results of the F test further support the overall significance of the model, showing an F value of 9.650 with a significance level of 0.000, which is less than 0.05. This result indicates that, collectively, the independent variables X1, X2, X3, and X4 have a significant effect on the dependent variable Y. The R Square value of 0.607 indicates that 60.7% of the variation in Y can be explained by the independent variables in the model, leaving 39.3% of the variation attributable to other factors outside the study. The Adjusted R Square value of 0.544 suggests that, after adjusting for the number of variables included, the model's ability to explain the dependent variable's variation is 54.4%. This adjustment confirms that the model maintains a relatively strong explanatory power, even when accounting for additional variables.

The findings indicate that Net Profit Margin (NPM) is the strongest predictor of bankruptcy. This aligns with signaling theory, which posits that net income reflects the actual condition of the company. The multicollinearity between Return on Assets (ROA) and Return on Equity (ROE) suggests that these two variables have a very close structural relationship, leading to the recommendation that one should be eliminated in further models. Companies like UNVR demonstrate high stability and remain in a safe zone. In contrast, MAPI and KINO faced significant pressure during the pandemic. These findings reinforce previous research indicating that profitability influences financial distress; however, capital structure also plays an important role.

The results of this research indicate that profitability significantly influences financial distress among companies. High profitability typically suggests strong operational performance, allowing organizations to maintain healthy cash flows and manage their obligations effectively. This finding aligns with Türegün (2022), who highlights the importance of financial performance indicators in predicting a company's overall health. When companies exhibit robust profitability, they are less likely to encounter financial distress, as they can better absorb economic shocks and fluctuations.

Companies that maintain high levels of profitability typically exhibit stronger financial health, enabling them to meet their obligations and withstand economic challenges. This relationship is crucial because when firms are profitable, they generate sufficient cash flows, which minimizes the risk of financial distress. Ambrose and Inuwa (2024) highlight that the capital structure directly influences financial performance, further solidifying the case that profitable firms are better positioned to manage debts and potential crises.

Moreover, Fedorova et al. (2022) underscore the importance of corporate governance in shaping a company's capital structure, thereby affecting its overall financial stability. Firms with effective governance practices are likely to make strategic decisions that promote profitability, reducing the likelihood of falling into financial distress. The evidence from this research reinforces the notion that focusing on enhancing profitability not only improves a company’s performance but also acts as a vital buffer against financial instability.

Additionally, the study reinforces insights from Minanari et al. (2024), which suggest that profitability serves as a moderating factor in assessing financial distress determinants in retail companies. The empirical evidence supports the idea that firms with positive profit margins can mitigate risks, enhancing their ability to avoid situations that lead to financial troubles. Conversely, a lack of profitability can exacerbate financial problems, as illustrated by Spulbar et al. (2025), who emphasize the critical link between financial performance metrics, such as those derived from Altman's Z-Score, and the risk profiles of companies. These findings underscore the necessity for organizations to prioritize profitability as a key strategy to safeguard against financial distress and ensure long-term viability.

CONCLUSION

This research establishes a clear connection between profitability and financial distress, demonstrating that firms with strong profit margins are less likely to face financial instability. The findings confirm that profitability serves as a protective factor, allowing organizations to navigate economic challenges more effectively. Based on these insights, companies should prioritize strategies that enhance profitability, such as improving operational efficiency and exploring new markets, to safeguard against potential financial distress.

However, this study does have limitations. The scope is restricted to specific industries, which may affect the generalizability of the results. Additionally, the research primarily relies on historical data, which may not capture the dynamic nature of market conditions. Future research should address these limitations by exploring a broader range of industries and employing longitudinal approaches to examine the evolving relationship between profitability and financial distress over time. Further investigation can also incorporate variables like corporate governance and external economic factors to provide a more comprehensive understanding of their impact on financial stability.

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