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Financial Distress Analysis of PT Bakrie Sumatera Plantations Tbk Using the Altman, Zmijewski, Springate, and Grover Models Period 2022 – 2025

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Abstract : *This research is motivated by indications of financial distress at PT Bakrie Sumatera Plantations Tbk, as seen from the company's financial condition during the 2022–2025 period. This study aims to determine and analyze the level of financial distress based on the Altman Z-Score, Springate S-Score, Zmijewski X-Score, and Grover G-Score models. The study uses a descriptive quantitative approach with secondary data in the form of financial reports and stock market data. The study population is all financial reports of PT Bakrie Sumatera Plantations Tbk, while the sample is financial report data from 2022–2025 required in the calculation of the four models. The research instruments include data on current assets, current liabilities, total assets, total liabilities, retained earnings, sales, EBT, net income, interest expense, interest income, share price, and the number of shares outstanding. The analysis was carried out by calculating the ratios and scores of each model and classifying the results based on their criteria. The results show that all four models consistently categorize the company in financial distress during 2022–2025. In conclusion, PT Bakrie Sumatera Plantations Tbk faced consistent financial pressures throughout the study period.*

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Introduction

The increasingly competitive business environment requires companies to enhance their corporate value and manage production factors effectively and efficiently to achieve sustainable business objectives. Indonesia has abundant natural resources, including palm oil, which plays an important role in the national economy through its contribution to foreign exchange earnings and employment opportunities. The development of the palm oil plantation industry is also part of the government's strategic efforts to strengthen the national economy. In this context, PT Bakrie Sumatera Plantations Tbk is one of the companies engaged in the plantation and processing sectors. Established in 1911 as NV Hollandsch Amerikaansche Plantage Maatschappij, the company has a long history in Indonesia's plantation industry. However, the company has faced various challenges related to

operational management, capital structure, and financial performance, which may affect its financial stability and increase its exposure to financial distress.

A company's financial condition is an important aspect of business sustainability because financial difficulties generally develop through a process that can be identified through financial performance reflected in financial statements. Financial distress refers to a condition in which a company experiences financial difficulties that may increase the risk of financial failure or bankruptcy. Identifying these conditions at an early stage enables management to evaluate financial performance and implement appropriate corrective measures. Therefore, financial statements can be analyzed using financial ratios and financial distress prediction models to assess a company's financial condition. This study applies four prediction models, namely the Altman Z-Score, Springate S-Score, Zmijewski X-Score, and Grover G-Score, to provide a broader assessment of the company's financial distress condition.

The financial performance of PT Bakrie Sumatera Plantations Tbk during the 2022–2025 period indicates several conditions that require further examination. Based on Return on Equity (ROE), the company's values were consistently negative, amounting to -15.62% in 2022, -0.44% in 2023, -2.63% in 2024, and -0.31% in 2025, with an average of -4.75%. Although the negative value decreased in 2025, the company had not yet achieved a positive return on shareholders' equity. This condition indicates that the company had not generated positive returns from the equity invested by shareholders during the observation period.

Further concerns can be observed in the company's capital structure through its Debt to Equity Ratio (DER), which recorded -1.76 in 2022, -1.77 in 2023, -1.61 in 2024, and -1.66 in 2025, with an average of -1.70. The negative DER values should not be interpreted as evidence of low debt or a favorable capital structure. Instead, they may reflect negative shareholders' equity, which affects the interpretation of the relationship between total liabilities and equity. Similarly, the company's Price to Book Value (PBV) remained negative throughout the period, with values of -53.727 in 2022, -47.621 in 2023, -45.963 in 2024, and -206.829 in 2025, averaging -88.535. These negative values may also be associated with negative book value of equity, meaning that PBV cannot be interpreted in the same way as a conventional positive valuation ratio. Therefore, the negative DER and PBV values should be considered indicators of an unusual equity position that requires further financial assessment rather than direct measures of the company's financial distress classification. These conditions, together with the consistently negative ROE, provide a rationale for conducting a more comprehensive assessment using established financial distress prediction models.

Previous research has examined the financial distress condition of PT Bakrie Sumatera Plantations Tbk using different prediction approaches. Consita M (2019) found that, based on the modified Altman Z-Score model, PT Bakrie Sumatera Plantations Tbk experienced financial difficulties with potential bankruptcy during the 2014–2017 period, as indicated by a Z-Score below 1.1, while the Springate model produced an S-Score below 0.862. Novidianti et al. (2019), who examined four plantation companies listed on the Indonesia Stock Exchange, identified PT Bakrie Sumatera Plantations Tbk as experiencing financial distress based on the Zmijewski method, with an average X-Score of 0.978 during the observation period. Meanwhile, Wiranata et al. (2016) found that several Bakrie Group companies experienced financial distress based on the Zmijewski method, while PT Bakrie Sumatera Plantations Tbk was categorized as experiencing financial distress under the Grover method. Although these studies provide relevant evidence, most of them applied only one or two prediction models and examined periods before 2022. Consequently, an updated assessment applying several prediction models simultaneously is necessary to examine the company's more recent financial condition.

Based on this research gap, this study aims to analyze and determine the financial distress condition of PT Bakrie Sumatera Plantations Tbk during the 2022–2025 period using four prediction models: Altman Z-Score, Springate S-Score, Zmijewski X-Score, and Grover G-Score. The novelty of this study lies in the simultaneous application of these four models to the same company over a relatively recent observation period. By comparing the classification results of the four models, this research is expected to provide a more comprehensive assessment of the company's financial distress condition and contribute to the financial management literature, particularly regarding the application of multiple financial distress prediction models in evaluating corporate financial sustainability.

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Research Methods

This study uses descriptive quantitative research by analyzing numerical data from the financial statements of PT Bakrie Sumatera Plantations Tbk. The data used are the company's financial statements for the period 2022-2025, which were analyzed to determine the company's financial distress. The research was conducted indirectly using secondary data obtained from the official website of PT Bakrie Sumatera Plantations Tbk. The data includes the financial position report, income statement, and supporting information needed to calculate financial distress using the Altman Z-Score, Springate, Zmijewski, and Grover models.

The research instruments consisted of financial data contained in the company's financial position statement and income statement, as well as stock market data required in calculating the four financial distress models. The data used included current assets, current liabilities, total assets, total liabilities, retained earnings, sales, EBT, net income, interest expense, interest income, share price, and the number of shares outstanding. Data analysis techniques were performed using the Altman Z-Score, Springate, Zmijewski, and Grover models by calculating the ratios that are the main variables in each model, obtaining the value of each model, and then classifying the calculation results based on the criteria of each model. These calculations refer to Altman (1968), Gorgon L.V. Springate (1978), Zmijewski (1983), and Jeffrey S. Grover, as used in the research of Primasari, NS (2017) and Idi, CM, & Borolla, JD (2021). The ratios used include Working Capital to Total Assets, Retained Earnings to Total Assets, Earnings Before Interest and Taxes to Total Assets, Market Value of Equity to Total Liabilities, Sales to Total Assets, Earnings Before Taxes to Current Liabilities, Return on Assets, Debt Ratio, and Current Ratio. Usman, Nadia, et al. (2024), Siswanto, PR, & Romadon, SA (2021), and Poniwatie, Asmie, et al. (2021) are used in explaining the ratios that are components in the research model.

According to Candra et al. (2021), a population is a complete collection of objects whose description is the primary objective of the research. The population of this research is the entire financial statements of PT Bakrie Sumatera Plantations Tbk. The sample is a portion or representative of the population studied, as stated by Abubakar (2021). The research sample consists of financial statement data from PT Bakrie Sumatera Plantations Tbk for 2022-2025, which is needed to calculate the components in the Altman, Springate, Zmijewski, and Grover models. The data includes the financial position report in the form of current assets, current liabilities, total assets, total liabilities, and retained earnings; the income statement in the form of sales, EBT, net income, interest expense, and interest income; and stock market data in the form of share prices and the number of shares outstanding.

The research was conducted through several stages, including observation, data collection, data compilation, revision, data separation, data processing, data analysis, and conclusion drawing. Secondary data, in the form of the annual financial statements of PT Bakrie Sumatera Plantations Tbk for the 2022-2025 period, were obtained from the company's official website. The collected data was then separated based on the calculation requirements of each model, followed by calculating the financial ratios that are components of the Altman Z-Score, Springate, Zmijewski, and Grover models. The results of each model were then classified based on their respective criteria to determine the company's financial distress during the study period. The analysis results were then used as the basis for drawing conclusions.

Results and Discussion

Altman Z-Score Model

1. X1 Working Capital to Total Assets

Table 1. Working Capital to Total Assets

Year	2022	2023	2024	2025
Working Capital to Total Assets	- 1.67	- 1.52	- 2.27	- 2.15
Average				- 1.90

Source: Processed primary data, 2022-2025

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The calculation results for Working Capital to Total Assets for the 2022–2025 period above show the highest value in 2023, at -1.52, and the lowest value in 2024, at -2.27. Meanwhile, the average value for the 2022–2025 period was -1.90. All negative ratio values in the Altman model indicate the possibility of financial distress.

2. X2 Retained Earnings to Total Assets

Table 2. Retained Earnings to Total Assets

Year	2022	2023	2024	2025
Retained Earnings to Total Assets	- 3,102	- 3,075	- 3,896	- 3,586
Average				- 3,415

Source: Processed primary data, 2022-2025

The calculation results for Retained Earnings to Total Assets for the 2022-2025 period above show the highest value in 2023 at -3.075 and the lowest value in 2024 at -3.896, with an average value of -3.415 for the 2022-2025 period. A negative value indicates the possibility of financial distress in the company.

3. X3 Earnings Before Interest and Taxes to Total Assets

Table 3. Earnings Before Interest and Taxes to Total Assets

Year	2022	2023	2024	2025
EBIT to Total Asset	0.209	0.021	0.087	0.030
Average				0.115

Source: Processed primary data, 2022-2025

The calculation results for Earnings Before Interest and Taxes to Total Assets for the 2022-2025 period show the highest value in 2022 at 0.209, while the lowest value was in 2023 at 0.021. The average value during the study period was 0.115. These results indicate no possibility of financial difficulties, as the results are positive.

4. X4 Market Value of Equity to Total Liabilities

Table 4. Market Value of Equity to Total Liabilities

Year	2022	2023	2024	2025
Market Value of Equity to Total Liabilities	0.030	0.027	0.029	0.124
Average				0.053

Source: Processed primary data, 2022-2025

The calculation results for the Market Value of Equity to Total Liabilities ratio for the 2022-2025 period above show the highest value in 2025 at 0.124 and the lowest in 2023 at 0.027, with an average of 0.053. The significant increase at the end of the period indicates a significant change, indicating the company's health.

5. X5 Sales to Total Asset

Table 5. Sales to Total Assets

Year	2022	2023	2024	2025
Sales to Total Asset	0.92	0.53	0.72	0.73
Average				0.73

Source: Processed primary data, 2022-2025

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The Sales to Total Assets calculation results for the 2022-2025 period above showed the highest value in 2022 at 0.92 and the lowest in 2023 at 0.53, with an average result during the study period of 0.73. The highest achievement in 2022 indicates a period with a better level of asset utilization efficiency compared to other years.

6. Altman Model Calculation Results (Z-Score)

Table 6. Altman Z-Score

	Year			
	2022	2023	2024	2025
Altman Z-Score	-4.72	-5.51	-7.15	-6.69

Source: Processed primary data, 2022-2025

The calculation results using the Grover model formula for the 2022-2025 period at PT Bakrie Sumatera Plantations Tbk are in the Financial Distress category because they obtained a Z-score below 1.81. The highest score was -4.72 in 2022, while the lowest score was -7.15 in 2024.

Springate S-Score Model

1. X1 Working Capital to Total Assets

Table 7. Working Capital to Total Assets

Year	**2022**	**2023**	**2024**	**2025**
Working Capital to Total Assets	- 1.67	- 1.52	- 2.27	- 2.15
Average				- 1.90

Source: Processed primary data, 2022-2025

The Working Capital to Total Assets calculation for the 2022–2025 period yielded the highest value in 2023 at -1.52 and the lowest in 2024 at -2.27. Meanwhile, the average value for the 2022–2025 period was -1.90. All of these negative results indicate the possibility of financial distress in the company.

2. X2 Earnings Before Interest and Taxes to Total Assets

Table 8. Earnings Before Interest and Taxes to Total Assets

Year	**2022**	**2023**	**2024**	**2025**
EBIT to Total Asset	0.209	0.021	0.087	0.030
Average				0.115

Source: Processed primary data, 2022-2025

The calculation results for the Earnings Before Interest and Taxes to Total Assets ratio for the 2022-2025 period above show the highest value recorded in 2022 at 0.209, while the lowest value occurred in 2023 at 0.021. The average ratio value during the study period was 0.115. The results above indicate no possibility of financial distress, as the value obtained is positive.

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3. X3 Earnings Before Taxes to Current Liabilities

Table 9. Earnings Before Taxes to Current Liabilities

Year	2022	2023	2024	2025
EBT to Current Liabilities	0.114	0.012	0.034	0.013
Average				0.043

Source: Processed primary data, 2022-2025

The calculation results of Earnings Before Tax to Current Liabilities for the 2022-2025 period, obtained the highest value of 0.114 in 2022 and the lowest value of 0.012 in 2023. The average value of the ratio during the study period was 0.043.

4. X4 Sales to Total Asset

Table 10. Sales to Total Assets

Year	2022	2023	2024	2025
Sales to Total Asset	0.92	0.53	0.72	0.73
Average				0.73

Source: Processed primary data, 2022-2025

The Sales to Total Assets calculation for the 2022-2025 period yielded the highest value in 2022 at 0.92 and the lowest in 2023 at 0.53, with an average value of 0.73 during the study period. These results indicate that the company's effectiveness in utilizing assets to generate revenue varies from year to year. The highest achievement in 2022 indicates a period with a higher level of asset utilization efficiency compared to other years.

5. Springate Model Calculation Results (S-Score)

Table 11. Springate S-Score

	Year			
	2022	2023	2024	2025
Springate S-Score	**- 0.64**	**- 1.28**	**- 1.76**	**- 1.82**

Source: Processed primary data, 2022-2025

The calculation results using the Grover model formula for the 2022-2025 period at PT Bakrie Sumatera Plantations Tbk are in the Financial Distress category because they obtained an S value below 0.862. The highest value was obtained in 2022 at -0.64, while the lowest value was in 2025 at -1.82.

Zmijewski X-Score Model

1. X1 Return on Asset

Table 12. Return on Assets

Year	2022	2023	2024	2025
Return on Asset	20.49%	0.57%	4.32%	0.46%
Average				6.46%

Source: Processed primary data, 2022-2025

The calculation results for Return on Assets for the 2022-2025 period show a peak value of 20.49% in 2022 and a low of 0.46% in 2025. During the study period, the average ROA was 6.46%. These results indicate a significant change in the company's profitability after increasing in 2022.

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2. X2 Debt Ratio

Table 13. Debt Ratio

Year	2022	2023	2024	2025
Debt Ratio	2.31	2.30	2.64	2.51
Average				2.44

Source: Processed primary data, 2022-2025

The results of the Debt Ratio calculation for the 2022-2025 period show the highest value of 2.64 in 2024 and the lowest value of 2.30 in 2023 with an average value of 2.44.

3. X3 Current Ratio

Table 14. Current Ratio

Year	2022	2023	2024	2025
Current Ratio	0.09	0.10	0.10	0.11
Average				0.10

Source: Processed primary data, 2022-2025

Current Ratio calculation results for the 2022-2025 periodThe highest value was 0.11 in 2025, while the lowest value was recorded in 2022 at 0.09. The average ratio value during the study period was 0.10.

4. Zmijewski Model Calculation Results (X-Score)

Table 15. Zmijewski X-Score

	Year			
	2022	2023	2024	2025
Zmijewski X-Score	**7.96**	**8.79**	**10.56**	**9.99**

Source: Processed primary data, 2022-2025

The results of calculations using the Zmijewski model formula for the 2022-2025 period indicate that PT Bakrie Sumatera Plantations Tbk is experiencing financial distress, as the analysis results during the study period obtained a value greater than zero. The highest value using this method was 10.56 in 2024, while the lowest value was 7.96 in 2022.

Grover G-Score Model

1. X1 Working Capital to Total Assets

Table 16. Working Capital to Total Assets

Year	2022	2023	2024	2025
Working Capital to Total Assets	- 1.67	- 1.52	- 2.27	- 2.15
Average				- 1.90

Source: Processed primary data, 2022-2025

The calculation of the Working Capital to Total Assets ratio for the 2022–2025 period yielded the highest value in 2023 at -1.52 and the lowest value in 2024 at -2.27. Meanwhile, the average value for the 2022–2025 period was -1.90. All negative results indicate the possibility of financial distress in the company.

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2. X2 Earnings Before Interest and Taxes to Total Assets

Table 17. Earnings Before Interest and Taxes to Total Assets

Year	2022	2023	2024	2025
EBIT to Total Asset	0.209	0.021	0.087	0.030
Average				0.115

Source: Processed primary data, 2022-2025

The calculation results for the Earnings Before Interest and Taxes to Total Assets ratio for the 2022-2025 period show the highest value in 2022 at 0.209, and the lowest in 2023 at 0.021. The average ratio during the study period was 0.115. The results above indicate no likelihood of financial distress, as both values are positive.

3. *Return on Asset*

Table 18. Return on Assets

Year	2022	2023	2024	2025
Return on Asset	20.49%	0.57%	4.32%	0.46%
Average				6.46%

Source: Processed primary data, 2022-2025

The Return on Assets calculation results for the 2022-2025 period showed a peak value of 20.49% in 2022 and a low of 0.46% in 2025. The average ROA was recorded at 6.46%. These results indicate a significant change in the company's profitability after increasing in 2022, indicating a decrease in the use of assets to generate profits.

4. Grover Model Calculation Results (G-Score)

Table 19. Grover G-Score

	Year			
	2022	2023	2024	2025
Grover G-Score	**-2.00**	**-2.37**	**-3.39**	**-3.38**

Source: Processed primary data, 2022-2025

The calculation results using the Grover model formula for the 2022-2025 period indicate that PT Bakrie Sumatera Plantations Tbk is experiencing financial distress, with a score of less than -0.02. The highest score during the study period was -2.00 in 2022, while the lowest was -3.29 in 2024.

Discussion

1. Altman Model Prediction (Z-Score)

The results of the calculations using the Altman model show that PT Bakrie Sumatera Plantations Tbk obtained Z-Score values of -4.72 in 2022, -5.51 in 2023, -7.15 in 2024 and -6.69 in 2025. Based on Altman's criteria, a company is categorized as being in a state of Financial Distress if it obtains a Z-score <1.81.

The highest Z-score was -4.72 in 2022, while the lowest was -7.15 in 2023. The Z-score increased in 2025, but remained below the minimum threshold set by the Altman model, thus not indicating a shift towards a safe condition.

These results were influenced by the low values of variables in the Altman model, such as Working Capital to Total Assets, Retained Earnings to Total Assets, and Market Value of Equity to Total Liabilities, which failed to contribute positively to the final Z-score. This indicates that the company's

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ability to maintain liquidity, generate internal funding, and maintain a healthy capital structure is inadequate.

2. Springate Model Prediction (S-Score)

The calculation results using the Springate S-Score model at PT Bakrie Sumatera Plantations Tbk for the period 2022–2025, obtained values of -0.64 in 2022, -1.28 in 2023, -1.76 in 2024, and -1.82 in 2025, respectively. Based on the Springate criteria, a company is declared to be experiencing Financial Distress if it obtains an S value <0.862. The results above show that during the study period, all values are below the minimum limit so that PT Bakrie Sumatera Plantations Tbk is predicted to experience Financial Distress consistently.

The best condition occurred in 2022, with a value of -0.64, as it was closest to the healthy limit. After that, it declined in 2023, reaching -1.82 in 2025, the lowest value during the study period. This decline indicates that the company's ability to generate operating profit and meet short-term obligations remains unstable.

The results of the Springate model differ from those of Altman because the Springate approach places greater emphasis on a company's ability to generate profits and maintain operational performance through the utilization of its assets. A negative Working Capital to Total Assets ratio and the low ability of pre-tax profit to cover current liabilities are factors that influence the final results.

3. Zmijewski Model Prediction (X-Score)

Based on the calculation results using the Zmijewski model at PT Bakrie Sumatera Plantations Tbk for the period 2022–2025, the values obtained were 7.96 in 2022, 8.79 in 2023, 10.56 in 2024, and 9.99 in 2025. Based on the Zmijewski model criteria, the company is declared to be experiencing Financial Distress if it obtains a value of X> 0. All results during the research period show a value of X far above zero so that PT Bakrie Sumatera Plantations Tbk is categorized as experiencing Financial Distress during the period 2022–2025.

The X-Score increased gradually from 2022 to reach its highest point of 10.56 in 2024. It then decreased slightly to 9.99 in 2025, but remained in the Financial Distress category.

These results indicate that the company's financial pressure is primarily influenced by its high debt ratio and low current ratio. The average debt ratio reached 2.44, indicating relatively high debt usage compared to the company's assets. The current ratio, with an average of 0.10, indicates limited short-term liquidity.

4. Grover Model Prediction (G-Score)

The calculation results using the Grover model at PT Bakrie Sumatera Plantations Tbk for the period 2022-2025, obtained a G-Score value of -2.00 in 2022, -2.37 in 2023, -3.39 in 2024, and -3.38 in 2025. Based on Grover's criteria, a company is categorized as experiencing Financial Distress if it obtains a value less than or equal to -0.02. All results indicate that the company is in the Financial Distress category during the study period.

The best score was -2.00 in 2022, as it was closest to the healthy category. However, from 2023 to 2025, the score declined continuously, reaching its lowest point in 2024 at -3.39. This negative score indicates the company's ability to generate operating profit and manage working capital is inadequate.

The differences in the results of the four Financial Distress models used in the study indicate that each model has a different approach to assessing a company's financial condition. The Altman model is more influenced by the company's market value, while the Springate, Zmijewski, and Grover models focus more on operational capabilities, profitability, liquidity, and the company's liability status. To provide a clearer picture of the differences in these classification results, the calculation results for each model are summarized in the following table:

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Table 20. Results of the Altman, Springate, Zmijewski, Grover Methods

Model	Year			
	2022	2023	2024	2025
Altman	**-4.72**	**-5.51**	**-7.15**	**-6.69**
Springate	**-0.64**	**-1.28**	**-1.76**	**-1.82**
Zmijewski	**7.96**	**8.79**	**10.56**	**9.99**
Grover	**-2.00**	**-2.37**	**-3.39**	**-3.38**

Source: Processed primary data, 2022-2025

Based on Table 20, the analysis results using the Altman, Springate, Zmijewski, and Grover models indicate that PT Bakrie Sumatera Plantations Tbk obtained a uniform classification during the 2022-2025 period. All models consistently indicated that the company was in financial distress.

The results from the four models show that PT Bakrie Sumatera Plantations Tbk's financial condition consistently indicated financial distress during the study period. Although each model used different ratios and measurement bases, they all provided the same classification, making the predictions stronger and more supportive.

Conclusion

Based on the research results, PT Bakrie Sumatera Plantations Tbk consistently exhibited financial distress during the 2022–2025 period based on the four prediction models used. The Altman Z-Score model produced values of -4.72, -5.51, -7.15, and -6.69, respectively, while the Springate model produced values of -0.64, -1.28, -1.76, and -1.82. The Zmijewski model produced values of 7.96, 8.79, 10.56, and 9.99, while the Grover model produced values of -2.00, -2.37, -3.39, and -3.38. All of these results fall into the financial distress category according to the criteria of each model. The consistency of the results of the four models indicates ongoing financial pressure throughout the study period, particularly as reflected in the company's working capital, profitability, liquidity, and liability structure.

This study has limitations because it only used one company as the object of study and the observation period was four years, so the results cannot describe the broader conditions of companies in the plantation sector. Furthermore, the study used secondary data from financial reports and stock market data, so the analysis is limited to the information available in those sources. Future research could expand the object and observation period and conduct comparisons with other plantation companies to obtain a broader picture of financial distress prediction. Practically, the results of this study can serve as evaluation material for the management of PT Bakrie Sumatera Plantations Tbk to pay attention to the company's liquidity, profitability, working capital, and liabilities and to take early financial improvement measures to reduce the risk of financial difficulties and potential bankruptcy.

References

Abubakar, H. R. (2021). *Pengantar metodologi penelitian* (Cetakan pertama). SUKA-Press UIN Sunan Kalijaga.

Candra, V., Simarmata, N. I. P., Mahyuddin, Purba, B., Purba, S., Chaerul, M., Hasibuan, A., Siregar, T., Sisca, Karwanto, Romindo, & Jamaludin. (2021). *Pengantar metodologi penelitian*. Yayasan Kita Menulis.

Consita, M. (2019). *Analisis tingkat akurasi model Altman Z-Score modifikasi dan model Springate dalam mengukur potensi financial distress (Studi kasus pada perusahaan PT Bakrie Sumatera Plantations Tbk. periode tahun 2014–2017)* [Doctoral dissertation, Universitas Mercu Buana Jakarta].

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Idi, C. M., & Borolla, J. D. (2021). Analisis financial distress menggunakan metode Altman Z-Score pada PT Golden Plantation Tbk. periode 2014–2018. *Public Policy*, *2*(1), 102–121.

Novidianti, V., & Hamzah, Z. Z. (2019). Analisis financial distress menggunakan model Zmijewski pada perusahaan perkebunan yang terdaftar di Bursa Efek Indonesia periode 2013–2017. *JURISMATA, 1*(2), 76–93.

Poniwatie, A., Istanti, E., & Prasta, V. I. (2021). The effect of current ratio, debt ratio and return on assets on financial distress on manufacturing companies listed on IDX for the 2017–2019 period. *International Journal of Economics, Business and Accounting Research (IJEBAR), 5*(4).

Primasari, N. S. (2017). Analisis Altman Z-Score, Grover Score, Springate, dan Zmijewski sebagai signaling financial distress (Studi empiris industri barang-barang konsumsi di Indonesia). *Accounting and Management Journal*, *1*(1).

Siswanto, P. R., & Romadon, S. A. (2021). Analisis prediksi kebangkrutan menggunakan model Altman, Springate, dan Zmijewski pada perusahaan farmasi. *Jurnal Manajemen dan Bisnis, 1*(2), 93–102.

Usman, N., Yunita, B. D., Islami, N. F., Ningsih, K. T. K., Asaff, R., & Aris, A. L. (2024). Analisis financial distress menggunakan metode Altman Z-Score pada PT Sepatu Bata Tbk periode 2021–2023. *BJRM (Bongaya Journal of Research in Management), 7*(2), 21–28.

Wiranata, M. T. A., Yudiaatmaja, F., & Cipta, W. (2016). Analisis financial distress dengan pendekatan Altman Z-Score, Zmijewski dan Grover pada perusahaan Bakrie Group yang terdaftar di Bursa Efek Indonesia (BEI) periode 2011–2014. *Jurnal Manajemen Indonesia*, *4*(1).

https://doi.org/10.61536/escalate.v4i4.884
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