# Bankruptcy Prediction Analysis Based on the Altman Z-Score, Springate, and Zmijewski Methods (Case Study on PT. Net Visi Media Tbk)

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## ARTICLE INFO

## ABSTRACT

Financial difficulties are a situation that companies are very avoidable. Every establishment of a company is expected to generate profits so that it is able to survive and develop in the long term and can prosper the company owner. The purpose of this study is to find out the prediction of bankruptcy in PT. Net Visi Media Tbk using the Altman Z-Score model. Springate model, and Zmijewski model. This study uses a quantitative approach. The sample in this study is PT. Net Visi Media Tbk. The sampling technique is purposive sampling and the data used is financial statement data for the 2021-2023 period. The data analysis technique used in this study is a descriptive analysis technique. The results showed that in the Altman Z-Score model and the Springate model of PT. Net Visi Media Tbk is experiencing financial difficulties or bankruptcy. Meanwhile, in the Zmijewski model of PT. Net Visi Media Tbk did not experience financial difficulties or did not experience bankruptcy.

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## 1. INTRODUCTION

Financial difficulties are situations where a company's operating cash flow is not enough to satisfy its current obligations (such as credit trading or interest expenses) and the company is forced to take corrective actions (Arifin, 2018). Financial difficulties are a situation that companies are very avoidable. Every establishment of a company is expected to generate profits so that it is able to survive and develop in the long term and can prosper the company owner. In practice, companies that have been operating for a certain period of time are often forced to go out of business because they experience financial difficulties or financial distress that leads to the bankruptcy of the company.

The company's financial statements provide data and processed information to users regarding the company's financial position. Understanding a company's financial statements allows different stakeholders to understand the company's financial position (Murhadi, 2019). The analysis of the company's financial statements is a factor in a process that is full of considerations in order to help evaluate the company's financial position and operating results in the present and past, with the aim of

determining the most likely estimates and predictions regarding the company's condition and performance in the foreseeable future (Prihadi, 2019).

Analysis of the company's financial statements is carried out to find out the state and development of the company's finances as well as the results that have been achieved from the past to the current period. In addition, by analyzing past financial statements, it is also possible to find out the company's weaknesses and results that are considered good and to know the potential for company bankruptcy (Utami and Hardana, 2022).

The signalling theory was first proposed by Spence (1973) which explains that the sender (owner of information) provides a signal or signal in the form of information that reflects the condition of a company that is beneficial to the first party (investor). Signalling theory is an attitude of company management in providing guidance to investors regarding management's views on the company's future prospects, which will affect investors' response to the company. The signal is in the form of information that explains the management's efforts in realizing the owner's wishes. This information is considered an important indicator for investors and business people in making investment decisions (Brigham and Houston, 2016).

Company bankruptcy is caused by two factors, namely external factors and internal factors. Bankruptcy is caused by external factors such as economic conditions, natural disasters, and certain geographical circumstances. Furthermore, it is influenced by internal factors of the company itself, including management errors in managing debts, lack of cooperation in company management, and so on (Nasmi and Afriyenti, 2021).

Financial distress is a situation where a company's operating cash flow is not enough to satisfy its current obligations (such as credit trading or interest expenses) and the company is forced to take corrective actions (Arifin, 2018). Financial distress is a stage of decline in financial conditions that occurs before bankruptcy or liquidity. A condition in which the company experiences financial pressure that will gradually lead to bankruptcy (Platt and Platt, 2006).

Bankruptcy analysis has evolved along with the development of financial science. Some of the bankruptcy analysis models are the Altman Z-Score model, the Springate model, and the Zmijewski model. The use of several of these analysis models is expected to take various existing advantages and overcome the weaknesses that exist in a model so as to produce a higher level of prediction accuracy or can predict the bankruptcy of the company more accurately.

This research took the object of research of PT Net Visi Media Tbk because the company decided to downsize employees around 30% of the company's total employees. Employee data as of June 30, 2023, is 910 employees, so the number of employees affected by layoffs is 273 people. The results of the adjustment and evaluation are followed up in the form of human resource management, where the company reconsiders the performance and needs of each section or division while still paying attention to the company's priorities to still be able to have a positive impact on the company. This is because throughout the first half of 2023, NETV's revenue declined to IDR 124.09 billion from IDR 202.67 billion in the same period in 2022. This was due to advertising revenue which declined from IDR 164.14 billion in the first half of 2022, to IDR 106.27 billion. Digital revenue only reached IDR 13.80 billion in the first semester of 2023 from IDR 37.20 billion in 2022 (Mardiansyah and Laoli, 2023).

Based on the preliminary description above, the researcher is interested in analyzing and determining the bankruptcy rate using the Altman Z-Score model, the Springate model, and the Zmijewski Model which are used as a tool to analyze the potential bankruptcy of PT. Net Visi Media Tbk with the research title Analysis of Bankruptcy Prediction Based on the Altman Z-Score, Springate, and Zmijewski Methods (Case Study on PT. Net Visi Media Tbk).

## 2. METHODS

This research method uses a descriptive method with a quantitative approach. Descriptive research is research conducted to determine the existence of independent variable values, either one or more variables (independent) without making comparisons or connecting with other variables

(Sugiyono, 2019). The object of the research is PT. Net Visi Media Tbk. The sample of this research is PT. Net Visi Media Tbk is in accordance with the criteria. Sampling is *purposive sampling*. The *purposive sampling* method is a sample determination technique that uses certain criteria (Sugiyono, 2019). The data collected in this study are secondary data. Secondary data is data collected from other sources that have been available before the research was conducted (Silalahi, 2018). The data sources in this study are from various sources of books, journals and previous research that support this research. The source of data that will be processed in the research analysis is www.idx.co.id the official website of the Indonesia Stock Exchange. The author also conducted a literature study, namely data collection by studying and understanding books that have a relationship with the analysis of bankruptcy prediction methods of Altman, Z-Score, Springate and Zmijewski methods obtained from various sources. This research data was obtained from historical company data, literature studies, research reports, and financial statements published by related companies and the internet that have been audited for three years 2021-2023.

The data analysis technique used in this study is a descriptive analysis technique. The analysis tools used in this study are the Altman Z-Score, Springate, and Zmijewski models to analyze the potential for bankruptcy in PT. The following are the formulas of various models to calculate bankruptcy predictions.

**Model Altman Z-Score**

$$Z = 1{,}2X_1 + 1{,}4X_2 + 3{,}3X_3 + 0.6X_4 + 0{,}999X_5$$

Information:

$X_1$ = *Working capital/total assets*
$X_2$ = *Retained earning/total assets*
$X_3$ = *EBIT/total assets*
$X_4$ = *Market value of equity/total liabilities*
$X_5$ = *Sales/total assets*

The classification of healthy and bankrupt companies based on the Z-Score value obtained, namely:

1. If Z > 2.67, then it is a healthy company
2. If Z < 1.81, then it includes a bankrupt company
3. If Z is between 1.81 and 2.67, then it is a *grey area* (it cannot be determined whether the company is healthy or bankrupt)

**Model Springate**

$$S = 1{,}03A + 3{,}07B + 0{,}66C + 0{,}4D$$

Information:

A = *Working capital/total assets*
B = *Earning before interest and taxes/total assets*
C = *Earning before taxes/current liabilities*
D = *Sales/total asset*

Springate revealed that the *cut-off* value that applies to the springate model is 0.862. A springate value smaller than 0.862 indicates that the company is predicted to go bankrupt. Conversely, a springate value greater than 0.862 indicates that the company is in good health.

**Model Zmijewski**

$$X = -4{,}3 - 4{,}5\,X_1 + 5{,}7X_2 - 0{,}004\,X_3$$

Information:

$X_1$ = *Return on asset*
$X_2$ = *Debt to equity ratio*
$X_3$ = *Current ratio*

The *cut-off* value that occurs in the zmijewski model is 0. This means that companies whose value X is greater than or equal to 0 are predicted to go bankrupt in the future. On the other hand, companies that have a value of less than 0 are predicted not to experience bankruptcy.

## 3.　FINDINGS AND DISCUSSION

PT Net Visi Media Tbk is a company engaged in the media industry. His business lines include the fields of Television Broadcasting, Content Production, Artist Management, and Digital Media. Through its subsidiary NET Mediatama Television, NET presents screen entertainment through positive and inspiring content. Coming with full high definition (FULL-HD) show quality, NET consistently presents the latest entertainment for all levels of society. Through Net Media Digital's subsidiary, NET presents selected content that can be accessed from open platforms such as YouTube and Facebook. In the YouTube platform, NET is ranked in the Top 3 largest TV channel for the number of subscribers and viewers and has 18 million unique monthly viewers, which is a clear indication of the great interest in our content. Through its Creative Inti Corporate Subsidiary (Creative Inc) engaged in the content creation industry, NET has produced many excellent programs that are quality and inspiring. More than 25,000 episodes with a duration of more than 22,000 hours of programming have been produced by Creative Inc. The Company also has an Artist Management business business that focuses on 4 important areas that synergize with each other in the entertainment industry, namely; Artist Management, KOL (Key Opinion Leader) Management, Content Creator Management, and Publishing.

The results of the calculation of ratios and analysis of the company's financial statement data PT. Net Visi Media Tbk for the 2021-2023 period can be seen as follows:

Table of Bankruptcy Prediction Calculation Results of PT. Net Visi Media Tbk

| Year | Model Altman Z-Score | | Model Springate | | Model Zmijewski | |
|---|---|---|---|---|---|---|
| | Result | Information | Result | Information | Result | Information |
| 2021 | 0,276 | Bangkrut | 0,076 | Bangkrut | -362,786 | Healthy |
| 2022 | 1,062 | Bangkrut | 0,677 | Bangkrut | -111,836 | Healthy |
| 2023 | -0,976 | Bangkrut | -1,151 | Bangkrut | -1,944 | Healthy |

Source : Data processed, 2025

The results of the Altman Z-Score model prediction show that from 2021 to 2023 the company will experience bankruptcy, which means that it will experience enormous financial difficulties and high risk so that the company can experience bankruptcy. This is because the company's total equity is negative. Retained earnings did not exist because they suffered losses during 2021 to 2023. The company's revenue decreased in 2021 by IDR 490 billion, in 2022 it decreased to IDR 439 billion and in 2023 there was a decline again of IDR 235 billion. The decline in revenue was due to a decline in sponsorship income from the technology and e-commerce sectors based on startups that were directly affected by the global economy. The performance of TVC's regular advertising revenue decreased slightly from the previous IDR 252.99 billion to IDR 246.06 billion and digital media service revenue could increase from IDR 82.71 billion to IDR 112.22 billion, while in 2023 revenue decreased by IDR 30.59 billion.

The results of the Springate model prediction show that from 2021 to 2023 the company will experience bankruptcy, which means that it will experience enormous financial difficulties and high risk so that the company can experience bankruptcy. However, in 2022 there was an improvement in the score from the previous 0.076 to 0.677. This is due to the previous working capital value of IDR 569.50 billion to IDR 544.42 billion. Then in earnings before interest and taxes, which previously only produced IDR 205.85 billion, there was a slight increase to IDR 216.06 billion. Meanwhile, in 2023 the score decreased again to -1.15. This is because the company's working capital has decreased to IDR 118.4 billion due to the company's increasing losses.

The results of the Zmijewski model prediction show that from 2021-2023 the company will not experience financial difficulties or that means it is healthy. This is shown through the increase in the company's current ratio from 0.663 to 1.981 which means that the company's current assets are 2 times the company's total current debt. Meanwhile, in 2023, the current ratio decreased by 0.368, which means that the condition is not good because the company is unable to pay its current debt.

## 4.  CONCLUSION

Based on the results of the analysis of the Altman Z-Score model and the Springate model, it shows that PT. Net Visi Media Tbk experienced financial distress or bankruptcy. Meanwhile, the results of the Zmijewski model analysis show that PT. Net Visi Media Tbk did not experience financial difficulties or bankruptcy.

The company's management should be able to consider the results of this analysis to avoid the risk of financial difficulties and immediately improve its performance by taking strategic steps for the company's survival, one of which is by managing assets and reducing debt. Investors and creditors are expected to be more careful in investing, and it is hoped that this research can be used as a reference.

## REFERENCES

Arifin, A. Z. (2018). *Manajemen Keuangan*. Yogyakarta : Zahir Publishing.

Brigham, E. F., & Houston, J. F. (2016). *Dasar-Dasar Manajemen Keuangan. Edisi 14. Buku 1*. Terjemahan N. I. Sallama dan F. Kusumastuti. Jakarta: Salemba Empat.

Harahap, S S. (2018). *Analisis Kritis atas Laporan Keuangan*. Cetakan Keempat Belas. Jakarta: Rajawali Pers.

Korry, I Komang Try Satriawan., Dewi, Made Pratiwi., Ningsih, Ni Luh Anik Puspa. (2019) Analisis Prediksi Kebangkrutan Berdasarkan Metode Altman Z-Score (Studi Kasus Pada Bank Bumn Yang Terdaftar Di BEI). *Buletin Studi Ekonomi*. 24(2), 191-200.

Murhadi, Werner R. (2019). *Analisis Laporan Keuangan, Proyeksi dan Valuasi Saham*. Jakarta: Salemba Empat.

Nasmi, Widia., & Afriyenti, Mayar. (2021). Analisis Prediksi Kebangkrutan pada Perusahaan Manufaktur Sub Sektor *Food and Beverages* Yang Terdaftar di Bursa Efek Indonesia: Menggunakan Model Altman, Springate, dan Grover. *Jurnal Eksplorasi Akuntansi*. 3(4), 749-763.

Platt, Harland D., & Platt, Marjorie B. (2006). Understanding Differences Between Financial Distress and Bankruptcy. *Review of Applied Economics*. 2(2), 141-157.

Prihadi, T. (2019). *Analisis Laporan Keuangan.* Gramedia Pustaka Utama.

Sari, Mauli Permata., & Yunita, Irni. (2019). Analisis Prediksi Kebangkrutan Dan Tingkat Akurasi Model Springate, Zmijewski, Dan Grover pada Perusahaan Sub Sektor Logam Dan Mineral Lainnya Yang Terdaftar Di Bursa Efek Indonesia Tahun 2012-2016. *JIM UPB*. 7(1), 69-77.

Silalahi, Ulber. (2018). *Metode Penelitian Sosial*. Bandung: Refika Aditama.

Spence, Michael. (1973). Job Market Signaling. The Quarterly Journal of Economics. 87(3), 355-374.

Sugiyono (2019). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alphabet.

Susilawati, Eding. (2019). Analisis Prediksi Kebangkrutan Dengan Model Alman Z-Score Pada Perusahaan Semen Yang Terdaftar Di Bursa Efek Indonesia Periode 2012-2018. *Jurnal Ilmiah Akuntansi dan Keuangan*. 2(1), 1-12.

Utami, Try Wahyu., & Hardana, Ali. (2022). Analisis Prediksi Kebangkrutan dengan Menggunakan Metode Altman Z-Score pada PT. Indofood Sukses Makmur, Tbk. *Jurnal Ilmu Sosial dan Humaniora*. 1(4), 399-404.