Analysis of *Soe Financial Distress* Before And During *Covid-19* Pandemic Listed On The Indonesia Stock Exchange Period 2019-2022 (Empirical Study on Non-Manufacturing SOEs)

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Abstract

This study aims to determine whether there is a significant difference between the level of financial distress of Non-Manufacturing SOEs listed on the Indonesia Stock Exchange for the period 2019–2022 and the period before and during the COVID-19 pandemic. This study is a quantitative study through secondary data examination. The population of this study is state-owned enterprises that do not carry out manufacturing activities. Using a purposive selection approach, six sample companies were selected from the financial services, transportation services, communication services, and construction services sectors. The data analysis procedures used were the Wilcoxon Signed Rank Test, Normality Test, and Altman Z-Score. The results of the study using the Altman Z-Score methodology showed that there was no statistically significant variation in the level of financial distress experienced by Non-Manufacturing SOEs listed on the Indonesia Stock Exchange before and during the COVID-19 pandemic.

Keywords: *Financial Distress, Altman Z-Score, Covid-19*

1. INTRODUCTION

In early 2020, news broke that a new virus known as SARS-Cov-2, the cause of COVID-19, had been discovered and shocked the whole world. This viral disease attacks the respiratory system and can cause mild, severe, or even deadly symptoms. On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a global epidemic. WHO has emphasized the importance of vigilance in stopping the transmission of the virus and its impact on the global economy (Tertia and Subroto, 2021). After the government designated COVID-19 as a non-natural national disaster in Indonesia on March 14, 2020, a number of companies and public places were closed as a result of significant social restrictions from the government. As a result, some organizations have implemented a work-from-home policy for their staff members, which has led to disruptions to daily operations and ultimately impacted the keadaan dan kemanjuran bisnis. Hampir 90% dari 142 BUMN di Indonesia dari various industries affected by COVID-19, The impact of COVID-19 on State-Owned Enterprises (SOEs) is very felt. Some of the factors that caused the impact of COVID-19 on State-Owned Enterprises (SOEs) included disruptions in the supply of raw materials, a decline in purchasing power that led to a decline in demand and sales, and operational disruptions due to restrictions and cessation of activities.

Liquidity in several SOEs is affected by these things. (Lisnawati, 2020).

Financial challenges for State-Owned Enterprises (SOEs) can arise due to the inability of some companies to fulfill their commitments due to operational limitations and declining revenues. If the financial problems that arise are not immediately addressed by checking the company's financial statements regularly, it can lead to bankruptcy. Financial statements of a company merupakan puncak dari catatan akuntansinya selama periode waktu tertentu (Hafsari dan Setiawanta, 2021). The purpose of financial analysis is to understand the short-term and long-term financial performance of a company. Financial statements summarize all the company's financial activities so that they can be used as a decision-making tool for future planning by various parties (Boby et al., 2014).

Financial difficulties or bankruptcy can be predicted using a variety of analytical approaches. Altman Z-Score is one of the most commonly used techniques. With an accuracy rate of almost 95%, the Altman Z-Score is a statistic used to predict bankruptcy (Hafsari and Setiawanta, 2021). According to Nirmalasari (2018), the Altman Z-Score is the most accurate methodology for measuring financial challenges in various economic scenarios because it has a low error rate and high accuracy compared to the other two techniques, Springate and Zmijewski.

According to Platt and Platt (2002), financial difficulties are the stage before bankruptcy or liquidation, which is when a company's financial situation deteriorates. Dwijayanti's research (2010) shows that financial difficulties have an impact on investors and creditors, so they are more cautious when allocating cash or providing loans to related companies. In addition, Dwijayanti (2010) highlights how important it is to anticipate financial difficulties in order to understand the condition of businesses that are experiencing financial problems. Thus, decision-makers can leverage this knowledge, or businesses can use it to prevent bankruptcy.

According to Ramadhani and Lukviarman (2009), financial difficulties are usually the first sign of a company's bankruptcy. The company will have difficulty managing its activities to generate profits if it cannot get out of its financial difficulties. As a result, the company will be at risk of bankruptcy. Munawir (2002) added that external and internal variables can result in bankruptcy. While external variables may include the state of the economy, product demand in the market, price volatility, raw material supply, and other considerations, internal elements include financial and management aspects of decision-making.

Table 1

Summary of Financial Data of Non-Manufacturing SOEs Before *Covid-19* in 2019 (in thousands of Rupiah)

No.	Stock Code	Summary of Financial Data of Non-Manufacturing SOEs Year 2019			
		ACTIVE	DEBT	CAPITAL	PROFIT
1.	PTDU	153.907.143.935	128.482.120.415	25.425.023.520	3.025.772.144
2.	TAMA	137.020.378.518	114.545.731.731	22.474.646.787	1.587.817.053
3.	AMAR	3.452.515.470	2.374.107.426	1.078.408.044	61.426.524.000
4.	TRJA	545.152.568.664	149.718.360.680	395.434.207.984	30.564.435.089
5.	MORA	12.795.937.896.881	10.603.166.858.740	2.192.771.038.141	591.495.494.441
6.	BBSI	953.737.479.075	452.297.420.963	501.440.058.112	22.261.801.330

Source: Data processed by researchers, 2024

Based on table 1 above, it can be concluded that TAMA shares that received the smallest profit and AMAR shares that received large profits in 2019 as well as their debt and capital can be said to be small among other stocks.

From the description above, it can be seen that businesses that have been operating for some time can experience financial difficulties if their financial condition is not as expected. The phase of financial slump that occurs before liquidation or financial hardship is referred to as financial hardship. Proper handling of financial difficulties is essential to prevent potential financial crises. Therefore, early detection of *financial distress* allows companies to take necessary corrective steps before the problem becomes more serious. In this study, *the Altman Z-Score* method is used to calculate *financial distress*.

2. LITERATURE REVIEW

2.1. Financial Management

Financial management, as defined by Sa'adah (2020), is the process of organizing, assessing, and controlling an organization's financial activities. These tasks are often handled by a financial manager.

2.2. Signal Theory

Brigham (2010) defines signals as actions taken by a company to inform investors about management's feelings about the company's future. These cues are in the form of specific things about the steps that management has taken to accommodate the owner's wishes. Because these signals influence the other party's investment decisions, company information becomes very important.

2.3. State-Owned Enterprises (SOEs)

State-Owned Enterprises (SOEs) are business entities that produce goods and services for the benefit of the community by using capital that is mostly or entirely sourced from segregated public assets. Another important source of funding for the state comes from SOEs.

2.4. Financial Statements

Financial statements are records provided by managers or company leaders to interested external parties as a form of accountability for the management that has been entrusted to them. (Rahardjo, 2005).

2.5. Financial Statement Analysis

Septiana (2019) stated that financial report analysis involves evaluating the balance sheet, income statements, and their attachments to assess the company's financial health. This analysis is carried out by calculating financial ratios to evaluate the company's financial performance historically, currently, and potentially in the future (Iqbal and Asyriana, 2020).

2.6. *Financial Distress*

Platt and Platt (2022) describe *financial distress* as a condition of declining the company's financial situation before reaching the point of bankruptcy or liquidation. The term financial hardship is an early sign of a company that is completely bankrupt (Islamy, 2021).

2.7. Bankruptcy

According to Yati and Afni Patunrui (2017), a business that is unable to manage its activities to generate profits and pay its creditors is said to be bankrupt. Through bankruptcy prediction analysis, businesses can identify possible bankruptcy, so that management can better understand the financial condition and direction of their organization.

2.8. Altman Z-Score Method

In addition to being a measurable management tool for a company's financial condition during financial difficulties, the Altman Z-Score is a multivariable formula that assesses a company's likelihood of going bankrupt.

Altman (1968) Identified five effective ratios of money in predicting bankruptcy, namely working capital to total assets, EBIT to total assets, book value of equity to total debt and sales to total assets.

2.9. Rating Ratios in Modified Altman Z-Score Model

1. *Working Capital/Total Assets*
2. *Retained Earning Total Assets* (Laba Ditahan/Total Aktiva)

3. *Earnings Before Interest and Taxes (EBIT)*/Total Assets (Laba Operasional/Total Aktiva)
4. *Book Value Of Equity/Total Liabilities*

2.10. Research Framework of Thought

Based on the explanation above, the research framework can be described as follows:

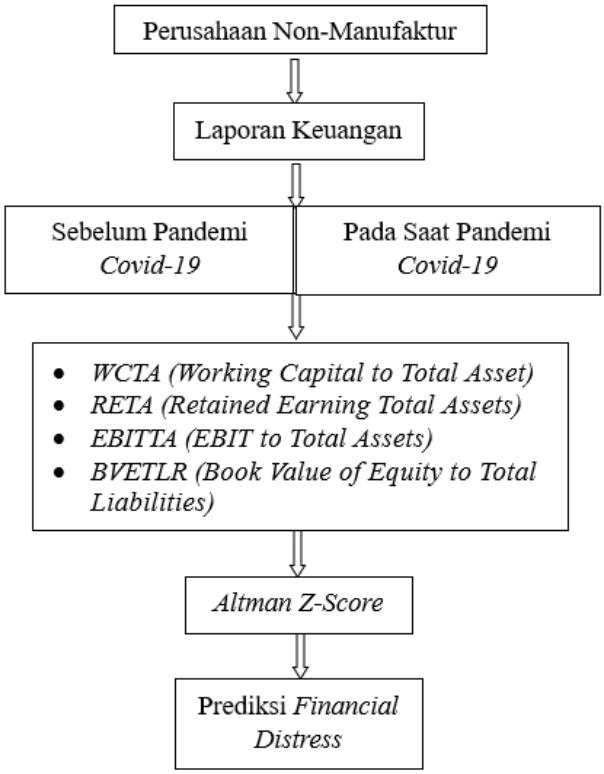


Figure 1
Research Framework of Thought

2.11. Research Hypothesis

Based on the marketing background and the formulation of the problem above, the hypothesis is drawn, namely "It is suspected that there is a significant difference in *the financial distress* of Non-Manufacturing SOEs before and during the *covid-19 pandemic* listed on the Indonesia Stock Exchange for the 2019-2022 period."

3. RESEARCH METHODS

3.1. Data Types and Sources

This study uses a quantitative approach with a descriptive method. The quantitative method is used to emphasize the results in the form of numbers from the study. A descriptive approach is used to present structured and relevant information about a meticulous population.

The data used is secondary data, which is not collected directly by researchers but obtained from other sources such as reports, books, journals, articles, or scientific magazines that are

related to the research topic. The secondary information used is the financial statements of Non-Manufacturing SOEs listed on the Indonesia Stock Exchange from 2019-2022. The data can be accessed through the Indonesia Stock Exchange website at www.idx.co.id.

3.2. Data Collection Methods

The data used comes from the financial statements of Non-Manufacturing SOEs that have been listed on the Indonesia Stock Exchange or *go public* from 2019-2022. The financial statements can be obtained through the website www.idx.co.id.

3.3. Population and Sample

The population in this study is 15 non-manufacturing state-owned companies (SOEs) listed on the Indonesia Stock Exchange for the 2019–2022 period, both before and after the Covid-19 pandemic.

Purposive sampling is an approach used in sampling procedures, depending on certain criteria or factors. Six samples of Non-Manufacturing SOEs were acquired on the Indonesia Stock Exchange (IDX) during the 2019–2022 period based on the specified criteria..

3.4. Research Variables

The variables in this study consist of two types, namely independent variables and dependent variables. Independent variables affect dependent variables, or independent variables are the cause of changes in dependent variables, so they are often referred to as stimulation variables (Sugiyono, 2013).

1. Independent variables in this study include:
   1. *Working Capital to Total Assets (X1)*
   2. *Retained Earning to Total Assets (X2)*
   3. *Earning Before interets and Taxes/Total Assets (X3)*
   4. *Book Value of Equity to Total Liabilities (Book Value of Debt) (X4)*

1. Dependent variables are variables that are influenced by independent variables (Sugiyono, 2013). The dependent variable in this study is the prediction of *financial distress* or bankruptcy conditions as stated in the *Z-Score*. The *Z-Score indicators* in the measurement of dependent variables are:
   1. *Z-Score* >2.60: Still in *the Safe Zone*, indicating healthy condition.
   2. 1.1 < Z< 2.60: In *the Grey Zone*, indicates suspicious conditions.
   3. *Z-Score* < 1.1: In *the distress zone*, indicates unhealthy conditions and potential bankruptcy.

4.RESULTS AND DISCUSSION

4.1. Descriptive Analysis

4.2. Calculating *Financial Distress*

Table 2
Altman Z-Score and Z-Score Ratios Before *Covid-19*

Code Stock	Year	*WCTA* (X1)	*RETA* (X2)	*EBITTA* (X3)	*BVETTL* (X4)	*Z-SCORE*
PTDU	2019	0,165	0,02	0,02	0,024	0,228
	2020	388,581	12,844	12,844	0,002	414,27
TAMA	2019	0,164	0,012	0,012	0,014	0,201
	2020	0,296	0,024	0,024	0,034	0,378

AMAR	2019	0,312	17,792	17,792	25,874	61,77
	2020	0,263	2,116	2,116	2,871	7,365
TRJA	2019	0,725	0,056	0,056	0,204	1,042
	2020	0,462	0,055	0,055	0,102	0,674
MORA	2019	0,171	0,046	0,046	0,056	0,32
	2020	0,239	0,043	0,043	0,057	0,382
BBSI	2019	0,526	0,023	0,023	0,049	0,622
	2020	0,7	0,024	0,024	0,081	0,83

Source: Data processed using MS. Excel

Based on table 2 above, in 2020 there was a significant increase in the WCTA, RETA, and EBITTA ratios compared to 2019, which resulted in a drastic increase in the Z-Score. This indicates that the PTDU company is experiencing tremendous financial improvement or that there are errors in the data that need to be reviewed.

The company TAMA showed improvement in all ratios leading to an increase in the Z-Score from 0.201 in 2019 to 0.378 in 2020, indicating more stable financial conditions.

Although the ratios declined in 2020, Z-Score still shows that AMAR companies are in excellent financial condition. However, significant declines in RETA and EBITTA need to be observed.

TRJA companies showed declines in WCTA and BVETTL, resulting in a decline in the Z-Score from 1.042 in 2019 to 0.674 in 2020, indicating increased financial risk.

The MORA company showed a slight improvement in the WCTA and BVETTL, which resulted in a small improvement in the Z-Score from 0.32 in 2019 to 0.382 in 2020, showing a slight improvement in financial conditions.

As well as BBSI companies experienced a sharp decline in the WCTA, but the increase in RETA and BVETTL helped improve the Z-Score from 0.662 in 2019 to 0.83 in 2020, indicating better financial conditions despite the decline in the WCTA.

Z-Score's analysis before the *covid-19* pandemic showed variations in financial conditions among these companies. Some companies seperti PTDU dan AMAR menunjukkan perbaikan signifikan dalam rasio keuangan mereka, sementara perusahaan yang lain seperti TRJA menunjukkan penurunan. Secara keseluruhan, Z-Score memberikan pandangan comprehensive regarding the financial stability of the company and helps in identifying potential bankruptcy, thus allowing management to take preventive measures.

Table 3
Altman Z-Score and Z-Score Ratios During *Covid-19*

Stock Code	Year	*WCTA* (X1)	*RETA* (X2)	*EBITTA* (X3)	*BVETTL* (X4)	*Z-SCORE*
PTDU	2021	0,276	0,009	0,009	0,012	0,306
	2022	0,304	0,288	0,288	0,315	1,196
TAMA	2021	0,287	2,01	2,01	0,001	0,289
	2022	0,298	0,018	0,018	0,026	0,36
AMAR	2021	0,205	0,791	0,791	0,995	2,782
	2022	0,705	34,491	34,491	116,929	186,616
TRJA	2021	0,497	0,071	0,071	0,141	0,78
	2022	0,401	0,042	0,042	0,07	0,554
MORA	2021	0,313	0,04	0,04	0,058	0,45
	2022	0,418	0,039	0,039	0,067	0,563
BBSI	2021	0,836	0,027	0,027	0,164	1,054

	2022	0,925	0,023	0,023	0,301	1,272

Source: Data processed using MS. Excel

Based on table 3 above, there was an increase in the Z-Score from 0.306 in 2021 to 1,196 in 2022 at PTDU companies. Despite the improvements, the Z-Score is still below 1.8 which means the company is still in a high bankruptcy risk zone.

The TAMA company showed a slight improvement in the Z-Score from 0.289 in 2021 to 0.36 in 2022, but remained in the high risk zone for bankruptcy.

Meanwhile, AMAR companies showed a significant increase in the Z-Score, from 2,782 in 2021 to 186,616 in 2022. This increase indicates a very healthy financial condition and is far from the risk of bankruptcy.

The decline in the Z-Score from 0.78 in 2021 to 0.554 in 2022 indicates an increased risk of bankruptcy for TRJA companies, as the score is close to the high-risk zone.

The company MORA showed a slight improvement in the Z-Score from 0.45 in 2021 to 0.563 in 2022, but still remained in the high-risk zone.

And the BBSI company showed an increase in the Z-Score from 1,054 in 2021 to 1,272 in 2022. Despite the improvement, this value still indicates a moderate risk of bankruptcy.

This analysis shows the importance of continuous monitoring of financial ratios to identify potential financial problems and take corrective action before the situation deteriorates. Companies that show signs of improvement need to maintain and improve strategi mereka untuk memastikan keberlanjutan dalam kondisi keuangan yang sehat.

4.3. Descriptive Statistical Test

Table 4
Descriptive Statistics Before the *Covid-19 Pandemic*

Descriptive Statistics						
Year	Variabel	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
2019	*WCTA* (X1)	6	0,16	0,73	0,3438	0,23396
2020	*WCTA* (X1)	6	0,24	388,58	65,0902	158,47759
2019	*RETA* (X2)	6	0,01	17,79	2,9915	7,25075
2020	*RETA* (X2)	6	0,02	12,84	2,5177	5,12679
2019	*EBITTA* (X3)	6	0,01	17,79	2,9915	7,25075
2020	*EBITTA* (X3)	6	12,84	12,84	2,5177	5,12679
2019	*BVETTL* (X4)	6	0,01	25,87	4,3702	10,53491
2020	*BVETTL* (X4)	6	0,00	2,87	0,5245	1,15008

2019	*Z-SCORE*	6	0,20	61,77	10,6972	25,02249
2020	*Z-SCORE*	6	0,38	414,27	70,6498	168,36087

Source: Data processed using IBM SPSS Statistics 27 (2024)

Table 4 presents data collected before the Covid-19 pandemic in 2019. The Working to Total Assets (X1) ratio has an average of 0.3438, a minimum value of 0.16, and a maximum value of 0.73. The maximum value for the Retained Earnings to Total Assets (X2) ratio is 17.79, the minimum value is 0.01, and the average value is 2.9915. The highest value for the EBIT to Total Assets (X3) ratio is 17.79, the minimum value is 0.01, and the average value is 2.9915. The Book Value of Equity to Total Liabilities (X4) ratio ranges from a minimum of 0.01 to a maximum of 25.87, and an average of 4.3702.

Information from the Covid-19 pandemic in 2020 shows that the average Working to Total Assets (X1) ratio is 65.0902, the lowest value is 0.24, and the highest value is 388.58. The maximum value of the Retained Earning to Total Assets (X2) ratio is 12.84, the minimum value is 0.02, and the average value is 2.5177. The maximum value of the EBIT to Total Assets (X3) ratio is 12.84, the minimum value is 12.84, and the average value is 2.5177. The Book Value of Equity to Total Liabilities (X4) ranges from a minimum of 0.00 to a maximum of 2.87, with an average of 0.5245.

From the results of descriptive statistical analysis, it is known that the *Working To Total Assets* (X1) ratio shows a significant increase in the average *Working To Total Assets* from 2019 to 2020 which shows an increase in working capital relative to total assets during the *covid-19 pandemic.* Before the pandemic *covid-19*, *the value of Working To Total Assets* is more stable and lower.

Table 5
Descriptive Statistics During the *Covid-19 Pandemic*

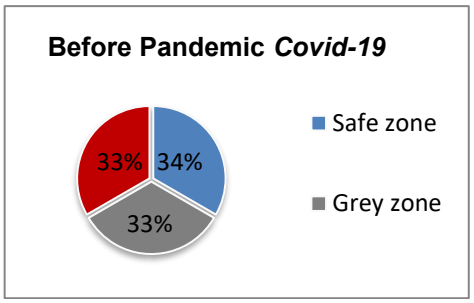
Descriptive Statistics						
Year	Variabel	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
2021	*WCTA* (X1)	6	0,21	0,84	0,4023	0,23376
2022	*WCTA* (X1)	6	0,30	0,93	0,5085	0,25218
2021	*RETA* (X2)	6	0,01	2,01	0,4913	0,80309
2022	*RETA* (X2)	6	0,02	34,49	5,8168	14,04780
2021	*EBITTA* (X3)	6	0,01	2,01	0,4913	0,80309
2022	*EBITTA* (X3)	6	0,02	34,49	5,8168	14,04780
2021	*BVETTL* (X4)	6	0,00	1,00	0,2285	0,38132
2022	*BVETTL* (X4)	6	0,03	116,93	19,6180	47,67262
2021	*Z-SCORE*	6	0,29	2,78	0,9435	0,94840
2022	*Z-SCORE*	6	0,36	186,62	31,7602	75,86446

Source: Data processed using IBM SPSS Statistics 27 (2024)

Data collected before the 2019 Covid-19 epidemic is shown in Table 5. With a minimum value of 0.21 and a maximum value of 0.84, the Working to Total Assets (X1) ratio has an average of 0.4023. The Retained Earnings to Total Assets (X2) ratio has a maximum value of 2.01, a minimum value of 0.01, and an average value of 0.4913. The EBIT To Total Assets (X3) ratio has an average value of 0.4913, a minimum value of 0.01, and a maximum value of 2.01. The largest value of the Book Value Of Equity To Total Liabilities (X4) ratio is 1.00, the minimum value is 0.00, and the average value is 0.2285.

Data from the Covid-19 pandemic in 2020 shows an average Working to Total Assets (X1) ratio of 0.5085, a minimum value of 0.30, and a maximum value of 0.93. The ratio of retained earnings to total assets (X2) has an average value of 5.8168, a minimum value of 0.02, and a maximum value of 34.49. The ratio of EBIT to Total Assets (X3) has an average value of 5.8168, a minimum value of 0.02, and a maximum value of 34.49. The average book value to total liabilities ratio (X4) is 19.6180, the maximum value is 116.93, and the lowest value is 0.03. From the results of descriptive statistical analysis, it is known *that the Retained Earning To Total Assets and EBIT To Total Assets* Ratio, these two variables show the same pattern with a significant increase in variation during the *covid-19* pandemic, especially in 2022, which shows a major change in the company's revenue and profit. While the *Book Value Of Equity To Total Liabilities* Ratio increased significantly in 2022 compared to 2019 and 2020, showing a large increase in equity relative to liabilities.

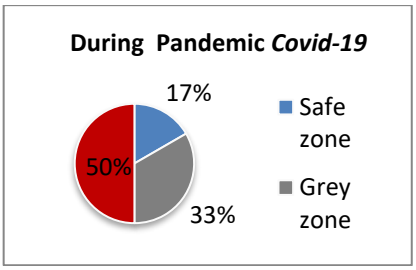
The average Z-Score assessment results for Non-Manufacturing SOEs before the Covid-19 pandemic were in the vulnerable category (gray zone), based on the modified Altman Z-Score assessment criteria, namely the healthy category (safe zone) with a Z-Score of >2.60, the vulnerable category (gray zone) with a Z-Score between 1.1 to 2.60, and the bankrupt category (distressed zone) with a Z-Score <1.1. A wide range of data is indicated by an average Z-Score score that is greater than the standard deviation.



Source: Data processed by researchers, 2024.

Figure 2
Z-Score Chart of Non-Manufacturing SOEs Before the *Covid-19 Pandemic*

Based on figure 2, before the *Covid-19* pandemic, 34% of the *safe zone was in the safe zone* , which means they have a healthy financial condition. 33% of Non-Manufacturing SOEs are in the *grey zone*, which means they are in the grey category or prone to *financial distress*. 33% of Non-Manufacturing SOEs are in the distress *zone* category, which means that the company's financial condition is unhealthy or experiencing financial difficulties.



Source: Data processed by researchers, 2024.

Figure 3
Z-Score Chart of Non-Manufacturing SOEs During the *Covid-19 Pandemic*

The results of the study show that 17% of Non-Manufacturing SOEs are in the safe zone category or in good financial condition, based on Figure 3 which illustrates the financial situation during COVID-19. As many as 33% of people are in the "grey zone", which means they are in the dalam kondisi abu-abu atau rentan against financial difficulties. As many as 50% are in crisis zones or are experiencing financial problems.

4.4. Normality Test

The purpose of the normality test is to ascertain whether the data has a normal distribution or not. Because there were fewer than 50 data points in the study, the Shapiro-Wilk test was used for the normality test. The IBM SPSS Statistics 27 statistical program was used to perform this test. The difference test you use—the Wilcoxon Signed Rank Test or the Paired T-Sample Test—will depend on the normality test findings.

Here are the results of the normality test with *Shapiro-Wilk*:

Table 6
Shapiro-Wilk *Test Results*

Tests of Normality				
Variabel	*Shapiro-Wilk*			
	Statistic	*Df*	*Sig.*	Information
Altman Z-Score Sebelum *Covid-19*	,595	6	,000	Abnormal
Altman Z-Score Pada Saat *Covid-19*	,503	6	,000	Abnormal

Source: Data processed using IBM SPSS Statistics 27 (2024)

The data before Covid-19, or the 2019–2020 time frame, were not normally distributed, as shown by the Altman Z-Score value of 0.595 with a significance value of 0.000, or less than 0.05, according to the findings of the Shapiro-Wilk normality test. Data during Covid-19 or the 2021–2022 time span was also not distributed normally, as indicated by a Z-Score value of 0.503 and a significance value of 0.000, or less than 0.05. The data were found to be abnormally distributed by the Shapiro-Wilk normality test, which is why a nonparametric Wilcoxon-marked rating test would be used for the difference test.

4.5. Hypotesis Testing

The test was different using the Non-Parametric *Wilcoxon Signed Rank Test*. This test was chosen because the research data was not normally distributed based on the normality test. The results of *the Wilcoxon* test will show whether there is a significant difference in the *financial distress* of Non-Manufacturing SOEs before and during the *covid-19 pandemic* listed on the Indonesia Stock Exchange for the 2019-2022 period.

Table 7
Hasil Uji *Wilcoxon Signed Rank Test*

Mean		Z	Asymp. Sig. (2-tailed)
Before *Covid-19*	During *Covid-19*		
3,00	4,50	-,314	,753

Sumber: Data diolah menggunakan IBM SPSS Statistics 27 (2024)

Asymp. Sig. (2-tailed) dari uji peringkat bertanda Wilcoxon is 0.753, which indicates a significance value > 0.05. This shows that H1 was rejected, which shows there is no significant difference between the period before and during the Covid-19 epidemic.

Conclusion

The financial difficulties experienced by SOEs listed on the Indonesia Stock Exchange are not much different from each other, based on the results of a study that analyzed the financial difficulties of these business entities before and after the outbreak of Covid-19. This cannot be separated from a number of bold government initiatives, such as the National Economic Recovery Program (PEN), POJK 11/POJK.03.2020, Minister of Finance Regulation (PMK) No.70/PMK.05/2020, and the opening of new toll roads that boost the transportation infrastructure services industry.

Based on the results of the non-parametric Wilcoxon Signed Rank Test, the comparison of the level of financial hardship of Non-Manufacturing SOEs recorded on the Indonesia Stock Exchange before and after the Covid-19 pandemic using the Altman Z-Score technique did not find a statistically significant difference.

Z-Score's analysis of Non-Manufacturing SOEs showed a significant increase during the *covid-19* pandemic, especially in 2020, which indicated an increased risk of bankruptcy in some companies. Before *Covid-19*, 34% were *safe zones*, which means they have healthy financial conditions. 33% of Non-Manufacturing SOEs are in the *grey zone*, which means they are in the grey category or prone to *financial distress*. 33% of Non-Manufacturing SOEs are in the distress *zone* category, which means that the company's financial condition is unhealthy or experiencing financial difficulties. At the time of Covid-19, 17% of Non-Manufacturing SOEs were in the *safe zone* category or in healthy financial condition. 33% were in the *grey zone* category , which means they were in a gray condition or prone to *financial distress*. 50% were in the distress *zone* category or were experiencing financial difficulties.

Suggestion

1. For future researchers, it is recommended to use other methods such as *the zmijewski, beaver, springate, grover* method, and other methods.
2. The researcher is then expected to add or use other variables.
3. It is hoped that the next researcher can produce data that is normally distributed so that it is possible to use parametric statistical tests.

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