GENDER DIVERSITY ON BOARD OF DIRECTORS AND FINANCIAL DISTRESS : DIGITAL TRANSFORMATION AS MODERATING VARIABLE

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ABSTRACT

Introduction/Main Objectives: Financial distress is an important topic in accounting and business management as it impacts markets and stakeholders' decisions. This study aims to examine the impact of gender diversity on financial distress and the moderating role of digital transformation. The population of this study is consumer non-cyclical companies listed on the Indonesian Stock Exchange between the 2018-2022 period. Using purposive sampling techniques, 54 companies were selected as the samples (270 firm-year-observation). **Background Problems:** The International Monetary Fund (IMF) estimates that the global economy will slow down from 3.4% in 2022 to 2.8% in 2023 and rise again to 3% in 2024. Globally, this affects the company's financial condition and causes the likelihood of financial distress. Gender diversity as a component of the corporate board can mitigate the likelihood of financial distress. **Novelty:** This study uses digital transformation as a moderating variable. Previous research use digital transformation as independent variable and none of them use digital transformation as moderating variable. **Research Methods:** The data analysis method in this study uses Partial Least Squares (PLS) - Structural Equation Modeling (SEM). **Finding/Results:** The first finding explains that gender diversity has a negative effect on financial distress. The second finding explains that digital transformation does not mitigate the negative effect between gender diversity and financial distress. **Conclusion:** Gender diversity negatively affect financial distress and digital transformation does not mitigate negative effect between gender diversity and financial distress.

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1. Introduction

The global economic crisis is a condition in which all economic market sectors experience destruction and affects all sectors globally (Dirman, 2020). The weakening global economic condition also caused economic growth in countries around the world, including Indonesia (Vidya & Giarto, 2020). The IMF (International Moneter Fund) estimates that the global economy will slow down from 3.4% in 2022 to 2.8% in 2023 and rise again to 3% in 2024. It shows that the economic condition is unstable. This is caused by competition between companies which affects the economic sector changes rapidly (Utami et al., 2019). If the company is unable to deal with the changes, it will have an impact on the company's financial condition and cause financial distress.

Financial distress is a condition that indicates whether a company is experiencing financial difficulties so it makes the management, such as CEO and CFO pay attention to its business activities (Kushermanto et al., 2023). Li et al. (2020) stated that financial distress is a condition when a company experiences threats from the external economic environment or failure of internal financial decisions which will have an impact on insufficient cash flow or even worse.

At the international level, Metcash, one of the largest companies in Australia, experienced losses reaching 237.4 million Australian dollars or USD 162.5 million which is equivalent to IDR 2.26 trillion (exchange rate IDR 13.909/USD), as well as experiencing an operating profit loss of around 15 million Australian dollars or USD 10.3 million or IDR 143 billion in 2019. Cui & Wang (2023) stated that as many as 623 companies listed on the Chinese stock exchange experienced financial problems due to operational losses at the end year of 2021. Then, China Evergrande Group experienced a loss of 81 million dollars due to difficulties in completing projects and paying suppliers and creditors.

Financial distress is a global problem that attracts the attention of researchers throughout the world and which is experienced by various companies due to internal and external factors of the company. Company's internal factors are corporate governance, gender diversity, the board size, board independence, CEO duality, managerial ownership, woman on the board of commissioner, business strategy, CEO experience, ESG (Environmental, Social Governance), debt policy, earnings management, firm size, company age, asset tangibility, loss ratio, dan leverage, CSR (Corporate Social Responsibility), profitability, dan liquidity. The internal factors are investigated by Manzaneque et al. (2016), Shahwan & Habib (2020), Gerged et al. (2023), Kalbuana et al. (2022), Muien et al. (2023), García & Herrero (2021), Santen & Donker (2009), Salloum et al. (2013), Nuswantara et al. (2023), Ashraf et al. (2022), Mariano et al. (2020), Luqman et al. (2018), Akbar et al. (2017), Habib (2023), Yao (2021), Boubaker et al. (2020), Isayas (2021), Hermawan et al. (2021), Sayidah et al. (2020), Chhillar & Lellapalli (2022), and Luu Thu (2023). The company's external factors are digital transformation, imitative innovation, government subsidies, political connection, and banking relationships which are investigated by Cui & Wang (2023), Zhao et al. (2023), Liu et al. (2021), Sayidah et al. (2020), Yao (2021), He et al. (2019), and Yao (2021).

One of the important factors that influence the occurrence of financial distress is corporate governance practices, especially gender diversity. In principle, board structure diversity reflects the

true spirit of effective corporate governance mechanisms (Bernile et al., 2018; Harjoto et al., 2018; Li et al., 2021; McGuinness et al., 2017; Talavera et al., 2018). Research conducted by Al-Hadi et al. (2017) and Bhaskar et al. (2017) state that the possibility of financial distress in the company will increase when corporate boards are less diverse. This is in line with research conducted oleh Ali et al. (2023), García & Herrero (2021), Gerged et al. (2023), Kalbuana et al. (2022), and Muien et al. (2023) who found evidence that board diversity on the board of directors as measured by board gender diversity has a negative effect on financial distress. In contrast to research conducted by Santen & Donker (2009) dan Salloum et al. (2013) which proves that board gender diversity has no effect on financial distress.

The results of research on the effect of corporate governance proxied through gender diversity on the board of directors on financial distress provide mixed results. According to Baron & Kenny (1986), if the dependent and independent variables have a weak or inconsistent relationship, there may be moderating variables that affect the relationship. Therefore, this study will add digital transformation as a moderating variable in testing the relationship between the effect of board gender diversity on financial distress. Previous studies only use digital transformation as an independent variable so the researcher will use digital transformation as a moderating variable. Research conducted by Lin & Wang (2023) dan Zhao et al. (2023) found evidence that digital transformation has a negative effect on financial distress. This can be evidence that digital transformation can reduce the possibility of companies experiencing financial distress. By using digital technology, companies can transform unstructured and non-standardized data into structured and standardized information so as to improve information quality (Wu et al., 2022; Mu et al., 2023).

Based on these considerations, this study examines the effect of gender diversity on the board of directors on financial distress and the role of digital transformation as a moderator in the relationship between gender diversity and financial distress. Research questions presented in this study are: How does gender diversity on the board of directors affect financial distress? And how does digital transformation moderate the relationship between gender diversity and financial distress?

1. Literature Review

Agency theory

Jensen & Meckling (1976) describes the agency relationship between the principal (the CEO or investor) and the agent (corporate management). García & Herrero (2021) stated that agency theory explains the role of directors as advisors for managers and elaborates between owner's and shareholder's goals also resolving conflicts with creditors. Kalbuana et al. (2022) suggests that agents will behave in personal interests that are likely and contrary to the interests of the principal. Agency theory uses three assumptions of human nature, namely generally selfish, limited thinking in the future, and risk aversion (Eisenhardt, 2018; Sudaryanto et al., 2022).

Innovation diffusion theory

Innovation diffusion theory was first proposed by Rogers (1962). This theory focuses on understanding how, why and how quickly ideas and technological innovations spread in a social system. The approach used in innovation diffusion theory is the opposite of change. In addition, Rogers (1962) also stated that this theory considers change as the evolution of behavior or products so that they are more in line with what an individual or group needs. Overall, innovation diffusion theory is divided into 4 (four) main elements, namely innovation as an idea, idea, or object that is considered new by an individual or community; communication system as a channel for sharing information with

each other; time as an aspect that records the categorization of the use and level of adoption of innovations, and social system as a unit that is interrelated in terms of problem-solving for a common goal. Innovation diffusion theory states that the process goes through a series of stages, such as innovators as the first individuals or groups to receive and adopt innovations, early adopters, early majority, late majority, and laggards.

Gender diversity

The corporate board is a governance mechanism that oversees and advises management, influences agency costs, and is responsible for reliable and high-quality accounting information (García & Herrero, 2021). In recent years, interest in board functions has increased with a focus on independence, size, and gender diversity as boards of directors are critical to corporate governance (Keay, 2017). Gender diversity can increase the effectiveness of corporate boards (Lee & Thong, 2023). Gender diversity on the board of directors supports the decision-making process so that it can help the company achieve company goals and prevent financial distress (García & Herrero, 2021).

Financial distress

Financial distress is a situation or condition where there are doubts about the company's future condition caused by financial difficulties and cannot generate sufficient revenue or profit (Sayidah et al., 2020; Kalbuana et al., 2022; Sudiyatno et al., 2022). In contrast to bankruptcy, financial distress occurs because the management is wrong in conducting financial policies and fails in planning the company's operations (Platt & Platt, 2006). It occurs when the company's cash flow is less than the portion of long-term debt that has matured (Whitaker, 1999; Kariani & Budiasih, 2017). In addition, this condition occurs due to the lack of corporate financing to fulfill bonds due to the non-achievement of the company's economic objectives, namely profit (Larasati & Wahyudin, 2019; Isayas, 2021).

Digital transformation

Digital transformation is a type of business transformation driven by technological developments (Tang, 2021). Digital transformation is the process by which a company utilizes a data-driven approach and leverages digital technologies, such as big data, cloud computing, and mathematical algorithms to seamlessly connect various aspects of its internal operations (Zhang & Wang, 2023). Wu et al. (2021) stated that digital transformation refers to companies that utilize digital technology and cutting-edge hardware systems to drive the digitization of materials and production processes that ultimately aim to improve quality and efficiency. According to Zhang & Wang (2023), igital transformation can reduce the operational uncertainty of an enterprise from two aspects. On the one hand, digital transformation can optimize production and management systems, improve operating performance and thus reduce revenue uncertainty. On the other hand, digital transformation equips companies with more resilience so as to reduce external uncertainty to the company's operations.

Hypothesis development

Gender diversity and financial distress

Agency theory supports the presence of gender diversity in the board structure which will reduce conflicts and desires between managers and shareholders as agents and principals (Benkraiem et al., 2017). This theory also supports board diversity because greater diversity on the board will keep managerial discretion within appropriate limits (Francoeur et al., 2008). According to Jensen & Meckling (1976), agency problems caused by the separation of owners and managers can result in companies being managed inefficiently, increasing the likelihood of failure or financial distress.

Research conducted by Muien et al. (2023) examined the effect of gender diversity on financial distress in Pakistan and found negative results. Also the research by Gerged et al. (2023) examined the effect of gender diversity and financial distress in the UK and found negative results. This is also in line with the research of García & Herrero (2021) dan Kalbuana et al. (2022) which found negative results between gender diversity and financial distress. In contrast to research by Santen & Donker (2009) and Salloum et al. (2013) which found that gender diversity has no effect on financial distress.

H1 : Gender diversity negatively affects financial distress.

Moderating role of digital transformation in the relationship between gender diversity and financial distress

Agency theory describes the agency relationship between two parties, namely the principal (company owner or investor) and the agent (company management) (Jensen & Meckling, 1976). According to Zhang & Wang (2023) digital transformation can improve corporate governance to reduce agency-related problems between shareholders and managers, in addition, Zhang & Wang (2023) also stated that the implementation of digital transformation can align the goals of managers with shareholders. By using digital technology, companies can transform large amounts of unstructured and non-standardized data into structured and standardized information thereby increasing the availability of such information (Wu et al., 2022; Mu et al., 2023). Moreover, digital mining systems and decision support systems built by digital technology can help managers to better understand the dynamic information of the market and reduce irrational decision-making behavior (Cui & Wang, 2023).

Research conducted by Cui & Wang (2023) states that digital transformation can reduce the possibility of financial distress in companies by reducing operational risk. This is also in line with the research of Zhang & Wang (2023) who found evidence that digital transformation negatively affects financial distress because digital transformation can reduce information risk, operational risk, and mitigate agency problems. Thus, this can support that digital transformation can strengthen the relationship between gender diversity on the board of directors on financial distress.

H2 : Digital transformation mitigates the negative effect of gender diversity on financial distress.

2. Method, Data, and Analysis

This research takes a quantitative approach and a causal study to test factors that are causing a problem (Sekaran, 2016). This study aims to provide an empirical evidence the effect of gender diversity on the board of directors on financial distress and the moderating role of digital transformation. The samples of this study included 270 observations that were collected from consumer non-cyclical companies listed on The Indonesian Stock Exchange in 2018-2022, based on purposive sampling (Table 1).

The study used secondary data collected from consumer non-cyclicals companies' annual report that were published on www.idx.com and was categorized as quantitative data. The criteria used for purposive sampling in this study as follows.

Table 1. Selection of research samples

No.	Purposive Sampling	Total
1.	Consumer non-cyclical companies listed on the Indonesian Stock Exchange during the 2018-2022 period.	124
2.	Consumer non-cyclical companies unlisted on the Indonesian Stock Exchange during the 2018-2022 period.	(53)

3.	Consumer non-cyclical companies whose the financial statements are incomplete during the 2018-2022 period.	(17)
4.	Consumer non-cyclical companies that do not provide the complate information during the 2018-2022 period.	0
Number of samples each year		54
Year of observation		5
Total sample in this study during the year of observation		270

Technical analysis and variable measurement

The data analysis technique used to test the hypothesis in this study is Partial Least Squares (PLS) - Structural Equation Modeling (SEM) because the data does not have to be multivariate normally distributed or indicators with categorical, ordinal, interval to ratio scales can be used in the same model, and the sample does not have to be large (Ghozali, 2012). In addition, PLS-SEM can be used in the analysis of moderation effects (Sarstedt, Marko, Christian M. Ringle, 2021). The software used in this research is WarpPLS 8.0. The model in this study can be described in the following equation.

$$FD_{ZMIJEWSKI} = a + p_1GD + p_2DT * GD + e \quad \dots (1)$$

$$FD_{GROVER} = a + p_1GD + p_2DT * GD + e \quad \dots (2)$$

Where :

FD = Financial Distress
GD = Gender Diversity
DT = Digital Transformations
DT*GD = Interaction between digital transformation and gender diversity

Financial distress

The dependent variable of the study is financial distress. Financial distress is a condition or situation when the company fails to fulfill its bond debt to creditors (Isayas, 2021) so that it requires external assistance to continue its business operations (Paule-Vianez et al., 2019). Based on Cardoso & Peixoto (2019), the measurement of financial distress variable is measured by a dummy variable. This study gives code 1 for companies experiencing financial distress and gray areas while healthy companies are coded 0. This study used the Zmijewski model and the Grover model as financial distress variable measurements.

1. Zmijewski model

$$ZMJ = -4{,}803 - 3{,}6X1 + 5{,}4X2 - 0{,}1X3$$

Where :
X1 = Net income/ Total assets
X2 = Total debt/ Total assets
X3 = Current assets/ Current liabilities

2. Grover model

$$G - Score = 1{,}650X1 + 3{,}404X2 - 0{,}016X3 + 0{,}057$$

Where :
X1 = Working Capital/ Total asset
X2 = EBIT/ Total asset
X3 = Net income/ Total asset

Gender diversity

The independent variable of this study is gender diversity on the board of directors. The board of directors is a form of good corporate governance that plays an important role in the company. To meet the needs and interests of diverse stakeholders, the board of directors must have diversity so that the company is long-term and sustainably oriented (Abbas & Frihatni, 2023). Gender diversity variable is measured by a dummy variable. A value of 1 is assigned to companies with a female board of directors and a value of 0 is assigned to companies without a female board of directors (García & Herrero, 2021); (Muien et al., 2023); (Kalbuana et al., 2022).

Digital transformation

Digital transformation is a process for companies to utilize a data-driven business approach to seamlessly connect various aspects of the company's internal operations (Zhang & Wang, 2023). Based on the business perspective, digital transformation can reduce the likelihood of financial distress by reducing business risks (Cui & Wang, 2023). Refer to Cui & Wang (2023); Zhang & Wang (2023); Hua & Yu (2023), the digital transformation variable is measured through the frequency of words related to digitization through the annual report, which focuses on the frequency of certain digital terms, such as artificial intelligence, blockchain, cloud computing, big data, and other digital technology applications. These words can be found in the annual report such as in the 'Company Business Overview', 'Operating Conditions Discussion and Analysis', and 'Management Discussion and Analysis' sections. According to Hu et al. (2023), the digital transformation keywords that can be used are as follows.

Table 2. Digital transformation keywords

Technology category	Keywords
Artificial intelligence	Artificial intelligence, business intelligence, machine learning, deep learning, image recognition, natural language processing, biological recognition, face recognition, speech recognition, authentication, etc.
Blockchain	Blockchain, digital currency, cryptocurrency, distributed computing, smart contract, etc
Cloud computing	Cloud computing, image computing, flow computing, memory computing, cognitive computing, green computing, brain-like computing, Internet of Things, secure multi-party computing, cyber-physical system, etc.
Big data	Big data, data mining, text mining, data visualization, virtual reality, augmented reality, mixed reality, etc.
Extended application of digital technology	E-commerce, mobile payment, third party payment, NFC payment, B2B, B2C, C2B, C2C, O2O, smart energy, smart wearable devices, intelligent agriculture, intelligent transportation, intelligent healthcare, intelligent marketing, smart home, robo- advisor, digital marketing, digital finance, Fin-tech, Internet finance, quantitative finance, etc.

Firm size

The control variable in this study is firm size (FZ). Firm size is measured by the logarithm of total assets (Sayidah et al., 2020).

Leverage

The control variable in this study is leverage (LEV). Leverage is measured by total debt divided by total equity.

3. Result and Discussion

Descriptive statistics

Based on the descriptive statistics output summarized in Table 2, it can be seen that the descriptive statistical data analysis for the financial distress variable shows that the financial distress variable, both Zmijewski model and Grover model, has a maximum value of 1 and a minimum value of 0 because it is proxied as dummy variable. Code 1 is used for companies in financial distress or grey area and code 0 is used for health companies. Financial distress measurement with Zmijewski model has an average as many 0,07 and a standard deviation value as many 0,26; financial distress measurement with Grover model has an average value as many 0,204 and a standard deviation value as many 0,404. Both Zmijewski model and Grover model have a high data variation because of the average value higher than the standard deviation value.

Table 3. Descriptive statistics result

Variables	Maximum	Minium	Mean	Standard deviation
Gender Diversity (GD)	1	0	0,444	0,497
Financial Distress_Zmijewski (ZMJ)	1	0	0.074	0.262
Financial Distress_Grover (GROVER)	1	0	0.204	0.404
Digital Transformation (DT)	24	5	12.66	3.14
Firm Size (FZ)	14.26	8.63	12.54	0.98
Leverage (LEV)	245.59	-13.24	2.80	15.25

The gender diversity variable has a maximum value of 1 and a minimum value of 0 because it is proxied by a dummy variable. Code 1 is used for companies with female directors and code 0 is used for companies have no female directors. It has an average value as many 0.44 and a standard deviation of 0.49. it shows that the gender diversity variable has a high data variation due to the average value being higher than the standard deviation value. The digital transformation variable has a maximum value as many 24, a minimum value as many 5, an average value as many 12.66, and a standard deviation value as many 3.14.

This model also included control variables, namely firm size, which has a maximum value as many 14.26, a minimum value as many 8.63, an average value as many 12.54, and a standard deviation value as many 0.98; and leverage, which has a maximum value as many 245.59, a minimum value as many -13.24, an average value as many 2.80, and a standard deviation as many 15.25.

Table 4. Model fit

Model Fit	Value	Sign.	Rule of Thumb	Notes
Average Path Coefficient (APC)	0,167	P < 0,001	P ≤ 0,05	Satisfy
Average R-Square (ARS)	0,152	P < 0,001	P ≤ 0,05	Satisfy
Average Adjusted R-Squared (AARS)	0,139	P < 0,001	P ≤ 0,05	Satisfy

Average Variance Inflation Factor (AVIF)	1,030	≤5, ideally ≤ 3,3	Satisfy
Average Full Collinearity VIF (AFVIF)	1,233	≤5, ideally ≤ 3,3	Satisfy
Tenenhaus GoF (GoF)	0,390	Small ≥ 0,1 Medium≥ 0,25 Large ≥ 0,36	Large

Model fit

Based on the model of fit indicators output that is summarized in Table 4, it can be seen that six indicators used in this study are satisfying and it can be concluded that this research model is fit because of the p-value level under 0.05 on the three indicators APC, ARS, and AARS. Based on the AVIF value and AFVIF value, this model also has no vertical collinearity problem (collinearity between exogenous variables) or lateral collinearity problem (collinearity between exogenous and endogenous variables). Another indicator, GoF, shows that the value is 0.390. It means that the predictive power of the model is categorized as large because the value is larger than 0.36.

Explanatory power

Based on the latent variable coefficients that are summarized in Table 5, the coefficient of R-Squared determination is 0.222 for the Zmijewski model. It shows that the variation of the endogenous variable (financial distress) is 22.2% explained by the exogenous variable (gender diversity), moderation variable (digital transformation), and control variable (firm size and leverage) while the remaining 77.8% can be explained by other variables outside this model. Then, the coefficient of R-Squared determination for the Grover model is 0.082. it shows that the variation of the endogenous variable (financial distress) is 8.2% explained by the exogenous variable (gender diversity), moderation variable (digital transformation), and control variable (firm size and leverage) while the remaining 91.8% can be explained by other variables outside this model.

Another indicator that can explain this model is the value of Q-Squared as many 0.531 for the Zmijewski model and 0.292 for the Grover model. Both of them are larger than 0, which shows that this model has predictive relevance. Another indicator is the effect size, which explains the individual contributions of each exogenous variable to the value of the R-squared endogenous variable. The effect size value of gender diversity is 0.016 or 1.6% for the Zmijewski model and 0.013 or 1.3% for the Grover model. It means that the absolute value of individual contributions of the gender diversity spread variable to the R-squared value of the financial distress variable is considered very weak.

Table 5. Explanatory power

		Zmijewski		Grover
R-Square		0,222		0,082
Q-Square		0,531		0,292
Effect Size				
	Variables	**Path Coefficient**	**Explanation**	**Rule of Thumb**
ZMJ	Gender	0,016	Very weak	
	DT*Gender	0,072	Weak	
	FZ	0,003	Very weak	
	LEV	0,132	Weak	≥ 0,02 weak
Grover	Gender	0,013	Very weak	≥ 0,15 medium

DT*Gender	0,012	Very weak	≥ 0,35 large
FZ	0,002	Very weak	
LEV	0,055	Weak	

The effect size value of DT*Gender at 0.072 or 7.2% for the Zmijewski model. It means that the absolute value of individual contributions of the digital transformation moderation variable to the R-squared value of the financial distress variable id considered weak from the practical point of view. Then, the effect size value of DT*Gender at 0.012 or 1.2% for the Grover model. It means that the absolute value of individual contributions of te digital transformation moderation variable to the financial distress variable is considered very weak from the practical point of view. The control variable in this model is firm size (FZ) and leverage (LEV), which have effect sizes of 0.003 and 0.132 for the Zmijewski model, respectively, which means that the absolute value of individual contributions of the firm size variable and leverage variable to the R-squared value of the financial distress variable is considered very weak and weak from the practical point of view. Then, the effect size value of the Grover model is 0.002 for the firm size variable and 0.055 for the leverage variable. It means that the absolute value of the individual contributions of the firm size variable and leverage variable to the R-squared value of the financial distress variable is considered very weak and weak, respectively, from the practical point of view.

Table 6. Path coefficients and P-values

Model	Variables	Path Coefficient	P-value	Rule of thumb	Notes
ZMJ	Gender	-0,142	0,003	P < 0,05	Accepted
	DT*Gender	0,269	<0,001	P < 0,05	Accepted
	FZ	0,044	0,195		
	Leverage	0,366	<0,001		
Grover	Gender	-0,124	0,008	P < 0,05	Accepted
	DT*Gender	0,109	0,017	P < 0,05	Accepted
	FZ	0,048	0,179		
	Leverage	0,237	<0,001		

Path coefficients and P-values

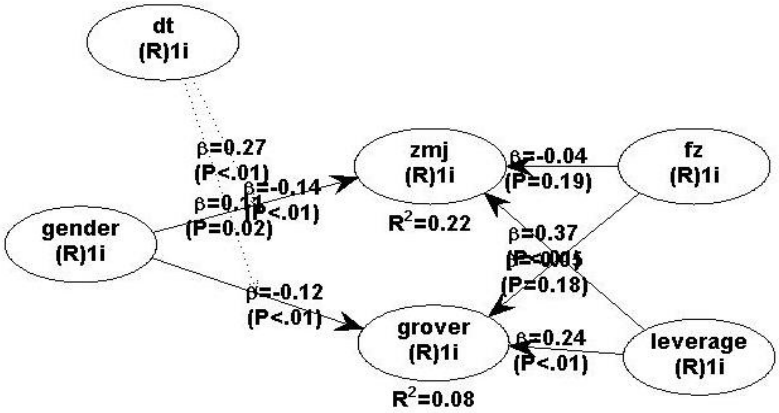
The next stage is evaluating the path coefficients and P-value values from the output summarized in Table 6. The path coefficient of the gender diversity variable for the Zmijewski model is -0.142 and significant with P = 0.003; the path coefficient of the moderating variable, which is the interaction of digital transformation with gender diversity (DT*Gender), is 0.269 and significant with P = <0.001. Then, the path coefficient of the gender diversity variable for the Grover model is -0.124 and significant with P = 0.008; the path coefficient of the moderating variable, which is the interaction of the digital transformation with gender diversity (DT*Gender), is 0.109 and significant with P = 0.017.

This model also includes control variables namely firm size, which has a path coefficient of 0.044 with P = 0.195, and leverage, which has a path coefficient of 0.366 with P = <0.001 for the Zmijewski model. For the Grover model, firm size has a path coefficient of 0.048 with P = 0.179 and leverage has a path coefficient of 0.237 with P = <0.001.

Result

Based on the path diagram in Figure 1, the gender diversity has a negative and significant effect on financial distress using Zmijewski model and Grover model. It can be seen from the path coefficient of the gender diversity (Gender), which is -0.142 with P = 0.003 < 0.05 (Zmijewski model) and -0.124 and P = 0.008 < 0.05 (Grover model). Thus, hypothesis 1 (H1) is accepted. Gender diversity negatively affects financial distress. The results of this study are in line with research conducted by Muien *et al.* (2023), Gerged *et al*. (2023), García & Herrero (2021), dan Kalbuana *et al*. (2022) who found that gender diversity has a negative effect on financial distress. This result means that the greater the number of female board of directors in the company, the less likely the company will experience financial distress. However, this study contradicts research conducted by Santen & Donker (2009) dan Salloum *et al*. (2013) who found that gender diversity has no effect on financial distress. This research is in accordance with agency theory which supports the existence of gender diversity in the board structure which will reduce conflicts and desires between managers and shareholders as agents and principals (Benkraiem et al., 2017). These results indicate that agency theory supports diversity in the board structure, such as gender diversity so that it can keep managerial policies within appropriate limits.

Figure 1. Path analysis diagram



Based on the path diagram in Figure 1, digital transformation does not mitigate the negative effect of the gender diversity on financial distress. It can be seen from the path coefficient of the interaction between digital transformation with gender diversity (DT*Gender), which is 0.268 with P = <0.001 (Zmijewski model) and 0.109 and P = 0.017 < 0.05 (Grover model). Thus, hypothesis 2 (H2) is rejected. The use of digital transformation in the company will actually weaken the influence of gender diversity on financial distress. Digital transformation has been carried out by all companies so that digital transformation becomes a commodity and does not provide a competitive advantage for the company. According to Yang *et al*. (2021), not all companies gain a competitive advantage from digital technology in their company practices. Correani *et al*. (2020) also stated that the use of digital technology is not always successful in companies. This is due to disruptions in activities, processes, and user capabilities so that the digital transformation process often fails. The results of this study are in accordance with the innovation diffusion theory first proposed by Rogers (1962).

Innovation diffusion theory states that explains how, why, and how quickly innovations or new ideas can be accepted and adopted by a particular entity or group. Conceptually, this theory identifies several elements that influence the adoption process of innovations, such as the innovation itself, communication systems, time, and social systems. The implementation of digital transformation certainly requires a short time for corporate entities. In the process, digital transformation requires a

series of stages that certainly take a lot of time so that the level of adoption of understanding from one individual to another will also be different. In this study, the company's board of directors may not be able to adopt all the stages in digital transformation so that the digital transformation variable weakens the relationship between gender diversity and financial distress.

In addition, the results of this study are also in accordance with the elements of the social system, namely the social, cultural, and structural factors of an entity can influence attitudes and behaviors towards innovation or change. Change will always happen and digital transformation will definitely be faced by all entities. Employees who are not ready for digital transformation will feel unsupported by the company because they feel they can threaten the profession or labor needs in the company because they are replaced by digital transformation.

4. Conclusion and Suggestion

The result of this study indicate that in consumer non-cyclicals companies, gender diversity has a negative effect on financial distress. It means that the greater the number of female board of directors in the company, the less likely the company will experience financial distress. Furthermore, the result of this study indicate that digital transformation is a moderating factor that weaken the influence of gender diversity on financial distress. Digital transformation is considered a commodity and does not provide a competitive advantage for the company. The adoption of digital transformation also does not always have a good effect because it is considered to disrupt the activities, processes, and capabilities of its users so that it often fails. The implementation of digital transformation also requires a very long stage and takes a long time so that the level of understanding of each individual will also be different.

The limitation of this study is that the object of this research is consumer non-cyclicals companies listed on the Indonesia Stock Exchange (IDX) and does not cover all companies listed on the Indonesia Stock Exchange (IDX), so further research can expand the research object to all company deposits listed on the Indonesia Stock Exchange (IDX) in order to obtain more comprehensive results. This study only uses one independent variable, namely gender diversity, so that in explaining the variation in the dependent variable is still very limited. Therefore, there are still other variables that have an effect in predicting financial distress. Then, the observation period used in this study is only 5 (five) years, namely 2018-2022 so that it has the opportunity to cause subjectivity in research.

Reference

Abbas, A., & Frihatni, A. A. (2023). Gender diversity and firm performances suffering from financial distress: evidence from Indonesia. *Journal of Capital Markets Studies*, *7*(1), 91–107. https://doi.org/10.1108/jcms-12-2022-0045

Akbar, S., Kharabsheh, B., Poletti-Hughes, J., & Shah, S. Z. A. (2017). Board structure and corporate risk taking in the UK financial sector. *International Review of Financial Analysis*, *50*, 101–110. https://doi.org/10.1016/j.irfa.2017.02.001

Al-Hadi, A., Hasan, M.M., Taylor, G., Hossain, M., and Richardson, G. (2017). Market Risk Disclosure and Investment Efficiency : International Evidence From The Gulf Cooperation Council Financial Firms. *Journal of International Financial Management and Accounting*, *28*(3), 349–393. https://doi.org/https://doi.org/10.1111/jifm.12063

Ali, S., Rehman, R. ur, Aslam, S., Khan, I., & Murtaza, G. (2023). Does board diversity reduce the likelihood of financial distress in the presence of a powerful Chinese CEO? *Management Decision*, *61*(6), 1798–1815. https://doi.org/10.1108/MD-01-2022-0007

Ashraf, S., Félix, E. G. S., & Serrasqueiro, Z. (2022). Does board committee independence affect financial

distress likelihood? A comparison of China with the UK. *Asia Pacific Journal of Management*, *39*(2), 723–761. https://doi.org/10.1007/s10490-020-09747-5

Baron, Reuben M. & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research : Conceptual , Strategic , and Statistical Considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/http://dx.doi.org/10.1037//0022-3514.51.6.1173

Benkraiem, R., Hamrouni, A., Lakhal, F., & Toumi, N. (2017). Board independence, gender diversity and CEO compensation. *Corporate Governance (Bingley)*, *17*(5), 845–860. https://doi.org/10.1108/CG-02-2017-0027

Bernile, G., Bhagwat, V., & Yonker, S. (2018). Board diversity, firm risk, and corporate policies. *Journal of Financial Economics*, *127*(3), 588–612. https://doi.org/10.1016/j.jfineco.2017.12.009

Bhaskar, L.S., Krishnan, G.V., dan Yu, W. (2017). Debt Covenant Violations, Firm Financial Distress, and Auditor Actions. *Contemporary Accounting Research*, *34*(1), 186–215. https://doi.org/https://doi.org/10.1111/1911-3846.12241

Boubaker, S., Cellier, A., Manita, R., & Saeed, A. (2020). Does corporate social responsibility reduce financial distress risk? *Economic Modelling*, *91*, 835–851. https://doi.org/10.1016/j.econmod.2020.05.012

C. Zhang and Y. Wang. (2023). Is enterprise digital transformation beneficial to shareholders? Insights from the cost of equity capital. *International Review of Financial Analysis*, 103058. https://doi.org/10.1016/j.irfa.2024.103104

Cardoso, G. F. dan Peixoto, F. M. (2019). Board Structure and Financial Distress in Brazilian Firms. *International Journal of Managerial Finance*, *15*(5), 813–828. https://doi.org/https://doi.org/10.1108/IJMF-12-2017-0283

Chhillar, P., & Lellapalli, R. V. (2022). Role of Earnings Management and Capital Structure in Signalling Early Stage of Financial Distress: A Firm Life Cycle Perspective. *Cogent Economics and Finance*, *10*(1), 1–22. https://doi.org/10.1080/23322039.2022.2106634

Correani, A., Massis, A. De, Frattini, F., Petruzzelli, A. M., & Natalicchio, A. (2020). *Implementing a Digital Strategy:* 1–20. https://doi.org/10.1177/0008125620934864

Cui, Lin. & Wang, Y. (2023). Can Corporate Digital Transformation Alleviate Financial Distress? *Finance Research Letters*, *55*(B). https://doi.org/https://doi.org/10.1016/j.frl.2023.103983

Dirman, A. (2020). Financial Distress: The Impacts of Profitability, Liquidity, Leverage, Firm Size, and Free Cash Flow. *International Journal of Business, Economics and Law*, *22*(1), 17–25.

Eisenhardt, K. M., & Eisenhardt, K. M. (2018). Linked references are available on JSTOR for this article : Agency Theory : An Assessment and Review. *Academy of Management*, *14*(1), 57–74.

Francoeur, C., Labelle, R., & Sinclair-Desgagné, B. (2008). Gender diversity in corporate governance and top management. *Journal of Business Ethics*, *81*(1), 83–95. https://doi.org/10.1007/s10551-007-9482-5

García, C. J., & Herrero, B. (2021a). Female directors, capital structure, and financial distress. *Journal of Business Research*, *136*(July), 592–601. https://doi.org/10.1016/j.jbusres.2021.07.061

García, C. J., & Herrero, B. (2021b). Female Directors, Capital Structure, and Financial Distress. *Journal of Business Research*, *136*(November 2020), 592–601. https://doi.org/10.1016/j.jbusres.2021.07.061

Gerged, A. M., Yao, S., & Albitar, K. (2023). Board composition, ownership structure and financial distress: insights from UK FTSE 350. *Corporate Governance (Bingley)*, *23*(3), 628–649. https://doi.org/10.1108/CG-02-2022-0069

Ghozali, I. (2012). *Aplikasi Analisis Multivariate dengan Program IBM SPSS*. Universitas Diponegoro.

Giarto, R. Vi. D. & F. (2020). The Effect of Leverage , Sales Growth , Cash Flow on Financial Distress with Corporate Governance as a Moderating Variable. *Accounting Analysis Journal*, *9*(1), 15–21. https://doi.org/10.15294/aaj.v9i1.31022

Habib, A. M. (2023). Do business strategies and environmental, social, and governance (ESG) performance mitigate the likelihood of financial distress? A multiple mediation model. *Heliyon*,

9(7), e17847. https://doi.org/10.1016/j.heliyon.2023.e17847

Harjoto, M. A., Laksmana, I., & Yang, Y. wen. (2018). Board diversity and corporate investment oversight. *Journal of Business Research*, *90*(May 2018), 40–47. https://doi.org/10.1016/j.jbusres.2018.04.033

He, Y., Xu, L., & McIver, R. P. (2019). How Does Political Connection Affect Firm Financial Distress and Resolution in China? *Applied Economics*, *51*(26), 2770–2792. https://doi.org/10.1080/00036846.2018.1558358

Hermawan, A., Septiawan, B., & I, A. T. (2021). *Dominant Factors Affecting Financial Distress : A Study on Miscellaneous Industry Sectors Listed in the Stock Exchange Years of 2014 to 2019 in Indonesia*. *22*(185), 64–69. https://doi.org/10.47750/QAS/22.185.09

Hu, Y., Che, D., Wu, F., & Chang, X. (2023). Corporate maturity mismatch and enterprise digital transformation: Evidence from China. *Finance Research Letters*, *53*(January), 103677. https://doi.org/10.1016/j.frl.2023.103677

Hua, Z., & Yu, Y. (2023). Digital transformation and the impact of local tournament incentives: Evidence from publicly listed companies in China. *Finance Research Letters*, *57*(May), 104204. https://doi.org/10.1016/j.frl.2023.104204

Isayas, Y. N. (2021). Financial Distress and Its Determinants: Evidence from Insurance Companies in Ethiopia. *Cogent Business and Management*, *8*(1), 1–16. https://doi.org/10.1080/23311975.2021.1951110

Jensen, M. C., & Meckling, W. H. (1976). Theory of The Firm : Managerial Behavior, Agency Costs, and Ownership Structure. *Journal of Financial Economics*, *3*, 305–360. https://doi.org/10.1177/0018726718812602

Kalbuana, N., Taqi, M., Uzliawati, L., & Ramdhani, D. (2022). The Effect of Profitability, Board Size, Woman on Boards, and Political Connection on Financial Distress Conditions. *Cogent Business and Management*, *9*(1). https://doi.org/10.1080/23311975.2022.2142997

Kariani, Ni Putu Eka Kartika. & Budiasih, I. G. A. N. (2017). Firm Size Sebagai Pemoderasi Pengaruh Likuiditas, Leverage, dan Operating Capacity Pada Financial Distress. *E-Jurnal Akuntansi Universitas Udayana*, *20*(3), 2187–2216.

Keay, A. (2017). Stewardship theory: is board accountability necessary? *International Journal of Law and Management*, *59*(6), 1292–1314. https://doi.org/10.1108/IJLMA-11-2016-0118

Kushermanto, A., Alisa, I. R., Ulum, A. S., & Zulaikha, . (2023). COVID-19 Spread and Financial Distress: Does Managerial Ability Matter? *Jurnal Dinamika Akuntansi Dan Bisnis*, *10*(2), 249–264. https://doi.org/10.24815/jdab.v10i2.28905

Larasati, H., & Wahyudin, A. (2019). Accounting Analysis Journal The Effect of Liquidity, Leverage, and Operating Capacity on Financial Distress with Managerial Ownership as a Moderating Variable ARTICLE INFO ABSTRACT. *Accounting Analysis Journal*, *8*(3), 214–220. https://doi.org/10.15294/aaj.v8i3.30176

Lee, K. W., & Thong, T. Y. (2023). Board gender diversity, firm performance and corporate financial distress risk: international evidence from tourism industry. *Equality, Diversity and Inclusion*, *42*(4), 530–550. https://doi.org/10.1108/EDI-11-2021-0283

Li, Zhun., Li, Qiang., & Zeng, Y. (2020). Contraction Flexibility, Operating Leverage, and Financial Leverage. *Journal of Management Science and Engineering*, *5*(1), 43–56. https://doi.org/10.1016/j.jmse.2020.02.002

Li, Z., Crook, J., Andreeva, G., & Tang, Y. (2021). Predicting the risk of financial distress using corporate governance measures. *Pacific Basin Finance Journal*, *68*(February 2020), 101334. https://doi.org/10.1016/j.pacfin.2020.101334

Liu, Bai., Ju, Tao., Bai, Min., & Yu, C.-F. (2021). Imitative Innovation and Financial Distress Risk: The Moderating Role of Executive Foreign Experience. *International Review of Economics and Finance*, *71*, 526–548. https://doi.org/10.1016/j.iref.2020.09.021

luqman, R., Ul hassan, M., Tabasum, S., Khakwani, M. S., & Irshad, S. (2018). Probability of Financial Distress and Proposed Adoption of Corporate Governance Structures: Evidence from Pakistan.

Cogent Business and Management, *5*(1), 1–14. https://doi.org/10.1080/23311975.2018.1492869

Luu Thu, Q. (2023). Impact of Earning Management and Business Strategy on Financial Distress Risk of Vietnamese Companies. *Cogent Economics and Finance*, *11*(1), 1–21. https://doi.org/10.1080/23322039.2023.2183657

Manzaneque, M., Priego, A. M., & Merino, E. (2016). Corporate Governance Effect on Financial Distress Likelihood: Evidence from Spain. *Revista de Contabilidad-Spanish Accounting Review*, *19*(1), 111–121. https://doi.org/10.1016/j.rcsar.2015.04.001

Mariano, S. S. G., Izadi, J., & Pratt, M. (2020). Can we predict the likelihood of financial distress in companies from their corporate governance and borrowing? *International Journal of Accounting and Information Management*, *29*(2), 305–323. https://doi.org/10.1108/IJAIM-08-2020-0130

McGuinness, P. B., Vieito, J. P., & Wang, M. (2017). The role of board gender and foreign ownership in the CSR performance of Chinese listed firms. *Journal of Corporate Finance*, *42*, 75–99. https://doi.org/10.1016/j.jcorpfin.2016.11.001

Mu, W., Liu, K., Tao, Y., & Ye, Y. (2023). Digital finance and corporate ESG. *Finance Research Letters*, *51*(October 2022), 103426. https://doi.org/10.1016/j.frl.2022.103426

Muien, H. M., Nordin, S., & Badru, B. O. (2023). Gender diversity and corporate financial distress in the Pakistan stock market: the interacting effect of family-controlled companies. *Journal of Family Business Management*. https://doi.org/10.1108/JFBM-03-2023-0035

Nuswantara, D. A., Fachruzzaman, D. A., Prameswari, R. D., Suyanto, R. D., Rusdiyanto, R., & Hendrati, I. M. (2023). The Role of Political Connection to Moderate Board Size, Woman on Boards on Financial Distress. *Cogent Business and Management*, *10*(1), 1–27. https://doi.org/10.1080/23311975.2022.2156704

Paule-Vianez, J., Arias-Nicolás, J. P., & Coca-Pérez, J. L. (2019). Bayesian networks to predict financial distress in spanish banking. *Recta*, *20*(2), 131–152. https://doi.org/10.24309/recta.2019.20.2.02

Platt, HD, & Platt, M. (2006). Memahami Perbedaan Antara Kesulitan Keuangan dan Kebangkrutan. *Tinjauan Ekonomi Terapan*, *2*(2), 141–157.

Rogers, E. M. (1962). *Diffusion of Innovation* (First Edit). Free Press.

Salloum, C. C., Azoury, N. M., & Azzi, T. M. (2013). Board of directors' effects on financial distress evidence of family owned businesses in Lebanon. *International Entrepreneurship and Management Journal*, *9*(1), 59–75. https://doi.org/10.1007/s11365-011-0209-9

Santen, B., & Donker, H. (2009). Board diversity in the perspective of financial distress: Empirical evidence from the Netherlands. *Corporate Board: Role, Duties and Composition*, *5*(2), 23–35. https://doi.org/10.22495/cbv5i2art3

Sarstedt, Marko, Christian M. Ringle, & J. F. H. (2021). *Partial Least Squares Structural Equation Modeling*. Springer International Publishing. https://doi.org/https://doi.org/10.1007/978-3-319-05542-8_15-2.

Sayidah, N., Assagaf, A., & Faiz, Z. (2020a). Does earning management affect financial distress? Evidence from state-owned enterprises in Indonesia. *Cogent Business and Management*, *7*(1), 0–14. https://doi.org/10.1080/23311975.2020.1832826

Sayidah, N., Assagaf, A., & Faiz, Z. (2020b). Does Earning Management Affect Financial Distress? Evidence from State-Owned Enterprises in Indonesia. *Cogent Business and Management*, *7*(1), 1–14. https://doi.org/10.1080/23311975.2020.1832826

Sekaran, Uma, and R. B. (2016). *Metode Penelitian Untuk Bisnis* (6th ed.). Salemba Empat.

Shahwan, T. M., & Habib, A. M. (2020). Does the efficiency of corporate governance and intellectual capital affect a firm's financial distress? Evidence from Egypt. *Journal of Intellectual Capital*, *21*(3), 403–430. https://doi.org/10.1108/JIC-06-2019-0143

Sudaryanto, S., Courvisanos, J., Dewi, I. R., Rusdiyanto, R., & Yuaris, J. R. (2022). Determinants of purchase intention during COVID-19: A case study of skincare products in East Java. *Innovative Marketing*, *18*(1), 181–194. https://doi.org/10.21511/im.18(1).2022.15

Sudiyatno, B., Sudarsi, S., Rijanti, T., & Yunianto, A. (2022). Corporate Governance and Financial Distress in the Indonesia Banking Sector: An Empirical Study. *Montenegrin Journal of Economics*,

18(4), 107–116. https://doi.org/10.14254/1800-5845/2022.18-4.10

Talavera, O., Yin, S., & Zhang, M. (2018). Age diversity, directors' personal values, and bank performance. *International Review of Financial Analysis*, *55*(January 2017), 60–79. https://doi.org/10.1016/j.irfa.2017.10.007

Tang, D. (2021). What Is Digital Transformation? *Edpacs*, *64*(1), 9–13. https://doi.org/10.1080/07366981.2020.1847813

Utami, Inggriyani Wilda & Kartika, T. P. D. (2019). Determinants of Financial Distress in Property and Real Estate Companies. *The Indonesian Accounting Review*, *9*(1), 109–120. https://doi.org/10.14414/tiar.v9i1.1705

Whitaker, R. B. (1999). The Early Stages of Financial Distress. *Journal of Economics and Finance*, *23*, 123–133.

Wu, F., H. Hu, H. Lin, and X. R. (2021). Enterprise Digital Transformation and Capital Market Performance: Empirical Evidence from Stock Liquidity. *Journal of Management World*, *37*(7), 130–144.

Wu, K., Fu, Y., & Kong, D. (2022). Does the digital transformation of enterprises affect stock price crash risk? *Finance Research Letters*, *48*(March), 102888. https://doi.org/10.1016/j.frl.2022.102888

Yang, M., Fu, M., & Zhang, Z. (2021). Technological Forecasting & Social Change The adoption of digital technologies in supply chains : Drivers , process and impact. *Technological Forecasting & Social Change*, *169*(May 2020), 120795. https://doi.org/10.1016/j.techfore.2021.120795

Yao, S. (2021). "Who Should Be the Next CEO?" Desirable Successor Characteristics in Recovery from Financial Distress. *Emerging Markets Finance and Trade*, *57*(15), 4461–4472. https://doi.org/10.1080/1540496X.2020.1828857

Zhao, X., Huang, Q., Zhang, H., & Zhao, L. (2023). Can Digital Transformation in Manufacturing Enterprises Mitigate Financial Distress? *Technology Analysis and Strategic Management*, 1–17. https://doi.org/10.1080/09537325.2023.2290161