

The Impact of CEO Attributes on Financial Distress: Does Firm Life Cycle Matter?

Nabilla Dwi Hartanti*, Atika Atika, Ari Nurul Fatimah

Akuntansi/ Fakultas Ekonomi, Universitas Tidar

*nabilla.dwi.hartanti@students.untidar.ac.id

ABSTRACT

This study aims to examine the impact of CEO attributes (remuneration, gender, and education) on financial distress, with the firm life cycle as a moderating variable, among Indonesian property and real estate companies during the 2020–2024 period. This study employed a quantitative research approach with a causal design, using secondary data obtained from annual reports. This study used a purposive sampling technique, resulting in 233 sample observations. Data analysis was conducted using multiple linear regression analysis, Moderated Regression Analysis, and split-sample. The findings show that CEO remuneration has a negative impact on financial distress, indicating that higher CEO remuneration can reduce the likelihood of financial distress. Furthermore, CEO education has a negative impact on financial distress at the marginal level, while CEO gender does not significantly impact financial distress. Other findings reveal that CEO remuneration is more effective in reducing financial distress at the mature stage of the firm life cycle. In addition, female CEOs are associated with lower financial distress at the decline stage, whereas higher CEO education minimizes financial distress at the growth stage. These findings indicate that CEO attributes have different roles in reducing financial distress across the firm life cycle

Keywords: CEO attributes, financial distress, firm life cycle

Pengaruh Karakteristik CEO terhadap Kesulitan Keuangan: Apakah Siklus Hidup Perusahaan Memiliki Peran?

ABSTRAK

Penelitian ini bertujuan untuk mengkaji dampak atribut CEO (remunerasi, jenis kelamin, dan pendidikan) terhadap kesulitan keuangan, dengan siklus hidup perusahaan sebagai variabel moderator, di kalangan perusahaan properti dan real estat Indonesia selama periode 2020–2024. Penelitian ini menggunakan pendekatan penelitian kuantitatif dengan desain kausal, memanfaatkan data sekunder yang diperoleh dari laporan tahunan. Penelitian ini menerapkan teknik pengambilan sampel purposif, yang menghasilkan 233 pengamatan sampel. Analisis data dilakukan menggunakan analisis regresi linier berganda, Analisis Regresi Moderasi, dan split sample. Temuan menunjukkan bahwa remunerasi CEO memiliki dampak negatif terhadap kesulitan keuangan, yang mengindikasikan bahwa remunerasi CEO yang lebih tinggi dapat mengurangi kemungkinan terjadinya kesulitan keuangan. Selain itu, tingkat pendidikan CEO memiliki dampak negatif terhadap kesulitan keuangan pada tingkat marjinal, sedangkan jenis kelamin CEO tidak berdampak signifikan terhadap kesulitan keuangan. Temuan lain mengungkapkan bahwa remunerasi CEO lebih efektif dalam mengurangi kesulitan keuangan pada tahap matang dalam siklus hidup perusahaan. Selain itu, CEO perempuan dikaitkan dengan tingkat kesulitan keuangan yang lebih rendah pada tahap penurunan, sedangkan tingkat pendidikan CEO yang lebih tinggi meminimalkan

kesulitan keuangan pada tahap pertumbuhan. Temuan ini menunjukkan bahwa atribut CEO memiliki peran yang berbeda-beda dalam mengurangi kesulitan keuangan sepanjang siklus hidup Perusahaan

Kata Kunci: karakteristik CEO; kesulitan keuangan; siklus hidup perusahaan

INTRODUCTION

The increasingly competitive business environment requires companies to maintain financial stability in order to ensure their business continuity. A company's inability to manage economic conditions and funding needs can lead to financial distress (Fany, 2022). Financial distress is a condition of declining financial performance prior to bankruptcy, characterized by a company's inability to meet its financial obligations (Al-hadi et al., 2019). This condition is a critical concern because it can affect both corporate sustainability and the stability of the economic sector.

The property and real estate sector is one of the strategic sectors in the Indonesian economy. According to data from Statistics Indonesia (Badan Pusat Statistik, 2024), this sector contributed 12,44% to Indonesia's Gross Domestic Product (GDP). This contribution demonstrates the important role of the property and real estate sector in supporting national economic growth. The sector's contribution to national GDP in 2024 is presented in Figure 1 below.

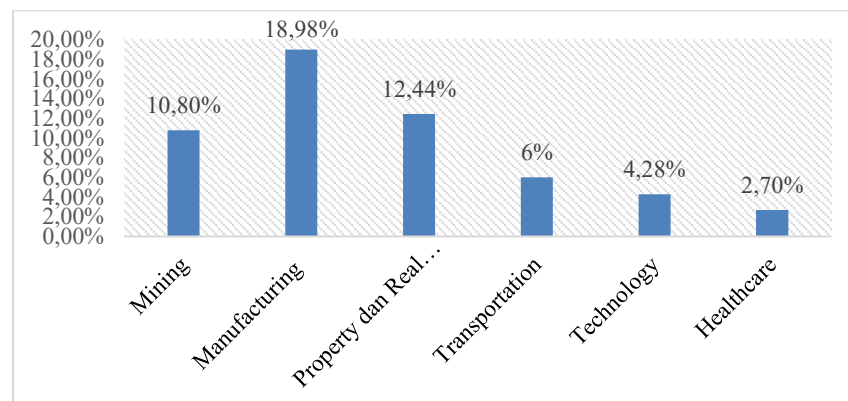


Figure 1. Contribution of Economic Sectors to the National Economy in 2024

Source: Statistics Indonesia (2024)

On the other hand, the property and real estate sector also faces a high risk of financial distress. This condition is influenced by the industry's capital intensive nature, long business cycles, and reliance on external financing (Jaya, 2020). According to data from the Indonesia Stock Exchange in 2024, the property and real estate sector recorded the highest number of Debt Payment Obligation Suspension (PKPU) cases, involving seven companies. These companies include PT Sarawati Griya Lestari Tbk (Nabhani, 2024), PT Hanson International Tbk (Sugianto, 2025), PT PP Properti Tbk (Pratiwi, 2025), PT Cowell Development Tbk (Sidik, 2025), PT Intiland Development Tbk (Kembaren, 2024), PT Bakrieland Development Tbk (Gilang, 2024), and PT Armadian Karyatama Tbk (Susanto, 2025). The high number of PKPU cases indicates the presence of financial distress among property and real estate companies. The distribution of companies undergoing PKPU by sector is presented on Figure 2 below.

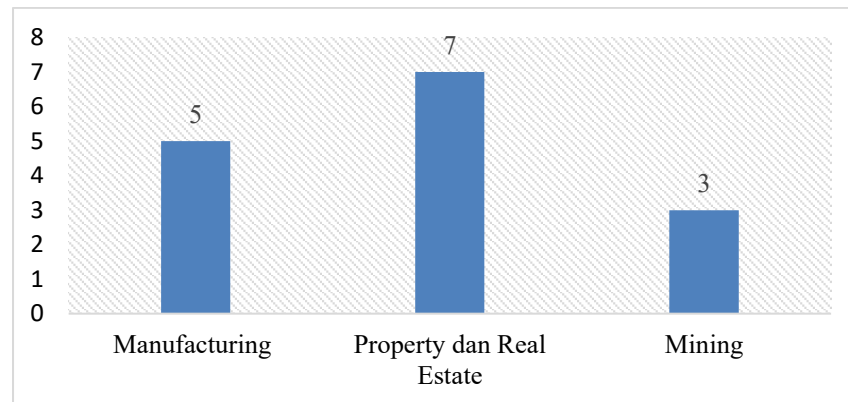


Figure 2. Distribution of Companies Undergoing PKPU by Sector in 2024

Source: Indonesia Stock Exchange (2024)

Financial distress can be influenced by both internal and external factors. Internal factors include poor managerial decision-making, high debt levels, and weak financial management (Helmi, 2019). External factors, on the other hand, include economic conditions, regularity changes, and market instability. Companies facing a financial crisis struggle to meet their obligations; if a company experiences persistent financial distress, it risks going bankrupt (Rustiyaningrum, et. al, 2024). According to the Upper Echelons Theory, characteristics of top management influence a firm's strategic decisions, which in turn affect corporate performance, including the risk of financial distress (Hambrick & Mason, 1984). In this context, CEO attributes such as compensation, gender, and education are considered to influence a firm's risk of financial distress.

In addition to CEO attributes, the firm life cycle is also expected to influence financial distress. Each stage of the firm life cycle is characterized by distinct cash flow patterns, risk levels, and financing needs (Dickinson, 2011). Firms in the introduction stage tend to experience limited cash flows and high uncertainty. In the growth stage, firms experience increased operational activity and require substantial funding for expansion (Jansen et al., 2023; Kallunki & Silvola, 2008). Meanwhile, firms in the mature stage generally have relatively stable cash flows (Habib & Hasan, 2019), whereas firms in the decline stage face deteriorating operational performance that may increase the risk of financial distress (Ehsani & Osiyevskyy, 2023). Therefore, the firm life cycle is hypothesized to moderate the relationship between CEO attributes and corporate financial distress.

Based on existing phenomena and prior research, this study aims to examine the effect of CEO attributes on financial distress, with the firm life cycle serving as a moderating variable, in property and real estate companies listed on the Indonesia Stock Exchange during 2020-2024 period. This study builds upon the research conducted by Chatterjee et al. (2023) by incorporating additional variables, namely CEO gender and education. The findings of this study are expected to provide insights into the factors influencing financial distress and to serve as a basis for consideration for both investors and companies in their decision-making processes.

METHODOLOGY

This study employs a quantitative approach with a causal research design. Causal research aims to examine the cause-and-effect relationships between independent and dependent variables. The subjects of this study are property and real estate companies

listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. The population consists of 92 property and real estate companies listed on the Indonesia Stock Exchange.

The sampling technique used in this study is purposive sampling, which involves selecting samples based on specific criteria (Creswell & Creswell, 2023). The criteria for the purposive sampling are presented in Table 1 below.

Table 1. Sample Selection Process

Sample Criteria	Number of Companies
Property and real estate companies listed on the Indonesia Stock Exchange (IDX)	92
Property and real estate companies not consistently listed on the IDX during 2020–2024	(22)
Property and real estate companies that did not consistently publish annual reports on the IDX or their official websites during 2020–2024	(16)
Companies with incomplete data related to the research variables	(6)
Number of companies that meet the criteria	48
Number of observation periods	5 Years
Total number of observations	240

The dependent variable in this study is financial distress. The independent variables include CEO remuneration, CEO gender, and CEO education. Meanwhile, firm life cycle is used as a moderating variable, while leverage and firm size are included as control variables. The description and measurement of each variable are presented in Table 1. The data analysis techniques used in this study consist of descriptive statistical analysis and regression analysis using the Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistics are employed to provide an overview of the data through minimum, maximum, mean, and standard deviation values (Ghozali, 2018). Analisis regresi dalam penelitian ini menggunakan regresi linier berganda dan Moderated Regression Analysis (MRA), as well as split sample analysis based on firm life cycle stages.

Classical assumption tests are conducted to ensure the validity of the regression model, including tests for normality, multicollinearity, heteroscedasticity, and autocorrelation. The normality test is performed using the Kolmogorov–Smirnov test, where a significance value greater than 0.05 indicates normally distributed data. The multicollinearity test is assessed using tolerance values and the Variance Inflation Factor (VIF). The model is considered free from multicollinearity if the tolerance value is $> 0,10$ and $VIF < 10$ (Ghozali, 2018). The heteroscedasticity test is conducted using the Spearman test, where a significance value $> 0,05$ indicates the absence of heteroscedasticity. Furthermore, the autocorrelation test is performed using the Durbin–Watson test (Ghozali, 2018).

Hypothesis testing is conducted using the F-test, coefficient of determination (Adjusted R²), and t-test. The F-test is used to assess the overall model fit, while the coefficient of determination measures the explanatory power of the independent variables on the dependent variable. The t-test is used to examine the partial effect of each independent variable on the dependent variable (Ghozali, 2018).

The multiple linear regression model used in this study is as follows:

$$FD = \beta_0 + \beta_1 CR_{it} + \beta_2 CG_{it} + \beta_3 CE_{it} + \beta_4 LEV_{it} + \beta_5 FS_{it} + \varepsilon_{it} \dots\dots\dots (1)$$

The moderated regression analysis model used in this study is as follows:

$$FD = \beta_0 + \beta_1 CR_{it} + \beta_2 CG_{it} + \beta_3 CE_{it} + \beta_4 FLC_{it} + \beta_5 CR * FLC_{it} + \beta_6 CG * FLC_{it} + \beta_7 CE * FLC_{it} + \beta_8 LEV_{it} + \beta_9 FS_{it} + \varepsilon_{it} \dots\dots\dots (2)$$

Description :

FD	=	Financial distress
β_0	=	Constant
$\beta_1 CR_{it}$	=	Coefficient of CEO remuneration
$\beta_2 CG_{it}$	=	Coefficient of CEO gender
$\beta_3 CE_{it}$	=	Coefficient of CEO education
$\beta_4 FLC_{it}$	=	Coefficient of firm life cycle
$\beta_5 CR * FLC_{it}$	=	Coefficient of the interaction between CEO remuneration and firm life cycle
$\beta_6 CG * FLC_{it}$	=	Coefficient of the interaction between CEO gender and firm life cycle
$\beta_7 CE * FLC_{it}$	=	Coefficient of the interaction between CEO education and firm life cycle
$\beta_8 LEV_{it}$	=	Coefficient of leverage
$\beta_9 FS_{it}$	=	Coefficient of firm size
ε	=	Error term

Table 2. Description and Measurement of Variables

Variables	Description	Measurement
Dependen Variable		
Financial Distress	Financial distress refers to a company's financial condition characterized by its inability to meet short term obligations and other liabilities (Gwalani et al., 2025).	Altman Z-Score FD = 6,56X ₁ +3,26X ₂ +6,72X ₃ +1,05X ₄ (Islami, 2018; Nurdiana & Khusnah, 2023)
Independent Variable		
CEO Remuneration	CEO remuneration refers to compensation provided to the CEO to improve firm performance and align	CR= LN (Total CEO Remuneration) (Al-jabri, 2025; Chatterjee et al., 2023; Kirana, 2021).

	management interests with shareholders (Kaya & Rosinsky, 2025).	
CEO Gender	CEO gender represents demographic attributes indicating the CEO's gender as an individual characteristic that may influence managerial decision-making (Faccio, 2016).	Dummy Variable 1 if the CEO is female, and 0 otherwise (Nurdiana & Khusnah, 2023; Radinda, 2023)
CEO Education	CEO education refers to the CEO's educational background reflecting formal education level and relevance of field of study in corporate decision-making (Setiawan & Gestanti, 2018).	Dummy Variable 1 if the CEO holds a postgraduate degree in finance, accounting, or management; 0 otherwise (Zaidi et al., 2021).
Firm Life Cycle	Firm life cycle reflects stages of corporate development based on operational, investing, and financing cash flow patterns (Dickinson, 2011).	Dummy Variable 1 for firms in the mature stage and 0 for other stages. Additionally, split-sample analysis is conducted based on all life cycle stages: introduction, growth, mature, and decline (Alzoubi, 2019; Chatterjee et al., 2023)
Leverage	Leverage represents the extent to which a company uses debt to finance its assets (Yulastuti & Nurhayati, 2023).	$DAR = \frac{\text{Total Liabilities}}{\text{Total assets}}$ (Gusmao et al., 2026)
Firm Size	Firm size reflects the scale of a company as measured by its total assets (Rochendi & Nuryaman, 2022).	$UP = LN(\text{Total assets})$ (Rahayu & Sopian, 2019)

RESULTS AN DISCUSSION

Descriptive statistics are used to describe the characteristics of the research data through the mean, minimum, maximum, and standard deviation (Ghozali, 2018). The results of the descriptive statistical analysis are presented in Table 3 below

Table 3. Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Deviaton
Financial Distress	233	-1,700	17,970	5,411	3,049
CEO Remuneration (LN)	233	18,990	23,360	21,134	0,895
CEO Remunertaion (in billions)	233	0,177	13,979	2,284	2,352
CEO Gender	233	0,000	1,000	0,115	0,320
CEO Education	233	0,000	1,000	0,309	0,463
Firm Life Cycle	233	0,000	1,000	0,442	0,497
Leverage	233	0,098	0,880	0,400	0,183
Firm Size (LN)	233	24,000	31,960	28,864	1,773
Firm size (in trillions)	233	0,026	76,023	10,001	13,842

Table 3 shows that the sample size (N) in this study consists of 240 observations of property and real estate companies listed on the Indonesia Stock Exchange (IDX) for the period 2020–2024. Outlier treatment was conducted using winsorization to minimize the influence of extreme values on the regression analysis.

The financial distress variable has a minimum value of -1,700 and a maximum value of 17,970, with a mean of 5,411, indicating that, in general, the sample firms are in a relatively healthy financial condition. The CEO remuneration variable has a minimum value of 0,177 billions and a maximum value of 13,979 billions, with an average of 2,284 billions, indicating that CEO remuneration across the sample firms is at a moderate level. The CEO gender variable has a minimum value of 0,000 and a maximum value of 1,000, with a mean of 0,115, indicating that only about 11.5% of firms are led by female CEOs, suggesting that corporate leadership is still predominantly male. The CEO education variable has a minimum value of 0,000 and a maximum value of 1,000, with a mean of 0,309, indicating that approximately 30.9% of CEOs hold a postgraduate degree in economics, finance, accounting, or management.

The firm life cycle variable has a minimum value of 0,000 and a maximum value of 1,000, with a mean value of 0,442, indicating that approximately 44.2% of firms are in the mature stage, while the rest are in other stages. The leverage variable has a minimum value of 0,098 and a maximum value of 0,880, with a mean of 0,400, indicating that, on average, firms finance approximately 40% of their assets through debt. The firm size variable has a minimum value of 0,026 trillions and a maximum value of 76,023 trillions, with a mean of 10,001trillions, indicating variation in firm size across the sample.

The normality test aims to determine whether the residuals in the regression model are normally distributed. In this study, the normality test is conducted using Kolmogorov-Smirnov test, where a significance value $> 0,05$ indicates that the data are normally distributed (Ghozali, 2018). The results of the normality test are presented in Table 4 below:

Table 4. Normality Test Results

	Model 1	Model 2
<i>Asymp.Sig. (2-tailed)</i>	0,200	0,200

Based on Table 4, both the multiple linier regression model and the moderated regression model have a significance values 0,200, which is $0,200 > 0,05$. Therefore, it can be concluded that the residuals of both models are normally distributed.

The multicollinearity test aims to determine whether there is a correlation among the independent variables in the regression model. This test is conducted using tolerance values and the Variance Inflation Factor (VIF), where the regression model is considered free from multicollinearity if the tolerance value is $> 0,10$ and $VIF < 10$ (Ghozali, 2018). The results of the multicollinearity test are presented in Table 5 below.

Table 5. Multicollinearity Test Results

Variables	Model 1		Model 2	
	VIF	Tolerance	VIF	Tolerance
CR	0,752	1,329	0,695	1,440
CG	0,834	1,199	0,528	1,894
CE	0,976	1,024	0,934	1,071
FLC			0,605	1,653

CR* FLC			0,876	1,141
CG* FLC			0,547	1,827
CE* FLC			0,645	1,551
LEV	0,941	1,062	0,928	1,077
FS	0,676	1,478	0,660	1,516

Description: CR= CEO Remuneration; CG= CEO Gender; CE= CEO Education; LEV= Leverage; FS= Firm Size; FLC= Firm Life Cycle CR*FLC= CEO Remuneration* Firm Life Cycle; CG* FLC= CEO Gender* Firm Life Cycle; CE* FLC= CEO Education* Firm Life Cycle

The results of the multicollinearity test in Table 5 show that the CEO remuneration variable has a tolerance value of 0,752 and a VIF of 1,329 in Model 1, and a tolerance value of 0,695 and a VIF of 1,440 in Model 2. The CEO gender variable has a tolerance value of 0,834 and a VIF of 1,199 in Model 1, and a tolerance value of 0,528 and a VIF of 1,894 in Model 2. The CEO education variable has a tolerance value of 0,976 and a VIF of 1,024 in Model 1, and a tolerance value of 0,934 and a VIF of 1,071 in Model 2. The firm life cycle variable in Model 2 has a tolerance value of 0,605 and a VIF of 1,653. The interaction variables show that CR*FLC has a tolerance value of 0,876 and a VIF of 1,141; CG*FLC has a tolerance value of 0,547 and a VIF of 1,827; and CE*FLC has a tolerance value of 0,645 and a VIF of 1,551. Furthermore, the leverage variable has a tolerance value of 0,941 and a VIF of 1,062 in Model 1, and a tolerance value of 0,928 and a VIF of 1,077 in Model 2. The firm size variable has a tolerance value of 0,676 and a VIF of 1,478 in Model 1, and a tolerance value of 0,660 and a VIF of 1,516 in Model 2. Overall, both regression models are free from multicollinearity, as all variables have $> 0,10$ dan $VIF < 10$.

A heteroscedasticity test is conducted to examine whether there are differences in the variance of residuals across observations (Chandrarin, 2018). This study employs the Spearman test, where a significance value $> 0,05$, indicates the absence of heteroscedasticity, while a $< 0,05$ indicates the presence of heteroscedasticity. The results of the heteroscedasticity test are presented in Table 6 as follows:

Table 6. Heteroscedasticity Test Results

Variable	Sig. (2-tailed)	
	Model 1	Model 2
CR	0,584	0,576
CG	0,880	0,827
CE	0,983	0,973
FLC		0,701
CR*FLC		0,926
CG*FLC		0,979
CE*FLC		0,354
LEV	0,937	0,913
FS	0,769	0,885

The results of the heteroscedasticity test in Table 6 show that all variables in Model 1 and Model 2 have a significance values (*Sig. 2-tailed*) $> 0,05$. The CEO remuneration variable has significance values of 0,584 in Model 1 and 0,576 in Model 2. The CEO gender variable has significance values of 0,880 in Model 1 and 0,827 in Model 2. The CEO education variable has significance values of 0,983 in Model 1 and 0,973 in Model 2. The firm life cycle variable in Model 2 has a significance value of 0,701. The interaction variables also show significance values $> 0,05$, where CR*FLC has a significance value of 0,926, CG*FLC has a significance value of 0,979, and CE*FLC has a significance value of 0,354. Furthermore, the leverage variable has significance values of 0,937 in Model 1 and 0,913 in Model 2, while the firm size variable has significance values of 0,769 in Model 1 and 0,885 in Model 2. Therefore, it can be concluded that both regression models are free from heteroscedasticity.

An autocorrelation test was conducted to determine whether there is a correlation between the residual errors in period t and the residual errors in the previous period ($t-1$) in the regression model. The regression model is considered free from autocorrelation if it satisfies the criterion $du < dw < 4-du$ (Chandrarin, 2018). The results of the autocorrelation test are presented in Table 7 below.

Table 7. Autocorrelation Test Results

	Model 1	Model 2
DU	1,816	1,825
DW	1,965	1,947
4 - DU	2,184	2,175

The results of the autocorrelation test in Table 7 show that the Durbin–Watson (DW) value for Model 1 is 1,965, with a dU value of 1,816 and 4-dU value of 2,184. Meanwhile, Model 2 has a DW value of 1,947, with a dU value of 1,825 and 4-dU value 2,175. Based on the Durbin-Watson test criteria, both models satisfy the condition $dU < DW < 4-dU$, namely $1,816 < 1,965 < 2,184$ for model 1 and $1,825 < 1,947 < 2,175$ for model 2. Therefore, it can be concluded that both regression models are free from autocorrelation.

The coefficient of determination (R^2) is used to measure the extent to which the independent variables explain the dependent variable. A higher adjusted R-squared value indicates a greater ability of the independent variables to explain variations in the dependent variable (Chandrarin, 2018). The results of the coefficient of determination test are presented in Table 8 below.

Table 8. Results of the Coefficient of Determination Test

	Model 1	Model 2
R	0,785	0,805
R Square	0,617	0,648
Adjusted R-Square	0,608	0,634

The results of the data analysis in Table 8 show that the financial distress variable in the multiple linear regression model (Model 1) has an adjusted R-squared value of 0,608 or 60,8%. These results indicate that CEO remuneration, CEO gender, CEO education, leverage, and firm size explain 60.8% of the variation in financial distress, while the remaining 39,2% is explained by other variables outside the scope of this study. Meanwhile, the moderated regression model (Model 2) has an adjusted R-squared value

of 0,634 atau 63,4%. These results indicate that, after incorporating the moderating variable of firm life cycle, the explanatory power of the independent variables on financial distress increased to 63,4%, while the remaining 36,6% is explained by other variables outside the research model.

The F-test is used to assess the overall suitability of the regression model. The results of the model fit test are presented in Table 9 below.

Table 9. F-Test Result

	Model 1	Model 2
F	73,089	45,649
Sig.	0,000	0,000

Based on Table 9, the multiple linear regression model (Model 1) shows an F-statistic value of 73,089, which is greater than the critical F-value of 2,25, with a significance $0,000 < 0,05$. Meanwhile, the moderated regression model (Model 2) has an F-statistic value of 45,649, which is greater than the critical F-value of 1,98, with a significance value of $0,000 < 0,05$. These results indicate that both regression models are statistically significant and suitable for explaining the effects of the independent, control, and moderating variables, as well as the interaction effects among these variables, on the dependent variable.

Table 10. Partial Test Results

Variable	Model 1			Model 2		
	B	T	Sig.	B	t	Sig.
Konstanta	2,247	0,691	0,490	8,991	3,731	0,000
CR	0,340	2,108	0,036	0,168	1,037	0,301
CG	0,579	1,354	0,177	0,367	0,706	0,481
CE	0,526	1,921	0,056	0,570	2,105	0,036
FLC				1,081	3,455	0,001
CR*CG				0,522	1,781	0,076
CG*FLC				-1,374	-1,289	0,199
CE*FLC				-0,202	-0,366	0,715
LEV	-13,214	-18,806	0,000	-12,899	-18,858	0,000
FS	0,036	0,420	0,675	0,044	0,520	0,604

Based on Table 10, the following equations are derived for the multiple linear regression model (Model 1) and the moderated regression model (Model 2):

$$Y = 2,247 + 0,340CR + 0,579CG + 0,526CE - 13,214LEV + 0,036FS + \varepsilon \dots\dots\dots(3)$$

$$Y = 8,991 + 0,168CR + 0,367CG + 0,570CE + 1,081FLC + 0,522CR*FLC - 1,374CG*FLC - 0,202CE*FLC - 12,899LEV + 0,044FS + \varepsilon \dots\dots\dots(4)$$

The results of the regression analysis in Table 10 indicate that CEO remuneration has a significant effect on financial distress, with a significance value of $0,036 < 0,05$ and a t-value of $2,108 >$ the critical t-value 1,970, thus supporting H1. The positive regression coefficient indicates that an increase in CEO remuneration can increase the Altman Z-Score and reduce financial distress. The CEO gender variable has a significance value of $0,177 > 0,05$ and a t-value of $1,354 <$ the critical t-value of 1,970, therefore, H2 is not supported. Meanwhile, the CEO education variable has a significance value of 0.056 and a t-value of 1.921, indicating that H3 is marginally supported. In the moderated regression

model, the *CRFLC* interaction variable has a significance value of 0,076 and a *t*-value of 1,781 indicating that *H4* is marginally supported. Meanwhile, the *CGFLC* and *CE*FLC* interaction variables have significance values of 0,199 and 0,715. Furthermore, the leverage variable in both models has a significance value $0,000 < 0,05$ with a negative regression coefficient, indicating that leverage has a significant effect on financial distress. In contrast, firm size does not have a significant effect because the significance values in both models are $> 0,05$.

Split-sample analysis is an analytical technique that involves dividing the research sample into specific groups to identify differences in the relationships among variables within each group (Fafchamps & Labonne, 2017). In this study, the sample was classified based on the stages of the firm life cycle, namely introduction, growth, mature, and decline. The results of the split-sample analysis are presented in Table 11 below.

Table 11. Additional Split Sample Analysis

	<i>Introduction</i>		<i>Growth</i>		<i>Mature</i>		<i>Decline</i>	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.
CR	-0,502	0,293	0,251	0,403	0,602	0,007	-0,954	0,113
CG	0,767	0,313	1,301	0,089	-0,494	0,617	2,826	0,033
CE	0,360	0,559	1,123	0,037	0,557	0,187	-0,245	0,810
LEV	-10.306	0,000	-15,424	0,000	-14,800	0,000	-11,970	0,000
UP	0,305	0,142	-0,055	0,730	-0,071	0,534	0,484	0,185

The results of the split-sample analysis indicate that the effects of CEO attributes on financial distress vary across the stages of the firm life cycle. During the introduction stage, only leverage has a significant negative effect on the Altman Z-Score, indicating that an increase in leverage tends to increase financial distress. During the growth stage, CEO education has a positive and significant effect on the Altman Z-Score, suggesting that CEOs with higher educational qualifications are better able to maintain the firm's financial stability. Meanwhile, leverage continues to have a negative and significant effect on the Altman Z-Score. In the mature stage, CEO remuneration has a positive and significant effect on the Altman Z-Score, indicating that CEO compensation contributes to more optimal decision-making and supports the company's financial stability. Meanwhile, during the decline stage, CEO gender has a positive and significant effect on the Altman Z-Score, indicating that female CEOs tend to be more cautious in managing corporate financial risks. Furthermore, leverage consistently has a negative and significant effect on the Altman Z-Score across all stages of the firm life cycle, indicating that higher leverage tends to increase the risk of financial distress.

CEO remuneration has a negative effect on financial distress, indicating that higher CEO remuneration tends to reduce the risk of financial distress. These findings support the Upper Echelons Theory, which states that the characteristics and attributes of top management influence a company's strategic decision-making (Hambrick & Mason, 1984). Higher remuneration encourages CEOs to be more responsible in maintaining the company's financial stability and performance, as remuneration reflects the CEO's strategic responsibility in managing the company. Consequently, CEOs tend to be more cautious in determining policies related to corporate financial risks. These findings are consistent with the studies conducted by Chang et al. (2021), Chatterjee et al. (2023), and Al-jabri (2025), which found that CEO remuneration plays a role in reducing financial distress.

The CEO's gender has no significant effect on financial distress, indicating that differences in CEO gender do not influence a company's likelihood of experiencing financial distress. These findings do not support the Upper Echelons Theory, which suggests that leaders' demographic characteristics may affect strategic decision-making within a company. This result may occur because corporate decision-making is generally carried out collectively, meaning that strategic decisions are not determined solely by the CEO. Furthermore, the proportion of female CEOs in the research sample is relatively low, which may limit their influence on strategic decision-making processes. Therefore, CEO gender cannot be directly associated with a company's financial distress condition. These findings are consistent with prior studies conducted by [Radinda et al. \(2023\)](#), [Rodiah and Krisnanti \(2021\)](#), which also found that CEO gender does not significantly affect financial distress.

CEO education has a negative effect on financial distress at the marginal significance level, indicating that CEOs with higher educational attainment and relevant educational backgrounds tend to reduce a company's risk of experiencing financial distress. These findings provide partial support for the Upper Echelons Theory, which argues that top management characteristics, including educational background, can influence the quality of corporate decision-making. CEOs with higher levels of education are generally considered to possess stronger analytical capabilities in assessing risks and formulating strategic corporate policies. Nevertheless, the effect remains relatively limited, as a company's success is not determined solely by formal educational qualifications but is also influenced by the CEO's experience, leadership style, and managerial competencies. These findings are consistent with prior studies conducted by [Husnun et al. \(2025\)](#) and [Muthia et al. \(2024\)](#), which found that CEO education contributes to reducing the likelihood of financial distress.

The firm life cycle moderates the relationship between CEO compensation and financial distress at the marginal significance level, indicating that the effect of CEO compensation on financial distress varies across different stages of the firm life cycle. These findings support the Upper Echelons Theory, which suggests that the effectiveness of leadership attributes in strategic decision-making is contingent upon the firm's organizational conditions. Based on the split-sample analysis, the influence of CEO compensation is more pronounced during the mature stage, as companies in this stage generally exhibit more stable financial conditions and well-established governance systems. Consequently, the CEO compensation mechanism becomes more effective in encouraging managerial performance and maintaining the company's financial stability. These findings are consistent with the study conducted by [Chatterjee et al. \(2023\)](#), which found that the effect of CEO remuneration on financial distress is stronger in firms operating in the mature stage.

The firm life cycle does not moderate the relationship between CEO gender and financial distress, indicating that differences in firm life cycle stages do not significantly strengthen or weaken the effect of CEO gender on financial distress. These findings suggest that the influence of CEO gender on financial distress is contextual and cannot be fully explained through an aggregate moderation model. However, based on the split-sample analysis, female CEOs tend to reduce the likelihood of financial distress during the decline stage because they are generally more cautious in managerial decision-making and corporate risk management ([Faisal, 2020](#)). Furthermore, firms in the decline stage commonly experience deteriorating performance and increasing financial pressure.

(Ehsani & Osiyevskyy, 2023), thereby making the cautious leadership characteristics of female CEOs more relevant in maintaining corporate stability. These findings are also supported by Withisuphakorn dan Jiraporn (2017), who found that female CEOs tend to be more conservative in corporate decision-making and risk management practices.

The firm life cycle does not moderate the relationship between CEO education and financial distress, indicating that the stage of the firm life cycle does not significantly strengthen or weaken the effect of CEO education on financial distress. These findings suggest that the influence of CEO education on financial distress tends to vary across different stages of the firm life cycle. Based on the split-sample analysis, CEO education plays a role in reducing financial distress during the growth stage because firms at this stage generally face business expansion and greater operational complexity (Jansen et al., 2023; Kallunki & Silvola, 2008), thereby requiring stronger analytical and strategic decision-making capabilities. From the perspective of the Upper Echelons Theory, a CEO's educational background reflects cognitive abilities that may influence the quality of corporate strategic decision-making (Hambrick & Mason, 1984). Therefore, CEOs with higher educational attainment and relevant educational backgrounds tend to be better able to maintain corporate financial stability during the growth stage.

CONCLUSIONS

This study was conducted to examine the effect of CEO attributes, comprising CEO remuneration, gender, and education, on financial distress, with the firm life cycle serving as a moderating variable in property and real estate companies listed on the Indonesia Stock Exchange during the 2020–2024 period. Based on the research findings, it can be concluded that CEO remuneration has a negative effect on financial distress, while CEO gender has no significant effect on financial distress. Meanwhile, CEO education has a negative effect on financial distress at the marginal significance level. Furthermore, the firm life cycle moderates the relationship between CEO remuneration and financial distress at the marginal level, but does not moderate the relationships between CEO gender and financial distress, as well as CEO education and financial distress. The split-sample analysis indicates that the effect of CEO remuneration is more pronounced during the mature stage, the influence of CEO gender is more evident during the decline stage, and the effect of CEO education is stronger during the growth stage.

Based on these findings, companies are advised to consider CEO remuneration policies, educational background, and leadership attributes in accordance with the firm life cycle stage to minimize the risk of financial distress. In addition, future researchers are encouraged to expand the research sample and observation period, incorporate additional variables related to financial distress and CEO attributes, and apply alternative financial distress measurement models in order to obtain more comprehensive findings

REFERENSI

Al-hadi, A., Chatterjee, B., & Yaftian, A. (2019). Corporate social responsibility performance , financial distress and firm life cycle: evidence from Australia.

- Accounting & Finance*, 59(1), 961–989. <https://doi.org/10.1111/acfi.12277>
- Al-jabri, Q. (2025). CEO compensation and financial distress : the role of corporate. *South Asian Journal of Business Studies*, 7(2), 279–309. <https://doi.org/10.1108/SAJBS-11-2024-0423>
- Alzoubi, T. (2019). Firms' life cycle stage and cash holding decisions. *Academy of Accounting and Financial Studies Journal*, 23(1), 1–8.
- Badan Pusat Statistik. (2024). Distribusi Persentase Produk Domestik Bruto Atas Dasar Harga Berlaku Menurut Lapangan Usaha (persen), 2024. BPS. <https://www.bps.go.id/id/statistics-table/3/T0UxS09GQIBTbk5QWTBNdIVWUmxSMjV3Y3l0VWR6MDkjMw%3D%3D/distribusi-persentase-produk-domestik-bruto-atas-dasar-harga-berlaku-menurut-lapangan-usaha--persen---2021.html?year=2024>
- Biswas, P. K., Habib, A., & Ranasinghe, D. (2022). Firm life cycle and financial statement comparability. *Advances in Accounting*, 58, 100608. <https://doi.org/https://doi.org/10.1016/j.adiac.2022.100608>
- Brett, N., Lovelace, J., Cowen, A., & Hiller, N. (2020). Metacritiques of Upper Echelons Theory: Verdicts and Recommendations for Future Research. *Management Departement Faculty Publications*, 46(6), 1029–1062. <https://doi.org/10.1177/0149206320908640>
- Bromiley, P., & Rau, D. (2016). Social, Behavioral, and Cognitive Influences on Upper Echelons During Strategy Process: A Literature Review. *Journal of Management*, 42(1), 174–202. <https://doi.org/10.1177/0149206315617240>
- Chandrarin, G. (2018). Metode Riset Akuntansi: Pendekatan Kuantitatif (2nd ed.). Salemba Empat.
- Chatterjee, B., Jia, J., Nguyen, M., Taylor, G., & Duong, L. (2023). CEO remuneration , financial distress and firm life cycle. *Pacific-Basin Finance Journal*, 80(2), 102050. <https://doi.org/https://doi.org/10.1016/j.pacfin.2023.102050>
- Chua, M., Hisyam, N., Nassir, A., & Hisham, M. (2022). Asia Pacific Management Review Dynamic capital structure in Indonesia : Does the education and experience of CEOs matter? *Asia Pacific Management Review*, 27(1), 58–68. <https://doi.org/10.1016/j.apmr.2021.05.003>
- Costa, M., Lisboa, I., & Marzinzik, R. (2023). Is Additional CEO Remuneration a Performance Driver? DAX CEOs Evidence. *Risks*, 11(7), 1–15. <https://doi.org/10.3390/risks11070133>
- Creswell, J., & Creswell, D. (2023). Research Design Qualitative, Quantitative, and Mixed Methods Approaches (6th ed.). SAGE Publications, Inc.
- Dickinson, V. (2011). Cash Flow Patterns as a Proxy for Firm Life Cycle. *The Accounting Review*, 86(6), 1969–1994. <https://doi.org/10.2308/accr-10130>
- Ehsani, M., & Osiyevskyy, O. (2023). Firm failure and the exploration/exploitation dilemma: The role of firm life cycle. *Long Range Planning*, 56(3), 102307. <https://doi.org/https://doi.org/10.1016/j.lrp.2023.102307>
- Erlim, K. W. (2017). Pendidikan Ceo Terhadap Performa Perusahaan Di Indonesia. *Jurnal Manajemen Marantha*, 16(2), 177–186.
- Faccio, M. (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. *Journal of Corporate Finance*, 39(2), 193–209. <https://doi.org/https://doi.org/10.32670/corporaterisk.v5i2.240>
- Fafchamps, M., & Labonne, J. (2017). Using split samples to improve inference on causal effects. *Political Analysis*, 25(4), 465–482. <https://doi.org/10.1017/pan.2017.22>

- Faisal, M. (2020). Karakteristik CEO dan Enterprise Risk Management. *Jurnal Riset Akuntansi Dan Keuangan*, 8(1), 109–120. <https://doi.org/10.17509/jrak.v8i1.20741>
- Fany, A. R. (2022). Influence of Accounting Policies on Financial Distress: The Moderating Role of Corporate Governance. *E-Jurnal Akuntansi*, 35(1), 181–196. <https://doi.org/10.24843/EJA.2025.v35.i01.p18>
- Ghozali, I. (2018). Aplikasi Analisis Multivariate Dengan Program IBM SPSS 25 (Edisi 9). Badan Penerbit Universitas Diponegoro.
- Gilang, P. (2024). Pengadilan Tolak Gugatan PKPU Terhadap Bakrieland. Antara Sumbar. <https://sumbar.antaranews.com/berita/61658/pengadilan-tolak-gugatan-pkpu-terhadap-bakrieland>
- Gusmao, C., Martins, C. M., Amaral, L. B. B., Sulistyawati, A. I., & Santoso, A. (2026). Pengaruh Likuiditas dan Profitabilitas terhadap Financial Distress. *Jurnal Emt Kita*, 10(1), 319–327. <https://doi.org/10.35870/emt.v10i1.5518>
- Gwalani, M., Teltumbde, G., & Gwalani, H. (2025). Trends in Predicting Corporate Distress: A Bibliometric and Thematic Analysis. *Sage Journals*, 33(4), 243–252. <https://doi.org/https://doi.org/10.1177/09711023251360528>
- Habib, A., & Hasan, M. (2019). Firm life cycle, risk-taking, and investor sentiment. *Accounting & Finance*, 59(1), 465–497. <https://doi.org/10.1111/acfi.12322>
- Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The Organization as a Reflection of Its Top Managers. *Academy of Management Review*, 2(9), 193–206. <https://doi.org/https://doi.org/10.2307/258434>
- Helmi, H. (2019). Pentingnya Laporan Keuangan Untuk Menilai Kinerja Keuangan. *Jurnal Akuntansi Unihaz - JAZ*, 2(1), 1–10. <https://doi.org/https://doi.org/10.55303/mimb.v19i1.146>
- Hidayat, M., Siregar, M. I., Aspahani, A., & Erman, E. (2024). Pengaruh Karakteristik Chief Executive Officer Terhadap Nilai Perusahaan di Indonesia. *Owner*, 8(3), 2296–2305. <https://doi.org/10.33395/owner.v8i3.2276>
- Honorris, P., & Trisnawati, E. (2024). Executive Characteristics: The Effect of Accounting Conservatism, Financial Distress, Transfer Pricing on Tax Avoidance. *E-Jurnal Akuntansi*, 35(1), 62–76. <https://doi.org/10.24843/EJA.2025.v35.i01.p05>
- Iqbal, M., Nugroho, D., & Mawardi, W. (2016). Analisis Prediksi Financial Distress Dengan Menggunakan Model Altman Z-Score Modifikasi 1995 (Studi Kasus Pada Perusahaan Manufaktur Yang Go Public di Indonesia Tahun 2008 sampai dengan Tahun 2010). *Diponegoro Journal Of Management*, 1(1), 1–11.
- Islami, I. N. (2018). Financial Ratio Analysis to Predict Financial Distress on Property and Real Estate Company listed in Indonesia Stock Exchange Abstrak. *Jouurnal of Applied Accounting and Finance*, 2(2), 125–137.
- Jansen, J. J. P., Heavey, C., Mom, T. J. M., Simsek, Z., & Zahra, S. A. (2023). Scaling-up: Building, Leading and Sustaining Rapid Growth Over Time. *Journal of Management Studies*, 60(3), 581–604. <https://doi.org/10.1111/joms.12910>
- Jaya, S. (2020). Pengaruh Ukuran Perusahaan (Firm Size) dan Profitabilitas (ROA) Terhadap Nilai Perusahaan (Firm Value) Pada Perusahaan Sub Sektor Property dan Real Estate di Bursa Efek Indonesia (BEI). *Jurnal Manajemen Motivasi*, 16(1), 38–44. <https://doi.org/https://doi.org/10.29406/jmm.v16i1.2136>
- Kallunki, J.-P., & Silvola, H. (2008). The effect of organizational life cycle stage on the use of activity-based costing. *Management Accounting Research*, 19(1), 62–79. <https://doi.org/https://doi.org/10.1016/j.mar.2007.08.002>
- Kaya, H. D., & Rosinsky, Z. (2025). CEO Pay Balance and Firm Performance in Times

- of Socioeconomic Challenges. *SocioEconomic Challenges*, 9(1), 70–79. [https://doi.org/10.61093/sec.9\(1\).70-79.2025](https://doi.org/10.61093/sec.9(1).70-79.2025)
- Kembaren, L. (2024). Lunasi Sukuk Ijarah Jatuh Tempo, DILD Konsisten Tekan Rasio Utang. *Idn.Financials*. <https://www.idnfinancials.com/id/news/56835/lunasi-sukuk-ijarah-jatuh-tempo-dild-konsisten-tekan-rasio-utang>
- Kirana, C. A. (2021). Remunerasi direksi utama , disparitas gaji antar direksi dan kinerja perusahaan. *Jurnal AKuntansi Kontemporer*, 13(2), 81–95. <https://doi.org/https://doi.org/10.33508/jako.v13i2.3077>
- Krisnata, A. (2023). Pengaruh Adaptasi Ceo, Pendidikan Ceo Terhadap Finncial Distress. *Jurnal Manajemen Dan Start-up Bisnis*, 8(1), 84–92.
- Nabhani, A. (2024). Ketidakpastian Kelangsungan Usaha Saraswati Griya Lestari. *Neraca Harian Ekonomi*. <https://www.neraca.co.id/article/169135/ketidakpastian-kelangsungan-usaha-bei-suspensi-saham-saraswati-griya-lestari>
- Nurdiana, I., & Khusnah, H. (2023). Pengaruh Financial Distress, Female CEO, Profitabilitas, Oppoutunity dan Materialitas Terhadap Kecurangan Laporan Keuangan. *Jurnal Ilmiah Akuntansi Dan Keuangan*, 12(1), 44–54. <https://doi.org/https://doi.org/10.32639/jiak.v12i1.300>
- Nurmayanti, P. (2020). Karakteristik Chief Executive Officer (CEO) dan Kualitas Akruar: Bukti Empiris dari Indonesia. *Jurnal Akuntansi Dan Governance Andalas*, 3(1), 1–29. <https://doi.org/10.25077/jaga.v3i1.42>
- Pratiwi, A. (2025). Ppro Informasikan Adanya Keputusan Perpanjangan Penundaan Kewajiban Pembayaran Utang. *Pasardana*. <https://pasardana.id/news/2025/2/13/ppro-informasikan-adanya-keputusan-perpanjangan-penundaan-kewajiban-pembayaran-utang>
- Radinda, A. S. (2023). Pengaruh kepemilikan manajerial, kepemilikan institusional, karakteristik ceo (gender, tingkat pendidikan, pengalaman), dan ukuran perusahaan terhadap teratasnya financial distress. *Jurnal Ekonomi Trisakti*, 3(1), 693–704. <https://doi.org/http://dx.doi.org/10.25105/jet.v3i1.15450>
- Rahayu, W. P., & Sopian, D. (2019). Pengaruh Rasio Keuangan dn Ukuran Perusahaan terhadap Financial distress. *Owner*, 4(3), 2.
- Rahima, A., & Simon, F. (2023). Pengaruh Cash Holding, Profitabilitas, Kompensasi Bonus, dan Ukuran Perusahaan terhadap Perataan Laba. *Ekonomi, Keuangan, Investasi Dan Syariah (EKUITAS)*, 5(2), 396–405. <https://doi.org/10.47065/ekuitas.v5i2.4516>
- Rahman, J., & Chen, X. (2025). CEO characteristics and fi rm performance : evidence from private listed fi rms in China. *Corporate Governance*, 23(3), 458–477. <https://doi.org/10.1108/CG-01-2022-0004>
- Rahmaniah, M. (2016). Analisis Potensi Terjadinya Financial Distress Pada Bank Umum Syariah (Bus) Di Indonesia. *Ekonomi Dan Perbankan Syariah*, 3(1), 1–20.
- Reinelda, B., Hadi, S., Eikman, A., & Hidayati, N. (2024). the Influence of Women Leaders in Green Business Strategic Decision Making. *Jurnal of Applied Business and Banking (JABB)*, 5(1), 8–16.
- Rochendi, L. R., & Nuryaman, N. (2022). Pengaruh Sales Growth, Likuiditas Dan Ukuran Perusahaan Terhadap Financial Distress. *Owner*, 6(4), 3465–3473. <https://doi.org/10.33395/owner.v6i4.1113>
- Sarce, L., Sapari, J., Patiasina, R., & Mudiha, A. (2023). Analisis Prediksi Kebangkrutan dengan Menggunakan Metode Altman Z- Score pada Perusahaan yang Terdaftar Di BEI. *Simki Economic*, 6(2), 413–420.

- Sari, T. A. M., & Maulidah, N. (2024). CEO Characteristics dan Intellectual Capital terhadap Kinerja Perusahaan. *ASSET: Jurnal Manajemen Dan Bisnis*, 7(2), 76–92. <https://doi.org/10.24269/asset.v7i2.10390>
- Setiawan, R., & Gestanti, L. (2018). CEO Education, Karakteristik Perusahaan dan Kinerja Perusahaan. *Jurnal Ilmiah Manajemen*, 2(2), 101–109. <https://jurnal.narotama.ac.id/index.php/mgs/article/view/678/394>
- Sidik, S. (2025). Pengembang Cowell Pailit, Bagaimana Nasib Konsumen? Cnbcindonesia. <https://www.cnbcindonesia.com/market/20200717084605-17-173419/pengembang-cowell-pailit-bagaimana-nasib-konsumen>
- Sugianto, D. (2025). Bolak-balik Putusan PKPU Hanson Internasional Pailit atau Damai <https://finance.detik.com/berita-ekonomi-bisnis/d-5701943/bolak-balik-putusan-pkpu-ha.Detik.Com>.
- Susanto, V. (2025). Tagihan PKPU Armidian Karyatama (ARMY) mencapai Rp 40 miliar. Kontan. <https://nasional.kontan.co.id/news/tagihan-pkpu-armidian-karyatama-army-mencapai-rp-40-miliar>
- Ulinnuha, K., Harymawan, I., & Aini, S. (2024). CEO Education from Reputable University and ESG Disclosure: Evidence from Indonesia. *Jurnal Dinamika Akuntansi Dan Bisnis*, 11(1), 1–14. <https://doi.org/https://dx.doi.org/10.24815/jdab.v11i1.33305>
- Ullah, I., Fang, H., & Jebran, K. (2019). Do gender diversity and CEO gender enhance firm ' s value ? Evidence from an emerging economy. *Journal of Corporate Finance*, 34(1), 47–52. <https://doi.org/10.1108/CG-03-2019-0085>
- Urquhart, A., & Zhang, H. (2022). PhD CEOs and firm performance. *European Financial Management*, 28(1), 433–481. <https://doi.org/10.1111/eufm.12316>
- Wahyuni, S. F. (2021). Analisis Financial Distress Menggunakan Metode Altman Z-Score , Springate , Zmijeski Dan Grover Pada Perusahaan Sektor Perkebunan yang Terdaftar di Bursa Efek Indonesia MANEGGIO : Jurnal Ilmiah Magister Manajemen. *Jurnal Ilmiah Magister Manajemen*, 4(1), 62–72.
- Wijaya, K., & Kesaulya, F. (2022). Pengaruh Financial Distress Dan Ceo Gender Terhadap Konservatisme Transportasi Yang Terdaftar Di Bursa Efek Indonesia (Bei). *Jurnal Informasi Akuntansi*, 3(2), 62–76.
- Winda R., Siti, N K., & Wahyu A,P.,(2024), Peran Variabel Moderasi Ukuran Perusahaan dalam Finansial Ditress, Debt Default, dan Pertumbuhan Perusahaan terhadap Opini Audit Going Concern, *Business and Economics Conference in Utilization of Modern Technology*
- Withisuphakorn, P., & Jiraporn, P. (2017). CEO age and CEO gender: Are female CEOs older than their male counterparts? Pradit Withisuphakorn. *Finance Research Letters*, 22(2), 129–135. <https://doi.org/10.1016/j.frl.2016.12.026>
- Yuliasuti, D., & Nurhayati, I. (2023). Pengaruh Profitabilitas, Leverage, Firm Size, Earnings Power, Dan Tax Avoidance Terhadap Manajemen Laba. *Jurnal GeoEkonomi*, 14(1), 1–16. <https://doi.org/10.36277/geoekonomi.v14i1.252>
- Zaidi, N., Azouzi, M. A., & Sadraoui, T. (2021). CEO Financial Education and Bank Performance. *Journal of Entrepreneurship Education*, 24(2), 1–20.
- Zhang, J., Xue, C., & Zhang, J. (2022). The Impact of CEO Educational Background on Corporate Risk-Taking in China. *Journal of Risk and Financial Management*, 16(1), 567–575. <https://doi.org/10.3390/jrfm16010009>