

# CEO Narcissism and CEO Overconfidence on Firm Performance: The Role of Capital Structure as Mediating Variable

Candy\*, Delfina

Faculty of Business and Management, Universitas Internasional Batam  
Jl. Gajah Mada Sei Ladi, Batam, 29442, Indonesia

---

**Article history:**

Received: 2023-01-04

Revised: 2023-03-11

Accepted: 2023-04-20

---

✉ Corresponding Author:

Name author: Candy

E-mail: [candy.chua@uib.ac.id](mailto:candy.chua@uib.ac.id)

## Abstract

Chief Executive Officers have an important role in a company's future, including the financial decisions of a company. Therefore, this study investigates the role of capital structure as a variable that mediates the effect of CEO narcissism and CEO overconfidence towards the performance of Indonesian infrastructure companies that are listed on the Indonesia Stock Exchange. This study obtained 39 companies as a study sample from 2017 to 2021 and analyzed them using the panel regression method. This study found that capital structure is negatively affected by CEO narcissism, and positively affected by CEO overconfidence. Capital structure doesn't affect return on asset (ROA) but negatively affects return on equity (ROE). CEO narcissism doesn't affect firm performance as measured by ROA but positively affects ROE. Unlike the CEO overconfidence doesn't affect either ROA or ROE. Moreover, the capital structure can mediate the impact of CEO narcissism and overconfidence on ROE, but it cannot mediate the impact on ROA. The results of this study contribute to academics as well as corporate knowledge as research regarding CEO narcissism and CEO overconfidence is uncommon and can be useful as a reference for companies.

**Keywords** : Capital structure, CEO overconfidence CEO narcissism, Debt financing, and Firm performance.

**JEL Classification** : G32

This is an open-access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license



## 1. Introduction

When a business can use its resources effectively and maximize earnings, it is considered to be performing well. The oversight of Chief Executive Officers (CEOs), who hold the highest positions in management, is typically indispensable in managing the company's resources and profitability. In addition to managing a business, the CEO is crucial in making financial decisions that may have an impact on how well the firm performs (Naseem et al., 2019). To hold stakeholders accountable, the CEO must make sure that the company's performance is consistent with its objectives. Consequently, to become the CEO of a company, a person must meet specific requirements (Altarawneh et al., 2020). Since the CEO has complete authority over all business operational choices, the CEO bears a significant amount of responsibility for enhancing corporate performance (Ahmad et al., 2022). The CEO's decisions are influenced by his personality and psychological traits as well as reasoning, therefore they are not solely based on reason (Cragun et al., 2019). Narcissism is one of the traits that CEOs typically possess (Capalbo et al., 2017). The Diagnostic and Statistical Manual for Mental Disorders describes a person with a narcissistic personality tends to seek attention, has an unrealistic self-view, and the desire for this self-view is continually maintained by self-regulation, which results in a lack of attention to others (Cragun et al., 2019).

CEO narcissism and business performance are frequently linked. Companies with narcissistic CEOs are seen to perform well because they are motivated by the desire of the CEOs to try to demonstrate their superiority and capabilities in meeting objectives (Youssef, 2022). Yet, Ernawan and Daniel (2020) contend that narcissistic CEOs do negatively affect firm performance. That is a result of the CEO's high level of confidence in taking calculated risks (Mira et al., 2022). Because the narcissistic CEO wants greater attention for the business to grow its supremacy, he makes the risky decision to pursue external finance through debt. The amount of debt utilized to finance the company increases in direct proportion to how narcissistic the CEO is (Zhang et al., 2021).

Due to their position of authority within the organization, CEOs are more likely to develop narcissistic personalities (Korablev & Podukhovich, 2022). Due to their position of authority within the organization, CEOs are more likely to develop narcissistic personalities (Ho et al., 2016). CEO over

confidence is considered to have similarities with CEO narcissism because it can create a high-risk investment environment that causes the company to suffer losses (Chang & Lin, 2022). Overconfident CEOs are also prone to overinvesting in financing businesses by using debt on a much larger scale than equity to fund business operations because they don't prioritize risk when making decisions (Mundi & Kaur, 2022). Financing a company with both debt and equity is known as the capital structure. The combination of debt and equity that can increase firm value and result in cheap capital expenses is known as the optimal capital structure (Bala & Babangida, 2022). The capital structure of a firm is a significant performance indicator because it demonstrates how well it uses its resources to maximize earnings for shareholders (Abuamsha & Shumali, 2022). If the capital structure in the company is not appropriate, it will increase the financial risk and have an impact on decreasing performance.

As an external funding source, debt has attracted many companies to restructure (Colline, 2022). Debt is typically used by businesses because it is easy to implement, has minimal transaction costs, is flexible and more efficient than equity financing, and has a lower capital cost burden (Feng et al., 2022 & Huang, 2022). Companies receive tax protection when they take on more debt, which allows them to lower their risk of bankruptcy and enhance their performance (Philemon et al., 2022). Currently, companies around the world have considered debt in their capital structure because financing with debt is more flexible, where companies can choose to use short-term and long-term debt to fulfill their business operations (Fasasi et al., 2022). The debt-to-equity ratio (DER) is a gauge of how much debt businesses are using (Feng, 2022). The DER ratio of companies listed on the Indonesia Stock Exchange (IDX) by sector is presented in Table 1.

**Table 1.** Sector-specific DER of IDX Listed Companies

Sector	Debt-to-Equity Ratio
Energy	0.720
Basic Material	0.860
Industrial	0.650
Consumer Non-Cyclicals	0.890
Consumer Cyclicals	0.590
Healthcare	0.440
Financials	1.790
Properties and Real Estate	0.470
Technology	0.280
Infrastructure	0.910
Transportation and Logistic	0.290

Source: IDX Quarterly Statistics (2022)

The DER ratios of the businesses listed on IDX are contrasted in Table 1. The DER ratio is an indicator for evaluating a company's health. A high DER of a company could cripple the company's ability to attain profit (Hasyim & Nuraeni, 2022). Following the research that DER harms firm performance. The high DER ratio in the financial industry is usual, even though there are exceptions for businesses like banking that engage in savings and loans (Murtini, 2022). Table 1 also reveals that infrastructure, with a DER of 0,91, is the business sector with the highest ratio outside of banking. The infrastructure sector has an unquestionably high DER ratio since businesses in this industry need a lot of operating capital and can't rely entirely on internal resources (Kasenda, 2020). With a high DER ratio, it reflects that infrastructure sector companies tend to use debt rather than equity in their capital structure.

According to historical statistics, Indonesian construction firms that are part of the infrastructure sub-sector typically have a low net profit margin and a sizable percentage of debt, which forces the company to shoulder a sizable interest burden (Kasenda, 2020). That ultimately triggers management to seek external funding sources with the lowest interest rates to improve firm performance and satisfy shareholders. This phenomenon shows a strong correlation between the capital structure's debt financing and firm performance. The usage of debt in a company's capital structure and its effect on performance remains a debatable matter. According to Miller and Modigliani's 1963 capital structure theory, using debt will give businesses tax protection, allowing them to operate their businesses better (Olusola et al., 2022). It differs from the pecking order idea, though, which states that corporations that have a high level of profitability typically have less debt because they favor internal funding sources (Do et al., 2022).

Previous research by Youssef (2022) and Olsen et al. (2013) found that CEO narcissism directly influences company performance. Research by Zhang et al. (2021) and Mundi & Kaur (2022) prove that CEO narcissism and CEO overconfidence have a significant influence on decisions to use debt and equity in the capital structure. Capital structure significantly influences company performance based on research by Dat (2022); Islam and Iqbal (2022); Orlu et al. (2022); Rajamani (2021); Evbayiro-Osagie & Enadeghe (2022); Orji et al. (2021) and Yinusa et al. (2019). It needs more research because previous studies have shown that CEO narcissism, CEO overconfidence, capital structure, and firm performance are all strongly related. In addition, study on the effect of CEO narcissism and CEO overconfidence on firm performance is still limited and there seems to be a lack of studies using capital structure as a variable to mediate that effect. Therefore, this study will examine the effect of CEO narcissism and CEO overconfidence on the performance of infrastructure companies listed on IDX mediated by capital structure. This study also helps to produce new insights that businesses and academics may use as a resource.

## **2. Hypotheses Development**

### **CEO Narcissism's Impact on Capital Structure**

CEOs with narcissistic personalities have several attributes that are associated with them, such as ease with people, openness, conscientiousness, intelligence, and a preference for taking risks (Braun et al., 2018 & Kusiyah et al., 2022). Companies managed by narcissistic CEOs will have more leverage since they enjoy making risky choices like using debt internally (Buyl et al., 2019). Zhang et al. (2021) also researched the impact of CEO narcissism on debt financing in China and their investigation provides credence to the notion that CEO narcissism benefits debt financing. They also claimed that the extent to which a corporation uses debt increases in direct proportion to how narcissistic its CEO is.

H<sub>1</sub>: Capital structure is positively impacted by CEO narcissism.

### **Overconfident CEO Impact on Capital Structure.**

Overconfident CEOs typically have inflated perceptions of their abilities (Liu et al., 2022). Overconfident CEOs frequently take risky actions, such as increasing the company's leverage, because of their excessive confidence in themselves (Ho et al., 2016). CEO overconfidence is therefore thought to be intimately tied to the capital structure since they favor debt financing and disregard equity financing. According to research by Batool et al. (2022), CEO overconfidence has an advantageous impact on the capital structure because of its propensity to finance debt. Because corporations employ debt much more frequently than equity, according to Mundi and Kaur (2022) CEO overconfidence has a favorable impact on the capital structure.

H<sub>2</sub>: Capital structure is positively impacted by CEO overconfidence.

### **Capital Structure's Effect on Firm Performance.**

Companies utilize a combination of debt and equity ratios called capital structure to finance their operations (Spiff & Oriji, 2022). In order to build the best possible financial structures and enhance corporate performance, businesses might select debt and capital offers. Firm performance benefits from the capital structure as indicated by the debt ratio (Evbayiro-Osagie & Enadeghe, 2022; Orji et al., 2021 and Yinusa et al., 2019). Those findings are backed by Miller and Modigliani's 1963 theory, which contends that using debt will give businesses tax protection so they can boost a firm's performance (Olusola et al., 2022). Likewise, the static trade-off theory contends that businesses can choose the best capital structure by weighing the advantages and drawbacks of employing debt to boost performance (Islam & Iqbal, 2022).

Although Abuamsha and Shumali (2022); Olayemi and Fakayode (2021); Uremadu and Onyekachi (2019); and A et al. (2018) all claimed that capital structure had no bearing on business performance, the findings of the studies above contradict such claims. It also differs from the findings of Dat (2022); Islam and Iqbal (2022); Orlu et al. (2022); and Rajamani (2021) which show that capital structure has a significant, adverse impact on firm performance. This happens because when a company uses a proportion of debt that is too large in its capital structure, the resulting net profit is not enough to pay off the financial burden of the debt.

H<sub>3</sub>: The performance of a firm is positively influenced by capital structure.

### **CEO Narcissism's Effect on Firm Performance.**

High self-confidence and an excessive amount of admiration for oneself are characteristics of CEO narcissism (Christian & Sulistiawan, 2022). CEOs with narcissistic personalities like to show their superiority to get attention and praise from others (Rusydi, 2021). CEO narcissism is closely related to firm performance. Narcissistic CEOs will use any means to increase company revenue to create a good image and get praise from others so that the leadership style of the narcissistic CEO encourages increased firm performance (Christian & Sulistiawan, 2022). According to the results of Youssef (2022) and Olsen et al. (2013) research, CEO narcissism improves firm performance. The desire of CEOs to try to demonstrate their superiority and capacity to achieve goals is what drives companies led by CEO narcissism to accomplish goals (Youssef, 2022).

Ham et al. (2018) contend that CEO narcissism significantly lowers firm performance, which is in contradiction to those studies. It also differs from studies by Kusiyah et al. (2022) and Mira et al. (2022) which suggest that CEO narcissism does not significantly affect firm performance because all activities carried out by the CEO are not directly related to firm performance, even though the narcissistic personality influences his leadership style and decision-making style.

H<sub>4</sub>: The performance of a firm is positively influenced by CEO narcissism.

### **Overconfident CEO Effect on Firm Performance.**

A key aspect impacting a company's decision-making is the CEO's overconfidence (Mundi & Kaur, 2019). CEOs who are overconfident frequently make poor decisions because they have an excessive amount of faith in their ability to control all decision outcomes (Chang & Lin, 2022). Overconfident CEOs are thought to be able to produce bad firm performance because they overestimate the risk of a decision and underestimate the outcomes (Galariotis et al., 2022). In accordance with the results of Kim and Jang's (2020) research, a CEO's overconfidence has a bad impact on the profitability of the organization. Additionally, according to the research, organizations with an overconfident CEO perform worse. In contrast, Mundi and Kaur's (2022) research states that firm performance will increase if it is led by an

overconfident CEO. This is because the CEO had faith in his ability to select the degree of investment that would produce the best performance. That study supports the conclusions made by Ham et al. (2018) who found that CEO overconfidence had a large, beneficial impact on business performance.

H<sub>5</sub>: The performance of a firm is positively influenced by CEO overconfidence.

#### The Mediating Role of Capital Structure in the Impact of CEO Narcissism on Firm Performance.

According to Buyl et al. (2019), narcissistic CEOs predominate when making hazardous decisions, such as funding businesses with debt, which affects raising firm leverage. The effect of CEO narcissism on capital structure is also proven by research done by Zhang et al. (2021), which indicated that CEO narcissism that narcissistic CEO does positively affect debt financing, with the amount of debt used in a company's capital structure increasing as CEO narcissism increases. The study by Olusola et al. (2022) shows that capital structure affects firm performance. By using a reasonable amount of debt in the capital structure, companies can perform better. The results of research by Evbayiro-Osagie and Enadeghe (2022); Olusola et al. (2022); Orji et al. (2021); and Yinusa et al. (2019) also show that capital structure positively influences firm performance. By lowering financing with equity in the company's operations, a debt policy might encourage corporations to employ significant amounts of debt. As a result, companies with significant leverage can nevertheless perform well. These studies prove that the structure of capital decisions made by CEO narcissism can indirectly affect firm performance. When CEO narcissism is able to use a reasonable amount of debt in its capital structure, the company can create better performance.

H<sub>6</sub>: Capital structure can intervene in the effect of CEO narcissism on firm performance.

#### The Mediating Role of Capital Structure in the Impact of CEO Narcissism on Firm Performance

Batool et al. (2022) show that a CEO's level of confidence affects the company's financial choices, and overconfident CEOs have a propensity to borrow money, raising the leverage of the business. The effect of CEO overconfidence on capital structure is also proven by Mundi and Kaur (2022) in their research, which states that overconfident CEOs use a large proportion of debt compared to equity to finance company operations. Dat (2022); Alfawareh et al. (2022); Orlu et al. (2022); and Rajamani (2021) prove that capital structure affects firm performance. Performance can be negatively impacted by the capital structure's excessive usage of debt since it can restrict managers' ability to oversee business operations. Yet, if the level of debt utilized to finance the company is still fair, then firm performance may improve (Olusola et al., 2022). These studies show that CEO overconfidence affects firm performance through capital structure. When debt is utilized excessively, it will have a detrimental effect on the performance of the firm since it might lead the business to suffer a heavy weight of interest due to CEOs' propensity for overusing debt.

H<sub>7</sub>: Capital structure can intervene in the effect of CEO overconfidence on firm performance.

### 3. Method, Data and Analysis

Companies operating in the infrastructure industry and listed on the Indonesia Stock Exchange make up the population that this study is looking at. Transportation infrastructures, heavy construction and civil engineering, telecommunication, and utilities make up the four sub-sectors of the infrastructure sector, which together contain 58 firms. 39 sample companies were drawn from the population using the purposive sampling technique. The sample companies chosen met the requirements as listed in Table 2. Total of populations is 195.

**Table 2.** Criteria for Research Sample

Information	Amount
Infrastructure sector companies listed on the Indonesia Stock Exchange	58
Companies conducting initial public offerings after 2017	(13)
Insufficient company's annual reports	(3)
The company's financial statements use currencies other than Rupiah	(3)
The number of sample companies that meet the criteria	39
The number of samples for the 2017-2021 research period	195 sample

Secondary data types are collected to meet the overall research needs. Secondary data is information that has been gathered and made public by individuals other than researchers (Digdowiseiso et al., 2022). The secondary data used in this study are the financial statements of the sample companies that were posted between 2017 and 2021 on the Indonesian Stock Exchange's official website. Because it combines cross-sectional and time series data, the collected data is referred to as panel data. Therefore, the appropriate data analysis method in this study is panel regression using the E-Views 12 program to test the direct effect and the Sobel Test to test the indirect effect and using the Sobel Test to test the indirect effect. The following is the equation model applied in this study:

$$Y = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 Z_{it} + \varepsilon_{it}$$

$$Z = \alpha + \beta_4 X_{1it} + \beta_5 X_{2it} + \varepsilon_{it}$$

Where, Y= Dependent variable; Z= Mediation variable; X= Independent variable;  $\alpha$ = Costanta;  $\beta$ = Coefficient beta;  $\varepsilon$ = Error term; i= Cross-section item; t= Time series item.

The variables employed in this study will be subjected to hypothesis testing. A technique called hypothesis testing is used to determine how significant a relationship between study variables is. As a result, this research will verify the direct effects of CEO narcissism and CEO overconfidence on the capital

structure and company performance as well as the importance of capital structure as a mediating variable. Table 3 displays the variables used during this research.

**Table 3.** Measurement of the Variables

Variable Type	Variable Name	Measurement	Formula	Source
Dependent	Firm Performance	Return on Asset Ratio Return on Equity Ratio	$\frac{\text{Net Income}}{\text{Total Asset}}$ $\frac{\text{Net Income}}{\text{Total Equity}}$	Rajamani (2021)
Independent	CEO Narcissism (CEON)	CEO Photograph	a. A score of one is given if there is no photo of the CEO.; b. A score of two is given if the CEO is shown in a photo with one or more co-executives.; c. A score of three is given if a CEO's photo is shown on less than half of a page; d. A score of four is given if the CEO's photo is displayed on more than half of a page; e. A score of five is given if the CEO's photo is shown in its entirety on a single page.	Rusydi (2021) and Mira et al. (2022)
	CEO Overconfidence (CEOO)	Dummy	If the DER is above the industry median during the research year, it receives a score of one; otherwise, it receives a score of zero.	Bivianti et al. (2022)
Mediation	Capital Structure	Debt-to-Equity Ratio	$\frac{\text{Total Liabilities}}{\text{Total Equity}}$	Abughniem et al. (2020)

#### 4. Results

Table 4 shows that the highest value of the CEO narcissism variable is 5 in 69 sample data and the lowest value is 1. The CEO narcissism variable has an average value of 4.066 indicating that the majority of the sample companies are run by CEOs who have narcissistic personalities. The CEO narcissism variable's standard deviation is 0.837 which is lower than average. This circumstance suggests that there is less diversity in the distribution of CEO narcissism variable data.

**Table 4.** Descriptive Statistical Test Result

Variable	Descriptive Statistic				
	Min	Max	Mean	Std. Dev	
CEON	1	5	4.066	0.837	
CEOO	0	1	0.553	0.498	
DER	-2.856	370.574	4.394	28.566	
ROA	-1,396.862	172.526	-6.484	100.870	
ROE	-544.453	5.902	-2.980	39.096	

From 2017 to 2021, a total of 108 sample data showed enterprises run by CEOs who were overconfident, while 87 other data showed businesses run by CEOs who were not overconfident. The overconfidence CEO variable's average value, which is 0.553 indicates that overconfident CEOs are in charge of the majority of businesses. Moreover, CEO overconfidence has a standard deviation of 0.498, which is lower than the average. These findings suggest that the sample data used for this investigation are less diverse. In addition, the highest value of DER is 370.574 and the lowest value is -2.856. The average value of DER is 4.394, meaning that the average sample company's debt is 4.394 times larger than its total equity. Also, the variable's standard deviation value, which is greater than the mean and stands at 28.566, demonstrates the diversity of DER data.

The minimum value of the ROA ratio is -139.686% and the maximum value is 17.252%. Judging from the average value, the sample companies have a ROA of -648.432%. This value illustrates the company's ineffectiveness in managing assets to generate profits so that the company loses money. A value of 100,87080 is obtained for the standard deviation of ROA and is greater than the mean. These circumstances show that the ROA variable data is highly volatile. The variable ROE descriptive statistical test results show a lowest value of -54.445.356% and a highest value of 590.282%. The mean value of the ROE variable is -298.011%. This value illustrates the inability of infrastructure companies to generate profits from their capital and such conditions must be anticipated immediately. Besides that, the standard deviation value of the ROE variable is 39.096 which shows that there are variations in the data because it exceeds the average value. It is required to conduct multiple tests in stages to identify the optimal model that matches the research data to produce research results that are correct and fully represent the facts. Lagrange multiplier tests, Hausman tests, and redundant fixed effect tests are a few of the tests that must be conducted.

Table 5 presents the results of the redundant fixed effect test for the effects of the study's variables. Redundant fixed effect tests were conducted to determine the regression model that existed between the common effect model (CEM) and the fixed effect model (FEM). Only one of the probabilities for the

relationship between capital structure and ROE indicates a value less than  $\alpha$  ( $\alpha = 0.05$ ), the others all surpass  $\alpha$  ( $\alpha = 0.05$ ). In this method, the Hausman test will be carried out to decide which of the FEM and REM models is the best, and the Lagrange multiplier test will be applied to the remaining data.

**Table 5. Redundant Fixed Effect Test**

Dependent Variable: Capital Structure Independent Variables: CEO Narcissism and CEO Overconfidence			
Effect Test	Statistic	d.f.	Prob
Cross-section F	1.077	(38.154)	0.365
Cross-section Chi-Square	45.965	38	0.175
Dependent Variable: Firm Performance (ROA) Independent Variable: Capital Structure			
Effect Test	Statistic	d.f.	Prob
Cross-section F	1.282	(38.155)	0.148
Cross-section Chi-Square	53.309	38	0.057
Dependent Variable: Firm Performance (ROE) Independent Variable: Capital Structure			
Effect Test	Statistic	d.f.	Prob
Cross-section F	1.402	(38.155)	0.078
Cross-section Chi-Square	57.641	38	0.021
Dependent Variable: Firm Performance (ROA) Independent Variables: CEO Narcissism and CEO Overconfidence			
Effect Test	Statistic	d.f.	Prob
Cross-section F	0.961	(38.154)	0.540
Cross-section Chi-Square	41.496	38	0.320
Dependent Variable: Firm Performance (ROE) Independent Variables: CEO Narcissism and CEO Overconfidence			
Effect Test	Statistic	d.f.	Prob
Cross-section F	1.202	(38.154)	0.216
Cross-section Chi-Square	50.673	38	0.081

**Table 6. Hausman Test**

Test Summary	Chi-Sq Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.004	1	0.946

**Table 7. Lagrange Multiplier Test**

Dependent Variable: Capital Structure Independent Variables: CEO Narcissism and CEO Overconfidence			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.105 (0.744)	0.116 (0.732)	0.222 (0.637)
Dependent Variable: Firm Performance (ROA) Independent Variable: Capital Structure			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.001 (0.972)	0.056 (0.812)	0.057 (0.810)
Dependent Variable: Firm Performance (ROE) Independent Variable: Capital Structure			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	1.556 (0.212)	0.266 (0.606)	1.822 (0.177)
Dependent Variable: Firm Performance (ROA) Independent Variables: CEO Narcissism and CEO Overconfidence			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.139 (0.709)	0.005 (0.939)	0.144 (0.703)
Dependent Variable: Firm Performance (ROE) Independent Variables: CEO Narcissism and CEO Overconfidence			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.041 (0.838)	0.024 (0.875)	0.066 (0.796)

The Hausman test in Table 6 indicate that the probability of the impact of capital structure on ROE is 0.9461, suggesting that REM is more suitable than FEM. This is because the probability value of random cross-section exceeds  $\alpha$  ( $\alpha = 0.05$ ). Consequently, to identify the most effective model between CEM and REM, we conduct the Lagrange multiplier test using several variables that have a chi-square cross-section probability exceeding  $\alpha$  ( $\alpha = 0.05$ ) in Table 5. Table 7 displays the outcomes of the Lagrange multiplier test to determine which of the REM and CEM was the better model. If the Breusch-Pagan cross-section value

is greater than  $\alpha$  ( $\alpha = 0.05$ ), CEM should be utilized. Conversely, if the value is smaller than  $\alpha$  ( $\alpha = 0.05$ ), it is recommended to use REM. Since all the values are greater than  $\alpha$  ( $\alpha = 0.05$ ), CEM is chosen as the best study model. Table 8 then presents the results of the regression test using CEM.

**Table 8.** Regression Test Results

Dependent Variable: Capital Structure				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	27.461	9.938	2.762	0.006
CEON	-7.127	2.491	-2.861	0.004
CEO	10.686	4.187	2.552	0.011
Dependent Variable: Firm Performance (ROA)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.657	7.327	-0.908	0.364
DER	0.039	0.254	0,155	0,876
Dependent Variable: Firm Performance (ROE)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2,727	0,895	3,046	0,002
DER	-1,298	0,031	-41,829	0,000
Dependent Variable: Firm Performance (ROA)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-50.564	35.933	-1.407	0.161
CEON	9.467	9.007	1.051	0.294
CEO	10.073	15.139	0.665	0.506
Dependent Variable: Firm Performance (ROE)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-37.931	13.670	-2.774	0.006
CEON	9.988	3.426	2.914	0.004
CEO	-10.231	5.759	-1.776	0.077

According to the results of the regression test in Table 8, which reveal that CEO narcissism has a probability of 0.004, which is less than 0.05, and a coefficient of -7.127, it has a substantial negative effect on the capital structure. CEO overconfidence, on the other hand, has a significantly positive impact on the capital structure because it has a probability value greater than 0.05, specifically 0.011, and a coefficient of 10.686. Moreover, Table 8 also shows that capital structure has a significant adverse impact on ROE because it shows a probability of less than 0.05, namely 0.000, and a coefficient of -1.298. Yet, as shown by a probability of 0.976 exceeding 0.05, the firm's performance as assessed by ROA is unaffected by the capital structure.

Furthermore, it is proven that CEO overconfidence does not significantly affect firm performance as assessed by ROA or ROE because it has a probability greater than 0.05, specifically 0.506 and 0.077. Meanwhile, CEO narcissism doesn't affect ROA but has a substantial and positive effect on ROE. This is shown by the fact that the CEO narcissistic probability value on ROE is 0.004, above 0.05, with a coefficient of 9.988. This study evaluates the direct impact of CEO narcissism and CEO overconfidence on firm performance as well as the indirect impact, with capital structure serving as a mediating factor. Table 9 shows the results of the mediation test, which was conducted using the Sobel test.

**Table 9.** Mediation Test Results

Dependent Variable: Firm Performance (ROA)		
Variable	t-Statistic	P-Value
CEON	-0.150	0.880
CEO	0.150	0.880
Dependent Variable: Firm Performance (ROE)		
Variable	t-Statistic	P-Value
CEON	2.854	0.004
CEO	-2.547	0.010

Table 9 displays the findings of the mediation test for CEO narcissism and CEO overconfidence with p-values of 0.880 and 0.880. These findings suggest that the capital structure is unable to intervene in the impact of the CEO's narcissism and overconfidence on ROA. Also, findings from the mediation test indicate that the p-values for CEO narcissism and CEO overconfidence, respectively, are 0.004 and 0.010. This value means that the capital structure can intervene in the impact of the CEO's narcissism and overconfidence on ROE.

## 5. Discussion

The first hypothesis in this study is disproved, as shown by the panel regression results in Table 8, which show that CEO narcissism negatively affects capital structure. CEOs with narcissistic tendencies are more protective about things that can alter how others perceive them because they prefer to believe they are the most flawless people. Given this, the CEO of narcissism will employ equity rather than debt to preserve the company's reputation. When he can effectively manage the equity to produce profits, the narcissistic CEO believes that he will receive recognition from others. Using debt, however, will shame the narcissistic CEO because they are perceived as being unable to handle the company's equity well and must borrow from external sources. This finding contradicts Zhang et al. (2021)'s research.

The test results prove that CEO overconfidence influences capital structure positively and significantly. CEOs who are overconfident exhibit extreme levels of assurance. Overconfident due to their strong self-esteem, CEOs frequently engage in risky business actions including raising debt levels. The capital structure of a company run by an overconfident CEO will typically have more debt than equity because the overconfident CEO thinks he has the expertise to handle the company's debt. As a result, the study's hypothesis is supported by Batool et al. (2022) and Mundi and Kaur (2022).

When firm performance is gauged by ROA, the effect of capital structure is negligible. The majority of infrastructure businesses have a somewhat high DER, but they are nevertheless able to manage their debts because when the projects they are implementing are finished, the projects can be sold and lower the company's DER ratio. In these conditions, the capital structure cannot strongly influence firm performance, hence the findings are irrelevant. In this study, corporate performance is also assessed using ROE in addition to ROA. The capital structure has a significant, negative impact on ROE. The majority of the infrastructure industry's projects are for the country's infrastructure development, and it is a business sector that frequently uses debt rather than equity to finance the projects that will be carried out. As a result, infrastructure firms must borrow money from banks to finance their long-term initiatives. Companies that borrow money from banks naturally pay interest, therefore when the company's net profit is insufficient to cover the interest expense, it will decrease the company's profitability. This condition causes infrastructure companies with high DER to experience a decrease in ROE because they are not optimal in managing capital in the form of debt. The regression results in Table 8 prove that capital structure does not affect firm performance as measured by ROA, where these results are supported by Abuamsha and Shumali (2022), Olayemi and Fakayode (2021), Uremadu and Onyekachi (2019), and A et al. (2018). However, in contrast to ROE, which is significantly negatively affected by capital structure, and consistent with research by Dat (2022), Islam and Iqbal (2022), Orlu et al. (2022), and Rajamani (2021).

The firm performance determined by ROA is said to be unaffected by CEO narcissism. Because narcissistic CEOs enjoy being the center of attention, they will prioritize themselves over all other aspects of the business when they have narcissistic traits. Thus, the narcissistic personality of the CEO can only create a leadership style that produces a different atmosphere in the company and has no effect on the way the CEO utilizes assets to generate profits. A study by Mira et al. (2022) and Kusiya et al. (2022) found no relationship between CEO narcissism and firm performance. On the other hand, CEO narcissism has a substantial and positive impact on ROE. Since ROE is a factor that investors consider when selecting whether to invest in a company, the narcissistic CEO will want to show that he is capable of handling the company's finances skillfully so that ROE increases. Naturally, having a positive ROE will encourage additional investors to invest. CEO narcissism uses enhancing firm performance to draw in investors as a means of preserving his self-esteem and, inadvertently, enhancing the CEO's reputation for being able to handle corporate capital well. These research results are consistent Youssef (2022) and Olsen et al. (2013).

The hypothesis is disproved by the regression results in Table 8, which show that CEO overconfidence doesn't affect firm performance because the CEO overconfidence data has a less diversified distribution, hence it did not significantly affect business performance. These findings go against the findings of studies by Mundi and Kaur (2022) and Ham et al. (2018), which claim that CEO overconfidence has a significant positive impact on firm performance.

The mediation test results in Table 9 prove that CEO narcissism does not affect firm performance (ROA) mediated by capital structure. The narcissistic CEO may be able to choose between the equity and debt of a firm's capital structure. Because infrastructure corporations already have substantial debt levels, this didn't significantly affect their capital structures. ROA is unaffected by a company's high amount of debt in the infrastructure sector. The returns from infrastructure companies are still balanced, in that they don't exhibit sharp increases or reductions, which suggests that this condition may be related to them. The research results are inconsistent with Zhang et al. (2021), Olusola et al. (2022), Evbayiro-Osagie and Enadeghe, (2022), Orji et al. (2021), and Yinusa et al. (2019). Also, this study found that capital structure can intervene in the impact of CEO narcissism on ROE. CEO narcissism will keep his self-esteem up so that when choosing the capital structure, he may give equity precedence over debt. So, the capital structure's proportion between debt and equity may be impacted by the narcissistic CEO. The choice of whether to categorize a project as capital or debt in the infrastructure sector affects the company's performance unquestionably. This is because infrastructure sector companies tend to use debt as capital to run their projects. If the debt cannot generate profit, it will decrease firm performance and vice versa. The results of this study supported by Zhang et al. (2021), Olusola et al. (2022), Evbayiro-Osagie and Enadeghe, (2022), Orji et al. (2021), and Yinusa et al. (2019).

The mediation test in Table 9 further proves that there is no mediation role of capital structure in the relationship of CEO overconfidence towards the performance of firms when measured by ROA. DER of a company may rise if the overconfident CEO takes on debt to fund operations. The increase in DER won't have a significant effect on ROA, though, if it is countered by a return that is adequate to balance the company's financial burden. Due to the weakness of correlation between variables, the capital structure doesn't mediate the relationship between CEO overconfidence on firm performance. The findings of this study are inconsistent with Batool et al. (2022), Mundi and Kaur (2022), Dat (2022), Alfawareh et al. (2022), Orlu et al. (2022), and Rajamani (2021). The test findings and the company's success as determined by ROE are different. CEO overconfidence is mediated by capital structure in its relationship with ROE. CEO overconfidence tends to make risky decisions like heavily weighting debt in



the company's capital structure. The profitability of a company will suffer whenever debt gets utilized excessively and fails to generate profits. On the other hand, it will produce profitable returns if the debt can be managed well. This study's outcome concludes that an overconfident CEO in directly affects firm performance through capital structure intervention. These results are consistent with the research of Batool et al. (2022), Mundi and Kaur (2022), Dat (2022), Alfawareh et al. (2022), Orlu et al. (2022), and Rajamani (2021).

## 6. Conclusion, Limitations and Suggestions

### Conclusions

This study is done to validate any relationship that ROA and ROE as measurements of firm performance have with CEO narcissism and CEO overconfidence. In addition, it also examines the indirect effect of using capital structure as a mediating variable. When the direct effect test is done, results show a strong negative effect of CEO narcissism towards capital structure, in contrast to CEO overconfidence which was found to have a significant positive effect on capital structure. Additionally, is found to be negatively affecting ROE while having no relationship with ROA. The direct effect test of CEO narcissism has a strong positive impact on ROE but doesn't affect ROA. Likewise, CEO overconfidence doesn't have any kind of significant relationship with either ROA or ROE. The outcomes of this study also validate the role of capital structure in intervening with the influence of CEO narcissism as well as overconfident CEOs in their relationship with firm performance. Capital structure has the role of mediating CEO narcissism and CEO overconfidence on firm performance as measured by ROE but was unable to mediate the effect of CEO narcissism and CEO overconfidence on ROA.

### Limitations and Suggestions

This study is not representative of the variables as a whole due to several limitations. This constraint comes with the fact that previous research on narcissistic and overconfident CEOs is still limited, as is research that employs capital structure as a mediating variable. Because it exclusively focuses on infrastructure sector companies listed on the Indonesia Stock Exchange, this research is further limited by the object used. Aside from that, this study employs only two independent variables.

Given the limitations mentioned, several suggestions can be applied in further research. More data regarding narcissistic and overconfident CEOs should be gathered for future research to develop novel approaches for measuring these two characteristics and provide more significant findings. In addition, the study object may be focused on international businesses or other corporate sectors. Future studies looking into CEO dark personalities might want to include CEO psychopathology and CEO Machiavellianism as independent factors.

### References

- Ajibola, A., Wisdom, O., & Qudus, O. (2018). Capital structure and financial performance of listed manufacturing firms in Nigeria. *Journal of Research in International Business and Management*, 5(August), 81-89. <https://doi.org/http://dx.doi.org/10.14303/jribm.2018.018> Copyright
- Abuamsha, M., & Shumali, S. (2022). Debt structure and its impact on financial performance: An empirical study on the Palestinian stock exchange. *Journal of International Studies*, 15(1), 211-229. <https://doi.org/10.14254/2071-8330.2022/15-1/14>
- Abughniem, M. S., Aishat, M. A. H. al, Hamdan, A., & Weshah, S. R. (2020). Capital Structure, Firm Growth and Firm Performance: Evidence from Jordan. *International Journal of Innovation, Creativity and Change. Www.Ijicc.Net*, 10(12), 655-667. [www.ijicc.net](http://www.ijicc.net)
- Ahmad, G. N., Prasetyo, M. R. P., Buchdadi, A. D., Suherman, Widyastuti, U., & Kurniawati, H. (2022). The Effect of CEO Characteristics on Firm Performance of Food and Beverage Companies in Indonesia, Malaysia and Singapore. *Quality - Access to Success*, 23(186), 111-122. <https://doi.org/10.47750/QAS/23.186.15>
- Alfawareh, F. A., Almashaqbeh, A., Al-Kofahi, M., Alshirah, M., Ananzeh, H., & Al-Kofahi, B. (2022). The Relationship between Capital Structure and Performance of Non-Financial Firms Listed on the Amman Stock Exchange. *Research Journal of Finance and Accounting*, 13(2), 96-102. <https://doi.org/10.7176/rjfa/13-2-09>
- Altarawneh, M., Shafie, R., & Ishak, R. (2020). CEO Characteristic: A Literature Review and Future Directions. *Academy of Strategic Management Journal*, 19(1), 1-10.
- Batool, A., Awan, T., & Chughtai, S. (2022). Impact of CEO Overconfidence on Corporate Financing Decision with Mediating Role of Risk Perception. *Institute of Business Administration Karachi*, 16(2), 77-95. <https://doi.org/10.54784/1990-6587.1375>
- Bivianti, V., Stefani, M. E., & Yuniarsih, N. (2022). The Effect of Executive Characteristics, CEO Overconfidence, Capital Intensity on Tax Avoidance. *STIESIA*, 895-906.
- Braun, S., Aydin, N., Frey, D., & Peus, C. (2018). Leader Narcissism Predicts Malicious Envy and Supervisor-Targeted Counterproductive Work Behavior: Evidence from Field and Experimental Research. *Journal of Business Ethics*, 151(3), 725-741. <https://doi.org/10.1007/s10551-016-3224-5>
- Buyl, T., Boone, C., & Wade, J. B. (2019). CEO Narcissism, Risk-Taking, and Resilience: An Empirical Analysis in U.S. Commercial Banks. *Journal of Management*, 45(4), 1372-1400. <https://doi.org/10.1177/0149206317699521>

- Capalbo, F., Frino, A., Lim, M. Y., Mollica, V., & Palumbo, R. (2017). The Impact of CEO Narcissism on Earnings Management. *Abacus*, 54(2), 210–226. <https://doi.org/10.1111/abac.12116>
- Chang, L., & Lin, T. J. (2022). The Association among CEO Overconfidence, Ownership Structure and Financial Performance. *European Journal of Business and Management Research*, 7(2), 37–44.
- Christian, P. G., & Sulistiawan, D. (2022). When Narcissus Became a CEO: CEO Narcissism and Its Effect on Earnings Management. *Jurnal Dinamika Akuntansi dan Bisnis*, 9(2), 135–148. <https://dx.doi.org/10.24815/JDAB.V9I2.24947>
- Colline, F. (2022). The Mediating Effect of Debt Equity Ratio on The Effect of Current Ratio, Return on Equity and Total Asset Turnover on Price to Book Value. *Peer-Reviewed Article Jurnal Keuangan Dan Perbankan*, 26(1), 2443–2687. <https://doi.org/10.26905/jkdp.v26i1.6882>
- Cragun, O. R., Olsen, K. J., & Wright, P. M. (2019). Making CEO Narcissism Research Great: A Review and Meta-Analysis of CEO Narcissism. *Journal of Management*, 46(6), 1–29. <https://doi.org/10.1177/0149206319892678>
- Dat, N. D. (2022). Impact of Capital Structure on Firm Performance of Food and Beverage Listed Companies on the Stock Exchange of Vietnam. *International Journal of Current Science Research and Review*, 05(9), 3425–3432. <https://doi.org/10.47191/ijcsrr/V5-i9-21>
- Digdowiseiso, K., Subiyanto, B., & Lubis, R. F. (2022). Analisis Determinan Kualitas Pelaporan Keuangan Perusahaan Non Jasa Keuangan di Bursa Efek Indonesia. *Jurnal Ilmiah Akuntansi Dan Keuangan*, 4(6), 2581–2595.
- Do, Linh. H., T. Luong, K., N. H. Mai, A., A. Dam, L., Pham, Ha. T. L., & Nguyen, Nga. T. (2022). The Impact of Capital Structure on Firm Performance: Case of Listed Firms in Processing and Manufacturing Industry in Vietnam. *International Journal of Economics, Business and Management Research*, 6(3), 96–113. <https://doi.org/10.51505/ijebmr.2022.6307>
- Ernawan, K., & Daniel, D. R. (2020). Pengukuran Narsisme CEO dalam Penelitian di Bidang Bisnis, Manajemen, dan Akuntansi: Sebuah Studi Literatur. *Jurnal Akuntansi Dan Bisnis: Jurnal Program Studi Akuntansi*, 6(1), 46–58. <https://doi.org/10.31289/jab.v6i1.2861>
- Evbayiro-Osagie, E. I., & Enadeghe, I. B. (2022). Capital Structure and Performance of Non-Financial Firms in Sub-Sahara Africa. *International Journal of Finance Research*, 3(1), 49–62. <https://doi.org/10.47747/ijfr.v3i1.682>
- Fasasi, K. A., Ahmad, A. A., & Nnejiwuihe, F. C. (2022). Effect of Debt Financing on Profitability of Listed Agricultural Companies in Nigeria. *International Journal of Education, Business and Economic Research (IJEER)*, 2(5), 66–74. <https://ijeber.com/>
- Feng, J., Lu, D., & Yao, Y. (2022). The Influence of Debt Financing on Enterprise Performance - Based on Empirical Research on Chinese A-share Listed Companies. *Asian Journal of Social Science Studies*, 7(1), 38–45. <https://doi.org/https://doi.org/10.20849/ajsss.v7i1.983>
- Feng, W. (2022). Determinant Factors of Capital Structure of Firms - An Empirical Analysis Based on Evidence from Chinese Listed Retail Companies. *Management Studies*, 10(1), 32–43. <https://doi.org/10.17265/2328-2185/2022.01.004>
- Galariotis, E., Louca, C., Petmezas, D., & Wang, S. (2022). Agency Cost of Debt and Inside Debt: The Role of CEO Overconfidence. *British Journal of Management*, 1–26. <https://doi.org/10.1111/1467-8551.12661>
- Ham, C., Seybert, N., & Wang, S. (2018). Narcissism is a bad sign: CEO signature size, investment, and performance. *Review of Accounting Studies*, 23(1), 234–264. <https://doi.org/10.1007/s11142-017-9427-x>
- Hasyim, M. A. Y., & Nuraeni, Y. A. (2022). Analysis of The Effect of Current Ratio, Total Asset Turnover, Debt to Equity Ratio, Net Profit Margin Toward Return on Equity. *International Journal of Science Education and Technology Management*, 1(1), 1–15. <https://ijsetm.my.id>
- Ho, P. H., Huang, C. W., Lin, C. Y., & Yen, J. F. (2016). CEO Overconfidence and Financial Crisis: Evidence from Bank Lending and Leverage. *Journal of Financial Economics*, 120(1), 194–209. <https://doi.org/10.1016/j.jfineco.2015.04.007>
- Huang, R. (2022). An Analysis of the Effect of Active Executive Departures on the Debt Financing Costs. *Forest Chemical Review*, 337–355. [www.forestchemicalsreview.com](http://www.forestchemicalsreview.com)
- Islam, Z. ul, & Iqbal, M. M. (2022). The Relationship Between Capital Structure and Firm Performance: New Evidence from Pakistan. *Journal of Asian Finance, Economics and Business*, 9(2), 81–92. <https://doi.org/10.13106/jafeb.2022.vol9.no2.0081>
- Kasenda, F. (2020). Determinants of Capital Structure and its Implications for Financial Performance of Construction Services Companies. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17(7), 2334–2346.
- Kim, H. S., & Jang, S. C. (2020). CEO Overconfidence and Firm Performance: The Moderating Effect of Restaurant Franchising. *Cornell Hospitality Quarterly*, 1–17. <https://doi.org/10.1177/1938965519899926>
- Korablev, D., & Podukhovich, D. (2022). CEO Power and Risk-taking Intermediate Role of Personality Traits. *Journal of Corporate Finance Research*, 16(1), 136–145. <https://doi.org/10.17323/jjcf.2073-0438.16.1.2022.136-145>
- Kusiyah, Kalbuana, N., & Rusdiyanto. (2022). Pengaruh Narsisme CEO dan Arus Kas Bebas terhadap Kinerja Perusahaan. *Jurnal Riset Akuntansi Politala*, 5(1), 36–45. <http://jra.politala.ac.id/index.php/JRA/index>

- Liu, L., Le, H., & Thompson, S. (2022). CEO Overconfidence and Bank Systemic Risk: Evidence from U.S. Bank Holding Companies. *International Journal of Finance and Economics*, 27(3), 2977–2996. <https://doi.org/10.1002/ijfe.2308>
- Mira, M., Putri, L. N., Nurmagfirah, Indrayani, S., & Arman, A. (2022). Pengaruh CEO Narsisme dan Ukuran Perusahaan terhadap Kinerja Keuangan pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia. *Jurnal Ilmiah Akuntansi Manajemen*, 5(1), 15–22. <https://doi.org/10.35326/jiam.v5i1.2045>
- Mundi, H. S., & Kaur, P. (2019). Impact of CEO Overconfidence on Firm Performance: An Evidence from S&P BSE 200. *Vision*, 23(3), 234–243. <https://doi.org/10.1177/0972262919850935>
- Mundi, H. S., & Kaur, P. (2022). CEO Overconfidence and Capital Structure Decisions: Evidence from India. *Vikalpa*, 47(1), 19–37. <https://doi.org/10.1177/02560909221079270>
- Murtini, U. (2022). Piutang sebagai Mediasi dalam Struktur Modal Mempengaruhi Return Saham Perusahaan Perbankan. *JRAK*, 18(2), 151–162. <http://dx.doi.org/>
- Naseem, M. A., Lin, J., Rehman, R. ur, Ahmad, M. I., & Ali, R. (2019). Does capital structure mediate the link between CEO characteristics and firm performance? *Emerald Insight*, 58(1), 164–181. <https://doi.org/10.1108/MD-05-2018-0594>
- Olayemi, O. O., & Fakayode, O. P. (2021). Effect of Capital Structure on Financial Performance of Quoted Manufacturing Companies in Nigeria. *European Journal of Accounting, Auditing and Finance Research*, 9(5), 73–89. [www.eajournals.org](http://www.eajournals.org)
- Olsen, K. J., Dworkis, K. K., & Young, S. M. (2013). CEO narcissism and accounting: A picture of profits. *Journal of Management Accounting Research*, 26(2), 243–267. <https://doi.org/10.2308/jmar-50638>
- Olusola, B. E., Mengze, H., Chimezie, M. E., & Chinedum, A. P. (2022). The Impact of Capital Structure on Firm Performance-Evidence from Large Companies in Hong Kong Stock Exchange. *Open Journal of Business and Management*, 10(3), 1332–1361. <https://doi.org/10.4236/ojbm.2022.103072>
- Orji, A., O, N. E., & N, A. (2021). Effect of Debt Financing on Firms Performance in Nigeria. *Journal of Accounting and Financial Management E*, 7(3), 60–72. [www.iardjournals.org](http://www.iardjournals.org)
- Orlu, L., Amini, M.-A. C., & Amadi, C. R. (2022). Debt Capital and Financial Performance of Commercial Banks in Nigeria. *International Journal of Economics and Financial Management*, 7(1), 43–64. [www.iardjournals.org](http://www.iardjournals.org)
- Philemon, M. K., Josephat, C. K., & Ernest, S. (2022). The Mediating Effect of CEO Power on Creditor Rights and Capital Structure among Firms Listed in Nairobi Securities Exchange. *African Journal of Education, Science and Technology*, 7(2), 68–76.
- Rahaman Bala, S. A., & Babangida, M. A. (2022). Capital Structure and Financial Performance of Quoted Deposit Money Banks (DMBs) in Nigeria. *Asian Journal of Economics, Business and Accounting*, 22(5), 1–10. <https://doi.org/10.9734/ajeba/2022/v22i530557>
- Rajamani, K. (2021). Debt Financing and Financial Performance: Empirical Evidence of Indian SMEs Listed in BSE-SME Platform. *Eurasian Economic Perspectives*, 217–230. [https://doi.org/10.1007/978-3-030-63149-9\\_14](https://doi.org/10.1007/978-3-030-63149-9_14)
- Rusydi, M. (2021). The Impact of CEO Narcissism Behavior on Firm Performance through Earnings Management. *ATESTASI: Jurnal Ilmiah Akuntansi*, 4(1), 53–60. <https://doi.org/10.33096/atestasi.v4i1.645>
- Spiff, O., & Oriji, Boniface. A. (2022). The Effect of Capital Structure on the Performance of Marginal Oil Fields in Nigeria. *International Journal of Economics and Financial Management (IJEFM)*, 7(3), 63–79. <https://doi.org/10.56201/ijefm.v7.no3.2022.pg63.79>
- Uremadu, S. O., & Onyekachi, O. (2019). The Impact of Capital Structure on Corporate Performance in Nigeria: A Quantitative Study of Consumer Goods Sector. *Agricultural Research & Technology: Open Access Journal*, 19(5), 212–221. <https://doi.org/10.19080/ARTOAJ.2019.19.556106>
- Yinusa, O. G., Adelopo, I., Rodionova, Y., & Samuel, L. O. (2019). Capital Structure and Firm Performance in Nigeria. *African Journal of Economic Review*, 7(1), 31–56.
- Youssef, S. (2022). Narcissism as a Mediator of the Relationship between Entrepreneurial Orientation and Firm Performance. *International Journal of Family Business Practices*, 5(1), 72–86.
- Zhang, L., Liang, B., Bi, D., Zhou, Y., & Yu, X. (2021). Relationships Among CEO Narcissism, Debt Financing and Firm Innovation Performance: Emotion Recognition Using Advanced Artificial Intelligence. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.734777>