



# Do CEO characteristics impact corporate cash holdings? Insights from consumer goods companies listed on the Indonesia Stock Exchange

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## Abstract

*This study aims to determine the effects of CEO characteristics on the corporate cash holdings of consumer goods industry firms listed on the Indonesia Stock Exchange from 2017–2021. The data used in this study were taken from annual reports of firms. This study utilized a purposive sampling technique to obtain 210 observations. The research model used is an unbalanced panel data analysis with a fixed-effect model approach. The results show that gender diversity, CEO age, and CEO education are positively associated with corporate cash holdings. However, CEO tenure has no significant effect on corporate cash holdings.*

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## 1. Introduction

When a company receives cash flow, the CEO must decide whether the cash will be used to distribute dividends to investors, carry out investment activities, or buy shares or whether it will be saved for other purposes in the future (Suherman, 2017). However, holding excess cash also has negative side effects, one of which is the loss of the company's opportunity to earn profits because cash becomes idle funds, which, of course, can be reduced due to the influence of taxation. According to the upper echelons theory, an organization or company is a reflection of its top management. Decisions taken by a CEO are based on the leader's cognitive values or personality characteristics, which directly impact the company's results, choices, and performance (Hambrick & Mason, 1984). According to Winarta et al. (2018), the characteristics of CEOs that affect cash holdings are their gender, age, tenure, and education.

Gender diversity plays an important role in the business world and is an interesting phenomenon. Several countries have enacted regulations stating that companies must increase the representation of women on their boards of directors. In England, companies' boards of directors should include at least 25% women; in Norway and Germany, these percentages are 40% and 30%. In ASEAN countries, this percentage is 38%. This marks a near-total recovery to the record level of 39% in 2018, following an 11% drop to 28% in 2019. Latin America has also recovered from its 2019 decline, with a 36% proportion of women on the board of directors. This was the most impressive regional increase over the five most recent research reports, up from 20% in 2017. North America has seen more mixed results, but the 2020 score was still increased by four percentage points, and the 2017 figure was increased by 10 percentage points. This region has achieved a 33% representation of women on boards of directors. Overall, APAC was the worst performer, falling just short of the 30% threshold at 28%. The region's increase since 2017 was three percentage points. In 2021, the proportion of women on boards of directors returned to 2019 levels after a small decline in 2020 (Thornton International Ltd, 2021).

In Southeast Asian countries such as Indonesia, several studies have found that gender diversity influences firm cash holdings. Suherman et al. (2021) and La Rocca et al. (2019) reported that the presence of a female CEO in an organization positively influences cash holdings. This reveals that companies led by female CEOs have higher cash holdings than companies led by male CEOs, which is due to the precautionary motive of future unexpected financing. Furthermore, female CEOs are more risk-averse or risk-averse, more conservative about how a company manages cash, and more concerned about how a company spends its cash. Female CEOs also hold more cash to anticipate unexpected events such as natural disasters and liquidity risks compared to male CEOs. A recent survey conducted by HSBC Singapore revealed that 34% of senior executives in Indonesian companies are women. However, Ullah and Kamal (2017), Ajanthan and Kumara (2017), and Atif et al. (2019) reported different results. The existence of a female CEO reduces a company's cash holdings. Gender diversity affects the effectiveness of supervision within a company and benefits shareholders.

Based on the upper echelons theory, older CEOs are more risk-averse and less aggressive than younger CEOs (Hambrick and Mason, 1984), and they prefer internal funding to external funding. (Orens & Reheul, 2013) and Mun et al. (2017) also reported that older CEOs manage cash with precautionary motives and are less concerned with opportunities to increase cash. In contrast, Guha and Rahim (2019) stated that younger CEOs have more money than older CEOs. Older CEOs hold less cash because as CEOs get older, they may be motivated by the idea of leaving a lasting legacy.

Mun et al. (2017), Lim and Lee (2019), and Suherman et al. (2021) found that a longer CEO tenure reduces cash holdings in a company. This shows that when the CEO's tenure

increases, other aspects, such as the experience, expertise, and knowledge of the CEO, develop, which indicates a negative relationship between CEO tenure and cash holdings. However, this research is not in line with the research of (Orens & Reheul, 2013), who stated that CEOs with long tenures tend to hold company cash with precautionary motives. CEOs with long tenures also tend to be risk-averse because they focus not on short-term performance but on long-term performance, such as increasing research and development investments or capital expenditures.

According to the upper echelons theory, CEOs' education is reflected in their organizational characteristics. Mun et al. (2020) and Mun et al. (2017) stated that companies with CEOs majoring in business have higher cash holdings with stable operations and a better understanding of company management than CEOs with other majors. Therefore, there is a significant relationship between educational level and cash holdings. However, this research is not in line with the research of Shabrina and Lubis (2021), who stated that CEOs with a business major and a higher education level do not affect cash holdings.

The discussion above highlights the contradictions in previous results about the effect of CEO characteristics on firm cash holdings. This inconsistency encouraged the researcher of the current work to consider variables associated with CEO characteristics—namely gender diversity, age, tenure, and education—and explore how they affect the cash holdings of companies in the consumer goods industry listed on the Indonesia Stock Exchange while considering the phenomenon the increased number of female CEOs in the position of the board of directors. In several countries throughout all regions of the world, as well as the research gap from previous research on gender diversity, age, tenure, and education on cash holdings. In addition, several studies have used similar samples to examine CEO characteristic variables. Thus, this research is expected to contribute to the existing literature.

## **2. Literature review and hypotheses development**

### *2.1. Agency theory*

According to Jensen (1986), agency theory applies to cases when a relationship or contract is established between management as an agent and shareholders as owners. In carrying out such a contract, management must decide how to use available resources to generate maximum profits for shareholders (owners). The agent, as the party assigned to manage the company, wants to receive a large incentive for the tasks it completes. Based on the description above, the two parties who cooperate in a company have different interests. Thus, the agent might not always act in the interests of the owner, which can cause agency conflicts between management and shareholders. Agency theory predicts that if the agent has an information advantage over the principal and there is a difference in interests between the agent and the principal, then the principal-agent problem will arise. That is, the agent will take actions that benefit himself or herself but harm the principal. Expenses arising from management actions become agency costs that must be borne by the company.

### *2.2. Upper echelons theory*

Hambrick and Mason (1984) revealed that managerial characteristics can predict organizational outcomes since the decisions of top managers are influenced by their cognitive bases and values. According to upper echelons theory, top managers' managerial characteristics can directly or indirectly affect company performance. Hambrick (2007) suggested two moderators in the relationship between managerial characteristics and company performance outcomes: managerial wisdom and the job demands of company executives. Specifically, when managerial wisdom is high, the characteristics possessed by managers can be good predictors of a company's performance. Meanwhile, when executives have high work demands, they have little time to think about decisions and tend to make decisions using mental shortcuts based on their personal backgrounds. Therefore, the relationship between

managerial characteristics and company performance results is stronger when a high level of challenges is faced.

### 2.3. Hypotheses development

Previous studies have shown that female CEOs are perceived as more cautious and less aggressive in the decision-making process than male CEOs. This suggests that female CEOs are more risk-averse when faced with strategic choices that lead to different outcomes in cash policy (Suherman et al., 2021). Female CEOs tend to hold more cash than male CEOs due to the precautionary motive of future unexpected financing. Female CEOs are also more careful and less aggressive in the decision-making process than male CEOs. Female CEOs' more risk-averse nature makes them hold more cash holdings than male CEOs due to precautionary motives. Female CEOs also have higher rates of cash holdings and tend to reduce agency problems between management and investors. Therefore, the researcher argues that female CEOs are positively associated with higher levels of corporate cash holdings to anticipate potential future risks. Thus, the following hypothesis is put forth:

H1: Female CEOs are positively associated with corporate cash holdings.

Based on the upper echelons theory, older CEOs are more risk-averse and less aggressive than younger CEOs (Hambrick and Mason, 1984). They prefer to engage in internal funding instead of external funding. (Orens & Reheul, 2013) claimed that older CEOs will manage cash based on precautionary motives and are relatively unconcerned with opportunities to increase cash. Mun et al. (2017) also stated that younger CEOs negatively affect cash holdings. Thus, older CEOs are associated with increased cash holdings. Younger CEOs appear attractive to investors because they are perceived to use cash holdings more effectively through aggressive investments and challenging management policies, whereas older CEOs are willing to retain cash holdings to stabilize the company's operations. Thus, the researcher developed the following hypothesis:

H2: Older CEOs are positively associated with corporate cash holdings.

According to previous studies, CEOs with long tenures negatively affect cash holdings (Mun et al., 2017; Lim and Lee, 2019; Suherman et al., 2021). As tenure length increases, experience, expertise, and knowledge, among other factors, develop. These factors increase CEOs' confidence in carrying out various tasks, prioritizing long-term investments, and making financial decisions with higher risks to maintain their reputation. CEOs with long tenures are likely to invest their financial resources into long-term projects that can generate positive returns. CEOs execute strategies efficiently and improve business performance to avoid damaging their reputation. Based on upper echelons theory, CEOs with long tenures become confident in their duties and more willing to make challenging financial decisions. Therefore, the researcher argues that cash holdings decrease as CEO tenure increases, as indicated by the following hypothesis:

H3: CEOs with long tenures are negatively associated with corporate cash holdings.

Several studies have examined the effect of CEO education on corporate cash holdings because it is still controversial. A previous study by Mun et al. (2020) showed that companies led by CEOs with business majors and a postgraduate education have a positive effect on cash holdings. Mun et al. (2017) also reported that CEOs with business majors and a postgraduate education positively affect cash holdings while ensuring stable operations and improving the understanding of company management. Therefore, the researcher believes that CEOs with a business major and a postgraduate education hold more cash for precautionary motives and use cash for investment more conservatively than other CEOs. In turn, the level of corporate cash holdings increases. Thus, the researcher has put forth the following hypotheses:

H4a: CEOs with a business major are positively associated with corporate cash holdings.  
H4b: CEOs with a postgraduate education are positively associated with corporate cash holdings.

### 3. Research methods

#### 3.1. Sample

The sampling criteria used in this research are as follows:

- a. Consumer Goods Industry sector listed on the Indonesia Stock Exchange (IDX) from 2017–2021.
- b. The sample should have published audited annual reports consistently and report them on the IDX’s official webpage, and the sample should have adequate financial information.

**Table 1. Sample selection process**

Sample criteria	Total
Companies in the Consumer Goods Industry sector listed on the Indonesia Stock Exchange (IDX) during 2017-2021 period	63
Companies that do not have audited annual reports data during 2017-2021 period	(21)
Sample	42
Number of observations	210

#### 3.2. Operationalization of research variables

This study included three types of variables: a dependent variable, independent variables, and control variables. These variables are as follows:

##### a. Dependent variable

The dependent variable used in this study is cash holdings, which is measured using one indicator:

##### - Cash holdings

According to Suherman et al. (2021) and Atif et al. (2019), cash holdings can be calculated as a company’s cash and cash equivalents divided by its total assets.

##### b. Independent variables

The independent variables used in this study are the characteristics of CEOs, which are proxied as follows:

##### - Gender diversity

Based on previous research (La Rocca et al., 2019; Suherman et al., 2021), gender diversity is measured using three indicators. The first indicator ( $GEND_1$ ) is a dummy variable, marked 1 if the company has a female CEO and 0 otherwise. The second indicator ( $GEND_2$ ) is the percentage of female CEOs on the board of directors. The third indicator ( $GEND_3$ ) is the total number of female CEOs on the board of directors.

##### - CEO Age

Based on previous research (Mun et al., 2017; Guha and Rahim, 2019), CEO age is the difference between the CEO’s year of birth and the current fiscal year.

##### - CEO tenure

Based on previous research (Mun et al., 2017; Lim and Lee, 2019; Suherman et al., 2021), CEO tenure is the difference between the first year a CEO was appointed and the current fiscal year.

##### - CEO education

Based on previous research (Mun et al., 2017; Mun et al., 2020; Shabrina and Lubis, 2021), CEO education is measured using two dummy variables. The first indicator ( $BUSINESS$ ) is marked 1 if the company has a CEO with a business major and 0

otherwise. The second indicator (POSTGRAD) is marked 1 if the company has a CEO with a postgraduate (master) education and 0 otherwise.

c. Control variables

The control variables used in this study are net working capital (NWC), company dividends, and leverage, which are proxied as follows:

- Net working capital  
According to Suherman et al. (2021), NWC can be calculated as the current asset minus current liabilities divided by the total assets owned by a company.
- Dividends  
According to Suherman et al. (2021), dividends are measured with dummy variables, marked 1 if the company paid dividends and 0 otherwise.
- Leverage  
According to Suherman et al. (2021), cash holdings are a company's total debt divided by its total assets.

### 3.3. Analysis method

The researcher used panel data to analyze the influences of the independent variables on the dependent variable. The following regression equation model was used:

$$Y_{i,t} = \alpha + \beta_1 X_{1,i,t} + \beta_2 X_{2,i,t} + \beta_3 X_{3,i,t} + \beta_4 X_{4,i,t} + \sum \text{Controls} + \varepsilon_{i,t}$$

Description:

Y: Cash holdings, measured by:

CH<sub>1</sub> = Cash and cash equivalents/Total assets

X<sub>1</sub>: Gender diversity as measured by three proxies:

GEND<sub>1</sub> = 1 if there is a female CEO, 0 otherwise.

GEND<sub>2</sub> = Percentage of female CEOs on the board of directors.

GEND<sub>3</sub> = Number of female CEOs on the board of directors.

X<sub>2</sub>: Age of CEO.

X<sub>3</sub>: Length of CEO tenure.

X<sub>4</sub>: CEO education, measured by two proxies:

BUSINESS: 1 if the CEO has a business major and 0 otherwise.

POSTGRAD: 1 if the CEO has a postgraduate (master) education and 0 otherwise.

∑Controls: Sigma control variables (NWC, DIV, and LEV).

## 4. Results and discussion

### 4.1. Descriptive statistics

Descriptive statistics provide the results of the data in an understandable way. The information presented includes mean, maximum, minimum, and standard deviation values obtained from each sample of consumer goods industry companies listed on the Indonesia Stock Exchange from 2017–2021. Overall, 42 companies and 210 observational data points were examined. Table 2 shows the descriptive statistics of cash holdings (the dependent variable) and gender diversity, age, tenure, and education (the independent variables). The control variables consist of net working capital, dividends, and leverage.

### 4.2. Multicollinearity test

The multicollinearity test was carried out by considering the correlation coefficients between variables. If an intervariable correlation is greater than 0.80, then there is a high degree of multicollinearity.

**Table 2. Descriptive statistics**

Variables	Mean	SD	Max.	Min.	Obs.
CH <sub>1</sub>	0.124	0.135	0.632	0.001	210
GEND <sub>1</sub>	0.200	0.401	1.000	0.000	210
GEND <sub>2</sub>	0.180	0.224	1.000	0.000	210
GEND <sub>3</sub>	0.943	1.244	6.000	0.000	210
AGE	55.224	8.781	81.000	35.000	210
TENURE	11.914	11.879	50.000	1.000	210
BUSINESS	0.552	0.498	1.000	0.000	210
POSTGRAD	0.248	0.433	1.000	0.000	210
NWC	0.256	0.330	0.869	-2.416	210
DIV	0.686	0.465	1.000	0.000	210
LEV	0.418	0.274	2.900	-0.013	210

**Table 3. Pearson correlation**

Variables	1	2	3	4	5	6	7	8	9
1.GEND <sub>1</sub>	<b>1</b>								
2.GEND <sub>2</sub>	0.64	<b>1</b>							
3.GEND <sub>3</sub>	0.37	0.77	<b>1</b>						
4.AGE	-0.30***	-0.33***	-0.18***	<b>1</b>					
5.TENURE	-0.14***	-0.04***	-0.03***	0.49	<b>1</b>				
6.BUSINESS	0.11	0.18	0.02**	-0.16***	-0.01***	<b>1</b>			
7.POSTGRAD	0.01**	0.07*	0.09*	-0.23***	-0.30***	0.11	<b>1</b>		
8.NWC	0.16	0.02**	-0.03***	0.02**	-0.11***	0.19	0.07*	<b>1</b>	
9.DIV	-0.14***	-0.07***	0.14	0.24	0.07*	0.09*	-0.15***	0.19	<b>1</b>
10.LEV	-0.15***	-0.17***	-0.04***	0.00***	0.11	-0.17***	0.07***	-0.71***	-0.19***

The \*, \*\*, \*\*\* sign signifies significance levels of 10%, 5% and 1%

Table 3 shows no strong relationship between variables, as indicated by the absence of any intervariable correlation coefficient values above 0.80.

#### 4.3. Regression results

Table 4 shows the results of the panel data regression regarding the effect of gender diversity, as well as the age, tenure, and education of CEOs, on cash holdings while considering the control variables of net working capital, company dividends, and leverage.

#### 4.4. Discussion

This study aimed to determine the effect of gender diversity and CEO age, tenure, and education on corporate cash holdings. The significance levels used in this study were 0.01, 0.05, and 0.10 ( $\alpha = 1\%$ ,  $5\%$ , and  $10\%$ ). The effects of the independent variables on the dependent variable (while considering several control variables) in a sample of consumer goods industry companies listed on the Indonesia Stock Exchange from 2017–2021 are as follows:

Table 4 shows the probability values of GEND<sub>1</sub>, GEND<sub>2</sub>, and GEND<sub>3</sub> in six regressions of cash holdings less than 5% (0.0375, 0.0197, 0.0129, 0.0416, 0.0174, 0.0471), which indicates that gender diversity positively affects cash holdings. Thus, having a female CEO on the board of directors is positively associated with the cash holdings of the examined companies. Therefore, H<sub>1</sub> is accepted. The six regressions above are in line with the research conducted by Suherman et al. (2021), Adhikari (2018), La Rocca et al. (2019), and Xu et al. (2019), who said that gender diversity, proxied by GEND<sub>1</sub> (the presence of a female CEO in a company), GEND<sub>2</sub> (the percentage of females on the board of directors) and GEND<sub>3</sub> (the number of females on the board of directors), positively affects cash holdings. They show that female CEOs are more risk-averse than male CEOs when faced with strategic choices that lead to different outcomes in cash policy.

**Table 4. Regression results**

	CH <sub>1</sub>					
	1	2	3	4	5	6
Intercept	(0.0526) <i>0.0382**</i> [2.0894]	0.0521 <i>0.0276**</i> [2.2237]	0.0539 <i>0.0245**</i> [2.2711]	0.0470 <i>0.0594*</i> [1.8988]	0.0523 <i>0.0256**</i> [2.2536]	0.0454 <i>0.0501*</i> [1.9735]
GEND <sub>1</sub>	0.0044 <i>0.0375**</i> [0.7782]	0.0116 <i>0.0197**</i> [1.3794]	- - -	- - -	- - -	- - -
GEND <sub>2</sub>	- - -	- - -	0.0185 <i>0.0129**</i> [1.3689]	-0.0002 <i>0.0416**</i> [-0.0105]	- - -	- - -
GEND <sub>3</sub>	- - -	- - -	- - -	- - -	0.0075 <i>0.0174**</i> [2.4026]	0.0070 <i>0.0471**</i> [2.0004]
AGE	0.0013 <i>0.0019***</i> [3.1568]	0.0012 <i>0.0030***</i> [3.0168]	0.0012 <i>0.0010***</i> [3.3595]	0.0014 <i>0.0010***</i> [3.3618]	0.0012 <i>0.0012***</i> [3.2871]	0.0013 <i>0.0011***</i> [3.3339]
TENURE	-0.0002 <i>0.4717</i> [-0.7214]	0.0001 <i>0.7362</i> [0.3375]	-0.0001 <i>0.5031</i> [-0.6711]	-0.0001 <i>0.7707</i> [-0.2920]	-0.0001 <i>0.5193</i> [-0.6457]	1.3981 <i>0.9966</i> [0.0042]
BUSINESS	0.0064 <i>0.0063***</i> [0.8687]	- - -	0.0069 <i>0.0422**</i> [1.1736]	- - -	0.0045 <i>0.0164**</i> [0.8147]	- - -
POSTGRAD	- - -	0.0113 <i>0.0291**</i> [1.3493]	- - -	0.0113 <i>0.0114**</i> [1.3421]	- - -	0.0098 <i>0.0182**</i> [1.2360]
NWC	0.0212 <i>0.0016***</i> [3.2058]	0.0221 <i>0.0003***</i> [3.6623]	0.0211 <i>0.0020***</i> [3.1430]	0.0220 <i>0.0005***</i> [3.5746]	0.0207 <i>0.0022***</i> [3.1162]	0.0219 <i>0.0005***</i> [3.5516]
DIV	-0.0101 <i>0.0052***</i> [-2.8309]	-0.0097 <i>0.0078***</i> [-2.6933]	-0.0106 <i>0.0140**</i> [-2.4846]	-0.0102 <i>0.0050***</i> [-2.8461]	-0.0099 <i>0.0162**</i> [-2.4298]	-0.0098 <i>0.0145**</i> [-2.4723]
LEV	0.2896 <i>0.2896</i> [-1.0625]	0.3123 <i>0.3123</i> [-1.0135]	0.3131 <i>0.3131</i> [-1.0119]	0.2943 <i>0.2943</i> [-1.0521]	0.3395 <i>0.3395</i> [-0.9579]	0.3230 <i>0.3230</i> [-0.9912]
R <sup>2</sup>	0.9770	0.9797	0.9782	0.9804	0.9807	0.9845
Adjusted R <sup>2</sup>	0.9701	0.9736	0.9717	0.9746	0.9749	0.9799
F-stat	142.6653	162.0622	150.6319	168.3215	170.6005	214.2963
Prob. (F-stat)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Observations	210	210	210	210	210	210
FEM/REM	FEM	FEM	FEM	FEM	FEM	FEM

The \*, \*\*, \*\*\* sign signifies significance levels of 10%, 5% and 1%. The numbers in italics are the p-values. The numbers in parentheses are the values of the t-stat.

Female CEOs tend to hold more cash than male CEOs because of the precautionary motive of unexpected financing. Female CEOs are more careful and less aggressive than male CEOs when making decisions. Female CEOs have a higher level of cash holdings to reduce agency problems between management and investors. This also supports the theory proposed (Jensen & Meckling, 1976) about agency cost, which occurs when agents and managers want to maximize their wealth. Thus, there is a high probability that agents or managers do not always act in the interests of the principal or shareholders. Management may use company cash for their personal interests, not to maximize shareholders' wealth, and management can easily use cash holdings to fund unprofitable projects. Agency theory predicts that if the agent has an information advantage over the principal and if the agent and principal have conflicting interests, a principal-agent problem occurs, as the agent takes actions that benefit them but harm the principal. The burden arising from management's actions becomes the agency cost that must be borne by the company.

Based on previous results and from an agency cost perspective, female CEOs on the board of directors can influence the board's effectiveness and indirectly help shareholders by reducing opportunistic behavior that may arise due to high cash flow (Suherman et al., 2021). The higher levels of cash held by female CEOs also suggest that they avoid over-investing, which can lead to agency conflicts with shareholders. Thus, agency costs can be reduced, potentially increasing shareholders' wealth. In addition, female CEOs with short tenures are likely to avoid long-term investments, which supports the ideas of Koh (2007), who



documented that female CEOs have greater incentives than male CEOs to retain cash holdings for short-term investments and anticipate potential future risks. This argument is in line with overcoming potential conflicts of interest that may arise related to the free cash flow theory proposed by (Jensen, 1986). In addition, female CEOs often have shorter tenures than male CEOs. This tendency allows them to be more inclined to reduce corporate risk because they are believed to be more conservative when dealing with financial matters.

Table 4 shows the probability values of age in six regressions of cash holdings less than 1% (0.0019, 0.0030, 0.0010, 0.0010, 0.0012, 0.0011), indicating that CEO age positively affects cash holdings. Thus, it can be concluded that CEO age is positively associated with the cash holdings of the companies examined in this study. Therefore, H<sub>2</sub> is accepted.

The six regressions above are in line with the research conducted by Mun et al. (2017), who showed that younger CEOs negatively affect cash holdings, while older CEOs positively affect cash holdings. Furthermore, Mun et al. (2017) reported that younger CEOs seem attractive to investors because they are perceived as using cash holdings more effectively through aggressive investments and challenging management policies, whereas older CEOs tend to save cash holdings to ensure the stability of company operations. Prendergast and Stole (1996) reported similar findings. From a short-term career focus perspective, Younger or newly appointed CEOs tend to invest more aggressively than older CEOs because they want to be recognized by demonstrating their abilities and performance in the short term. Therefore, they are willing to develop new products and take risks in new, challenging investments. Thus, older CEOs are associated with more cash holdings.

Table 4 shows the probability values of tenure in six regressions of cash holdings greater than 10% (0.4717, 0.7362, 0.5031, 0.7707, 0.5193, 0.9966), indicating that CEO tenure does not affect cash holdings. Thus, it can be concluded that CEO tenure has no significant association with cash holdings among the investigated companies. Therefore, H<sub>3</sub> is rejected. The six regressions above align with the research conducted by Guha and Rahim (2019), who found that CEO tenure has no effect on cash holdings.

Table 4 shows the probability values of business major and a postgraduate education in six regressions of cash holdings less than 1% (0.0063) and 5% (0.0291, 0.0422, 0.0114, 0.0164, 0.0182), indicating that CEO education positively affects cash holdings. Thus, CEOs with business majors and a postgraduate (master) education are positively associated with the cash holdings of the companies observed in this study. Therefore, H<sub>4a</sub> and H<sub>4b</sub> are accepted.

The six regressions above align with the research conducted by Mun et al. (2020) and Mun et al. (2017), who indicated that CEOs with business majors and a postgraduate education positively influence cash holdings by providing stable operations and improving the understanding of company management. The accumulation of experience, expertise, and knowledge encourages CEOs to be more confident when carrying out various tasks, prioritizing long-term investments, and making high-risk financial decisions to maintain their reputations. Thus, they prefer to reduce excess cash holdings.

## 5. Conclusion

This study aimed to determine the effect of CEO characteristics on the corporate cash holdings of companies in the consumer goods industry listed on the Indonesia Stock Exchange from 2017–2021. According to the results, gender diversity, CEO age, and CEO education positively influence cash holdings, while CEO tenure does not influence cash holdings.

This research are a)expected to contribute thoughts, insights, and empirical evidence regarding the influence of CEO characteristics on the cash holdings companies in the consumer goods industry sector listed on the IDX. It is also able to become additional literature and a means of developing theoretical knowledge learned in lectures, especially in the field of finance, b)expected to provide knowledge, insights, and considerations for investors making

investment decisions through the appointment of a CEO with the most suitable characteristics for the company, especially in the Indonesian consumer goods industry market. Investors can choose a CEO based on their characteristics, including their gender, age, tenure, and education. A CEO with the right characteristics can optimize a company's corporate cash holdings, c) expected to provide alternative recommendations and scientific considerations for consumer goods industry companies in Indonesia, especially in terms of making the best decisions regarding hiring CEOs based on their gender, age, tenure, and education, and d) expected to be used by the government to develop policies regarding the importance of knowledge about CEO characteristics that can affect companies' cash holdings.

Based on the outcomes of the current study, future studies might focus on financial companies to initiate comparative studies and use other variables, such as CEO duality, CEO ownership, CEO origin, and CEO compensation, to measure how capable a CEO is at managing cash.

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