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Women Directors and Firm Profitability: The Role of Corporate Environmental Responsibility Engagement

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ABSTRACT

Women in the professional world are still experiencing inequality, discrimination, and obstacles in achieving top management positions. The role of women in improving the company's financial performance is still being debated to this day. This study aims to investigate the role of women directors in 129 manufacturing companies in Indonesia from 2015 to 2019. The data obtained were analyzed using structural equation modelling – partial least square (SEM-PLS). This study found that corporate environmental responsibility engagement did not mediate the relationship between women directors and firm profitability. This study found a significant negative relationship between women directors and corporate environmental responsibility but a significant positive influence between corporate environmental responsibility engagement and firm profitability. However, this study found no significant relationship between women directors and profitability.

Keywords: Upper Echelon Theory; Sustainability; Women Directors; Governance and Gender; Corporate Environmental Responsibility Engagement.

INTRODUCTION

Gender inequality continues to be an issue experienced by female employees worldwide. There are inherent and interactive barriers that prevent women from taking advantage of the opportunities available in the workplace [12]. This condition shows that the steps of the United Nations in achieving goals related to gender equality are still quite far away. Gender discrimination is deeply rooted in social norms prevailing in most societies, shaping the role of women to be limited to being subordinates rather than decision-makers [65], [29]. Leaders' commitment to overcoming gender inequality is still low, and they tend to resist this change [71], [20]. Women are considered passive [32], so they are unsuitable for managerial positions. This assumption further hampers women's career opportunities to achieve top management positions.

One of the causes of gender inequality that continues to occur in companies is the patriarchal culture that has existed for a long time and persists to this day. In Indonesia, patriarchal culture is often found in all spheres of life, including economic activities [60]. The discrimination experienced by women in the workplace also occurs due to factors such as the glass ceiling effect, differences in linguistic style, and other gender stereotypes [45], [49], [36]. The management of companies that men dominate tends to prevent women from accessing resources and developing their potential but, on the contrary, enriches themselves economically and materially [19]. This condition emphasizes the importance of understanding the role of women in increasing profitability and company value.

Upper echelon theory explains how each director's knowledge, experience, and values will have different influences on the decision-making process [26]. As the company's controller, the composition of the board of directors, which has women members, can motivate the implementation of risky activities in increasing the value of the company and at the same time taking into account the expected rate of return [51]. [27] explains the essence of this theory is that the interpretations made by executives regarding the situation at hand, and the consequences of their choices, are strongly influenced by their backgrounds, such as believed values, gender, experience, and personality.

The role of women directors in increasing company profitability is still being debated today. Previous researchers found a positive influence of women on board on financial performance [57], [11], [16], [30]. The better the performance of corporate governance that places women on the board of directors causes an increasing trend of demand for the presence of women on the board of directors [15]. On the other hand, some other researchers found negative results on the influence of women directors on financial performance [75], [14]. [46] also found that women on board tend to reduce the company's profitability because the loyal nature of their subordinates boomerangs on the high cost of employees. While [64], [31] did not find a significant effect on the woman on board on company performance.

Companies with a dominant female composition show higher strategic capabilities in environmental activities to achieve sustainability [53], [70], [24]. Sustainability theory which focuses on management capability in managing effectively and efficiently its limited resources without compromising the company's ability to meet its future needs, has three main aspects, including financial, social, and environmental, or called Triple Bottom Line (TBL) [62], [22]. [9] emphasized that entrepreneurs should make decisions by taking into account the values of the environment around them. Stakeholders are starting to realize the importance of environmental issues, increasing pressure to actively implement corporate environmental responsibility engagement (CERE) [13], [10], [42], [66]. Corporate environmental responsibility engagement (CERE) is a company's commitment to environmental responsibility. With this responsibility, the company integrates environmental factors into its daily operations and management [40].

The board of directors has a vital role in making decisions regarding the planning of the CERE strategic plan. Companies that are active in implementing and reporting CERE activities will improve the company's image, which then impacts the profitability level. Therefore, this study uses CERE as a mediating variable for the influence of women directors on profitability. Previous studies have also shown a positive relationship between the influence of women on board on environmental responsibility activities [53], [35], [41] and the effect of environmental responsibility activities on company profitability [59], [67], [33], [17].

Issues related to women on the board of directors with their impact on profitability and environmental responsibility still occur in countries with developing economic status, including Indonesia. Until now, Indonesian women still face the problem of gender inequality in social practice. The notion of patriarchy which is still a culture in everyday professional life [76], also occurs in the industry that dominates GDP income in Indonesia, namely the manufacturing industry. One issue that continues to be raised is the inequality of wages received by women compared to men in the manufacturing industry [38]. The small number of women and wage inequality due to gender is an indication of a glass ceiling phenomenon in Indonesian manufacturing companies. Indonesia also has not yet officially drafted regulations regarding the minimum number of female representatives on the board of directors, which has begun to be widely applied in other countries such as Malaysia and the European Union. In addition to internal issues related to gender inequality, the manufacturing industry raises environmental issues by polluting the surrounding air, soil, and water, which is dangerous for sustainable growth. One of them is what happened to companies in Jakarta, the centre of the country's economy. In 2019, DKI Jakarta Government imposed sanctions on 47 companies that were proven to pollute the environment through waste from the manufacturing industry [23]. This study provides an update by discussing the role of CERE as a mediating variable in good corporate governance.

This research contributes theoretically and practically to the role of women on the board of directors. This study also contributes to the development of literature on Upper echelon theory and sustainability theory by proving the relationship between the influence of women directors on profitability, the influence of women directors on CERE, the influence of CERE on profitability, and the influence of CERE in mediating the influence of women directors on profitability.

Hypothesis Development

Women directors on Company Profitability

Differences in the cognitive characteristics of female and male directors will affect governance management and decision-making. This condition is explained by upper echelon theory as a phenomenon that underlies the performance of different companies, including influencing the level of company profitability [28], [61]. Women in top management also have a better level of supervision which affects decision-making and company performance [45], [37]. The leadership style of women who tend to prioritize democracy and participation will positively impact the decisions of the board of directors [1], [48]. Profitability, which results from financial performance, is not always stable and requires various considerations to generate company profits.

Research [16] on 369 companies listed on the Standard & Poor's 500 (S&P 500) for the period 2004 - 2015 showed a positive influence of women on the board of directors on the level of company profitability. [30] research on companies listed on Bursa Malaysia for the period 2008 – 2009 also found that women directors positively affected company profitability as measured by ROA. The higher the number of women in the composition of the board of directors, the higher the level of company profitability. Therefore, a hypothesis is formulated:

H1: Women directors positively affect company profitability

Women directors on Corporate Environmental Responsibility Engagement

Upper echelon theory explains how the level of psychology and the nature of the members of the board of directors influence decision-making, including environmental responsibility activities [47], [48]. Women at the board of directors level are more focused on the company's overall performance by being oriented to the stakeholders' interests. Therefore, female directors perform better in social activities, especially environmental management strategies [39], [71]. Also, referring to the upper echelon theory, women on the board of directors will promote regulations related to compliance with environmental responsibility, as reflected in the Corporate Environmental Responsibility Engagement (CERE). Commitment to implementing CERE is a form of female directors' focus on stakeholder needs.

Research [53] on US oil and gas companies mentioned in the 2009 Forbes.com Special Report, The Global 2000, shows that the presence of female directors positively influences environmentally oriented strategies, thereby increasing environmental responsibility activities. Research [35] proves that companies listed in Standard and Poor's 1500 (S&P 1500) with governance with board gender diversity tend to have fewer environmental violations. These environmental indicators are some of the aspects of CERE. Thus, companies that place women on their boards of directors will optimize the implementation of CERE. Therefore, a hypothesis is formulated:

H2: Women directors positively affect Corporate Environmental Responsibility Engagement

Corporate Environmental Responsibility Engagement on Company Profitability

Problems related to the environment today have received much attention from investors, the government, and the public as company stakeholders. Meanwhile, from management trying to maximize financial investment, stakeholders, including investors, began to emphasize the importance of companies carrying out activities related to environmental responsibility [13], [74]. Activities related to environmental responsibility or corporate environmental responsibility engagement (CERE) are all management activities that aim to reduce the impact of their operational activities on the environment [66], [50]. Referring to the sustainability theory, the current competitive advantage will be achieved by balancing the three components of the triple bottom line (TBL): economic, social, and environmental. The increasing number of investors who demand environmental responsibility from companies causes an increase in investments in companies that are actively running CERE [3]. In the long term, CERE activities will also bring profits to the company because the annual profits exceed the initial costs of CERE implementation [75].

Research by [33] proves how the company's commitment to environmental CSR activities will improve the company's image and lead to customer commitment to consuming the products/services produced. This condition will provide sustainable benefits for the company. [59] also proved that activities related to the environment will positively impact economic performance, including profitability obtained from testing 243 companies that received environmental rankings from Franklin Research and Development Corporation. Therefore, a hypothesis is formulated:

H3: Corporate Environmental Responsibility Engagement (CERE) positively affects company profitability.

Corporate Environmental Responsibility Engagement mediates the relationship of women directors to Company Profitability

Environmental sustainability is a global issue in all sectors, including the economy. This condition makes corporate environmental responsibility engagement (CERE) a trend among economic actors and becomes a source of competitive advantage for companies [40], [43]. Referring to the upper echelon theory, the board of directors with different backgrounds, knowledge, and expertise will influence the company's strategic decisions. It will improve financial performance, including the company's profitability [63]. Female directors have higher ethical and social skills and are likely to show a higher social and environmental concern [58], [54]. Women on the board of directors will encourage the implementation of CERE as a strategy to increase company profitability. Previous research found a positive influence of women on board on environmental responsibility activities [35], [41], [53] and the effect of environmental responsibility activities on company profitability [17], [33], [59], [67]. Therefore, a hypothesis is formulated:

H4: Corporate Environmental Responsibility Engagement (CERE) mediates the influence of women directors on company profitability.

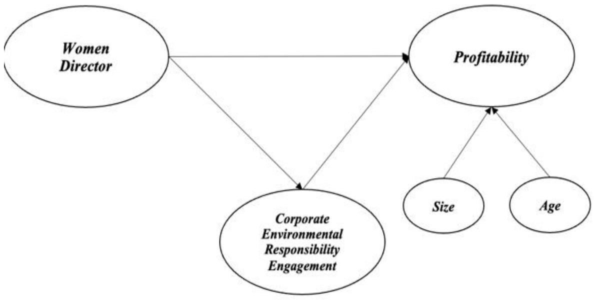

Figure 1. Research Model

RESEARCH METHOD

Data collection in this quantitative study is sourced from annual reports and specifically from the sustainability statements of manufacturing companies listed on the Indonesia Stock Exchange (IDX) from 2015 – 2019. The annual report is accessed through the Indonesia Stock Exchange (IDX) website www.idx.co .id and the official website of each related company. The 2015 – 2019 year was taken into consideration by the COVID-19 pandemic in 2020, which caused inequality in financial performance for companies in all sectors in Indonesia. During this period, the number of manufacturing companies listed on the Indonesia Stock Exchange was 182 companies with 910 firm-year data. The criteria for the research data processed are (1) a manufacturing company; (2) a company listed on the Indonesia Stock Exchange for the period 2015 – 2019; and (3) companies reporting complete annual reports for the 2015 – 2019 period. The number of final samples of research that match the criteria is 129 manufacturing companies with 645 firm-year data.

Measurement

Women directors are defined as the influence of women on the board of directors, as illustrated by the proportion of female directors over the total number of board directors in a company refers to [69]. The measurement of women directors is obtained through the formula:

Women board members = % board members who are women (1)

Corporate Environmental Responsibility Engagement (CERE) is a company's involvement related to environmental responsibility. Referring to the research of [40], the analysis of the application of CERE is divided into five parts. First, legal consciousness (CERE 1) which consists of three parts, namely: (CERE 1.1) checking whether the company follows the Global Reporting Initiative (GRI), (CERE 1.2) whether the company has made environmental disclosures or reporting, and (CERE 1.3) whether the company has environmental sanctions. If the company has followed GRI (CERE 1.1) and made environmental disclosure (CERE 1.2), it will be given a score of 1 and a score of 0 if it has not been implemented. The part of the company that was subject to environmental sanctions (CERE1.3) would be given a score of 0 if it was exposed to environmental sanctions and a score of 1 if it was not exposed to environmental sanctions. Second, social evaluation (CERE 2) checks whether the company has ever received an environmental award. The company will be given a value of 1 if it has implemented it, and if not, it will be given a value of 0. Third, eco-friendly production (CERE 3) is done by checking whether the company causes or reduces pollution during production. The company will be given a value of 1 if it has implemented it, and if not, it will be given a value of 0. Fourth, low-carbon technology (CERE 4) checks whether the company applies environmentally friendly technology. The company will be given a value of 1 if it has implemented it, and if not, it will be given a value of 0. Fifth, green management (CERE 5) checks whether the company has ISO 14000 certification. The company will be given a value of 1 if it has implemented it, and if not, it will be given a value of 0. CERE measurement is carried out by evenly distributing the values of all indicators of the CERE section.

Profitability in this study is measured using Return on Assets (ROA) due to its ability to show the net income generated by the use of assets owned [34]. ROA calculation is obtained from the following formula:

$$ROA_{i,t} = \frac{EATi,t}{Total\ Assetsi,t} \quad (2)$$

Information

$ROA_{i,t}$ = Return on Assets of the company i in year t
$EAT_{i,t}$ = Earnings After Tax of company i in year t
Total $Assets_{i,t}$ = Total Assets of the company i in year t

This study uses two control variables, namely company size, which is measured using the natural logarithm of total assets and listing age which is measured using company listing age.

The analysis in this study used descriptive statistics and Partial Least Squares-Structural Equation Modeling (PLS-SEM). Descriptive statistics provide an overview of the secondary data collected succinctly. PLS-SEM is intended to analyze data and test hypotheses. PLS-SEM was chosen because it proved effective in processing secondary data from the perspective of measurement theory [25]. SEM-PLS can also test complex research models simultaneously with several indicators in measuring the latent variables [56].

Table 1. Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Dev.
Women director	645	00,00	100	12,00	17,58
CERE11	645	00,00	1,00		
CERE12	645	00,00	1,00		
CERE13	645	00,00	1,00		
CERE2	645	00,00	1,00		
CERE3	645	00,00	1,00		
CERE4	645	00,00	1,00		
CERE5	645	00,00	1,00		
ROA	645	-150	270	5,21	18,87
SIZE	645	2.522	3.349	2.855,31	155,97
AGE	645	00	40	20,53	9,04
Valid N (listwise)	645				

PLS-SEM testing was carried out through indirect testing of the research model with mediating role analysis using [5], which states that: (1) if the coefficient on the direct effect is the same as when the mediation variable is added and remains significant, then mediation is not supported; (2) if the coefficient of direct effect after adding the mediation variable has decreased but is still significant, then the form of mediation is partial mediation; (3) if the coefficient on the direct effect after adding the mediation variable becomes insignificant, then the form of mediation is complete mediation. However, mediation testing can only be done if the direct test results show a significant value.

RESULTS AND DISCUSSION

The descriptive statistical analysis results can be seen in table 1, which shows the average value of women directors is 12.00, it implies that on average the composition of women is 12% of the total number of the board of directors with a standard deviation of 17.58. The lower mean value indicates that the proportion of women on the board of directors tends to vary in each company studied. Likewise, the average value of ROA is 5.21, which is lower than the standard deviation of 8.87. So it can be concluded that the ROA values tend to vary.

WarpPLS 8.0 application was used to process the data. In the first iteration measurement model analysis test, several items did not match the factor loading criteria because the value was less than 0.7 (Hair et al., 2018), namely CERE 1.1 (0.236) and CERE 1.3 (0.514). Therefore, both indicators were removed in further analysis. In the results of the second iteration, all indicators and variables meet the validity and reliability tests, so it is continued with structural model analysis. The results of hypothesis testing are presented in Figure 2.

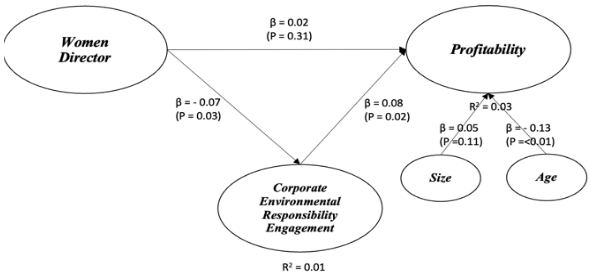

Figure 2. Indirect effect

Table 2. Indirect Effect

Variable	Path Coefficient	
	CERE	*Profitability*
Women Directors	-0.07**	0.02*
CERE		0.08**
R^2	0.01	0.03

Source: Research Data (Processed)
Notes: ***p < 0.01
**p 0.01-0.05
*p > 0.1

The figure shows that the influence of women directors on company profitability is insignificant (β=0.02; p-value=0.31; R^2=0.03). Thus, the first hypothesis (H1) states that women directors are positively associated with profitability, is not supported. The effect of women directors on CERE is negative and significant (β=-0.07; p-value=0.03; R^2=0.01). Thus, the second hypothesis (H2) states that women directors are positively associated with CERE, is not supported. The figure shows CERE's positive and significant effect on profitability (β=0.08; p-value=0.02; R^2=0.03). Thus, the third hypothesis (H3) states that CERE is positively associated with profitability is supported. Referring to [5] the mediation role test cannot be continued because it does not meet the requirement that the direct effect of the dependent variable on the independent variable must be significant (β=0.02; p-value=0.31). This result is reinforced by the Sobel

Test, which shows a z value of 0.96 or less than 1.98, so it can be said that CERE does not mediate the effect of women directors on profitability. Thus, the fourth hypothesis (H4) states that CERE mediates the effect of women directors on profitability and is not supported. Another alternative to testing the mediating role can be done by referring to [44], which states that a variable mediates the independent variable's effect on the dependent variable if the independent variable's p-value on the mediating variable and the p-value of the mediating variable on the dependent variable are both significant. The data processing results show that the effect of women directors on CERE is significant but negative (ß=-0.07; p-value=0.03; R2=0.01), and CERE on profitability is significant and positive (ß=0.08; p-value =0.02; R2=0.03). Thus, according to [44], CERE mediates the effect of women directors on profitability, but the effect of women directors on CERE is shown to have different results from the hypothesis.

Women Directors and Company Profitability

This study proves that the existence of women directors does not affect a company's profitability. These results do not support the prediction of the upper echelon theory related to gender diversity that will improve financial performance, especially profitability. [31], [58], [64] also found that there was no effect of women directors on the company's financial performance. This condition may occur due to the low proportion of women on the board of directors compared to men, so suggestions or voices from women on the board of directors are not maximally conveyed and are close to men's voices in strategic decision-making. The placement of female leaders should also not only be in top management positions but also need representation in other strategic positions such as the board of commissioners or at the manager level to influence company performance [73].

In Indonesia alone, the number of women's involvement in the board of directors until 2020 is still relatively low at only 38% or less than 50% of the total issuers or public companies [55]. The Ministry of SOEs, as the regulator, targets that in 2021 the number of female directors will reach 15% [4]. This number is relatively low compared to the European Union's decision which targets the minimum number of female representatives on the board of directors to be 40% [7]. Weak socialization of regulations related to gender equality in the world of work and the still patriarchal solid culture are some of the causes of the low proportion of women occupying directorship positions in manufacturing companies in Indonesia. Women in the minority on the board of directors cause the invisible influence of the presence of women on top management decisions related to the company's strategic plans to improve company performance and increase profitability.

Women directors and Corporate Environmental Responsibility Engagement

This study shows the negative influence of women directors on the company's CERE. These results do not support the hypothesis that predicted there is a positive influence of women directors on CERE. Women directors are more concerned with social responsibility activities than environmental issues [6]. Male directors respond more to environmental responsibility issues [2], [18]. Thus, the placement of women on the board of directors will encourage decision-making related to social or economic activities and reduce CERE optimization efforts. [8] proved that a more portion of female directors would make environmental performance decline.

In Indonesia, although the number of female representatives on the board of directors in companies is starting to show an increase, the reflection on the number of compliance with environmental responsibility activities is decreasing. In 2020, the environmental regulation compliance rate reached 88%, which decreased to only 75% in 2021. So it can be concluded that the higher the number of women on the board of directors, the negative impact on the attention and efforts of the board of directors in implementing CERE.

Corporate Environmental Responsibility Engagement and Firm Profitability

This study proves that implementing CERE in operational activities will increase the company's profitability. These results support the sustainability theory, which states that competitive advantage will be achieved if the company also focuses on environmental responsibility activities. These results support research [33] and [59], which also found that environmental responsibility activities positively affect profitability. Profitability obtained related to CERE implementation is generally sustainable. Environmental activities that focus on one of the main focuses of reducing costs incurred due to damage from environmental waste produced will provide premium benefits for the company. This condition occurs because the benefits of complying with environmental management regulations are higher than the total waste management costs incurred [59]. Companies that actively run CERE will improve the company's image, create a positive impression for consumers of the products or services produced, and further increase company profits.

The Indonesian government has encouraged operating companies to implement CERE actively. The ROPPER award is one of the government's appreciations as stakeholders for companies that actively carry out environmental responsibility activities. In 2021, companies that won the GOLD as many as 47 companies, GREEN 186 companies, BLUE 1,670 companies, RED 645 companies, and BLACK 0 companies (Ministry of Environment and Forestry, 2021). Compliance with the PROPER principle by companies in Indonesia has reached 75%. The assessment is carried out not only from waste management activities but also includes certification and the company's creation of green environmental innovations. This condition will improve customers' image, which will then improve financial performance and profitability.

Corporate Environmental Responsibility Engagement mediates the effect of women on board on Firm Profitability

This study proves that CERE did not mediate the effect of women on board on profitability. This conclusion was obtained referring to the [5] and supported by Sobel Test results. According to the upper echelon theory, the differences in characteristics, including gender, will give different results to strategic decisions taken by companies. If referring to [44], CERE mediates the effect of women directors on profitability because the influence of women directors on CERE and CERE on profitability shows significant results. However, contrary to the researcher's hypothesis, women directors have a negative effect on the company's CERE implementation. [8] found that a higher number of female directors is associated with lower environmental performance. This condition occurs because women focus more on social than environmental problems [6]. Men are more aware of the importance of being involved in CERE. Thus, when the company adds the proportion of female directors, the level of CERE implementation will decrease.

This study proves that sustainability theory underlines the balance of the environment, social, and economy in creating profits for the company. Companies that actively implement CERE will increase the company's long-term profitability. This result support [17] and [59] which showed a similar result. The costs incurred when investing in environmentally responsible activities are lower compared to the benefits the company will get in the long term. Pressure from stakeholders, including the government and the public, encourages companies to comply with environmental protection regulations and be aware of environmental damage that may arise from company operations. The image of the company and products or services obtained from compliance with environmental regulations become a sustainable investment that has added value in the eyes of customers and, in the long run, will bring excessive profits to the company. Based on these results, the positive customer response to the implementation of CERE is still not supported by the proportion of women on the board of directors in Indonesia.

CONCLUSION

This study investigates the effect of women on board on company profitability in Indonesian manufacturing companies. Furthermore, this study attempts to prove the role of CERE in mediating the influence of women on board on company profitability. Using a sample of 182 companies with 910 firm-year data collected from the official website of the Indonesia Stock Exchange (IDX) and tested using partial least squares-structural equation modelling (PLS-SEM), this study uses upper echelon theory and sustainability theory to explain the relationship between variables and test the research hypothesis. The results showed that: (1) women directors did not affect profitability; (2) women directors had a negative effect on CERE; (2) CERE has a positive effect on profitability; and (4) CERE did not mediate the effect of women on board on profitability.

This study provides several managerial contributions, including providing a comprehensive understanding to the top management to pay attention to diversity on the board of directors to be able to optimally contribute to the profitability of the company. Although this study did not find a relationship between women directors and profitability, women on the board of directors can contribute to improving company performance on other indicators. This study also provides a deeper understanding for the management and all stakeholders regarding the role of CERE in increasing company profitability. This study provides strategic information for better policies related to women directors and CERE for the government as regulators and supervisors, such as the Indonesian Financial Service Authority. Companies that benefit financially from engaging in environmental activities will also provide social benefits to society. Last but not least, this study can be a reference for the next researchers researching topic of women directors or CERE.

This study has the following limitations: (1) the available information is limited by the low number of manufacturing companies that are publicly listed in the IDX (Indonesia Stock Exchange) as a capital market in an emerging country. Future researchers are encouraged to expand the samples to other capital markets in the neighboring countries. Second, considering Indonesia as a country that has adopted a two-tier board structure, further research can prove the effect of women on commissioners on company profitability. Third, there are many factors affecting the company's performance. This study only focuses on the impact of women directors and CERE on profitability with ROA as a measure of company performance, future research can consider other financial performance measurements and non-business performance indicators to provide more comprehensive results.

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