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Determinant Of Female Directors and Corporate Risk Disclosure on Firm Value

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ABSTRACT

The increasing focus on gender diversity in corporate boards highlights the impact of female directors on corporate governance practices and their ability to enhance firm value through effective oversight and risk disclosure. Despite the strategic importance of corporate risk disclosure in emerging markets, many firms in Indonesia still lack comprehensive reporting, limiting investor confidence and firm value. This study aimed to investigate the influence of female directors on firm value and the mediating role of corporate risk disclosure in this relationship. Using a balanced panel dataset comprising 884 observations from non-financial firms listed on the Indonesia Stock Exchange, this study employed Partial Least Squares (PLS) for hypothesis testing and path analysis. The findings revealed a positive impact of female directors on firm value, mediated by corporate risk disclosure. Female directors improved governance by promoting transparency and signaling risk management capabilities to investors, consistent with signaling theory. These results provide actionable insights for policymakers to enhance board diversity as a strategy for value creation in emerging economies.

1. INTRODUCTION

The implementation of comprehensive corporate risk disclosure policies is essential for providing clear and reliable information about a company's prospects; however, many firms still face challenges in adopting such practices effectively (Kamaruzaman et al., 2019). A 2014 survey by the Association of Chartered Certified Accountants (ACCA) revealed that a significant number of stakeholders find risk-related

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information in financial statements to lack specificity and relevance, often biased toward emphasizing positive outcomes over potential risks. As noted by Ghani et al. (2016), a major obstacle to effective risk disclosure is the reluctance of managers to engage in transparent reporting. This lack of transparency not only complicated the interpretation of risk-related data but also underscores the necessity of verifying the status and reliability of risk information disclosed in annual reports.

There is a growing need from many stakeholders, including the general public, financial experts, and shareholders, for firms to adopt a more transparent and open approach in disclosing pertinent information about their operations (Capasso & Rossi, 2013). According to Linsley and Shrivies (2005), these developments significantly impact the level of trust that stakeholders place in corporate annual report disclosures. Corporate risk disclosure is a strategic tool that organisations can use to provide relevant information to investors, facilitate efficient resource allocation, and fulfill corporate responsibility. By enhancing stakeholders' understanding of the business risks faced by organisations, particularly investors, corporate risk disclosure contributes to greater accountability and transparency (Chinonyerem et al., 2017). Despite its importance, many companies on the Indonesian Stock Exchange (IDX) still lack comprehensive risk disclosure. Recent studies have shown that while corporate risk disclosure in Indonesia had improved slightly, the disclosure level remained at approximately 35–40%, which was far below developed countries such as the United States and the United Kingdom, where disclosure levels exceeded 75% (Ibrahim & Aboud, 2023; Wahyuningrum et al., 2024; Faisal et al., 2017). This gap underscores the need for enhanced regulatory enforcement to boost awareness and implementation of risk disclosure practices, ultimately improving firm value.

The Board plays a critical role in overseeing the disclosure of information required by various stakeholders, particularly investors, to enhance firm value. Recent studies have reinforced the positive relationship between corporate risk disclosure and firm value. For example, Mahmudah et al. (2023) demonstrated that voluntary disclosure significantly impacted firm valuation, particularly in emerging markets like Indonesia, where regulatory frameworks are evolving. Similarly, Liu et al. (2024) emphasized that improved risk transparency reduced investor uncertainty, ultimately boosting firm value, as predicted by the Signaling Theory. These findings build on earlier research by Chao et al. (2010), Stiglbauer (2010), and Buckby et al. (2015), highlighting the strategic importance of corporate risk disclosure (CRD) in fostering investor confidence and enhancing firm credibility. Consequently, enhanced transparency can effectively demonstrate to investors the company's credibility and subsequently augment the corporation's overall value. The notion presented aligns with the principles of the Signalling Theory, which posits that a heightened degree of corporate openness is likely to enhance the overall worth of a corporation (Connelly et al., 2011).

Based on the principles of the Signaling Theory, firms with a higher level of risk management tend to show a better level of profitability. As a result, these firms tend to communicate their advanced risk management capabilities to the market by reporting them in their annual reports (Musleh et al., 2018). The phenomenon of managers providing more risk disclosures to wider stakeholders about their competence in managing risk effectively can be explained by providing signals in the form of information in financial reports (Abraham & Cox, 2007; Hassan, 2009). The existence of female directors on the firm's board will provide high-quality information and function as a means of signaling to the market, which is one of the corporate governance mechanisms. Thus, the existence of female directors is crucial to internally provide oversight

and externally mitigate risks, thereby addressing deficiencies in the firm's management framework (Gul et al., 2011).

Prior studies have revealed that board diversity has been shown to influence business decisions significantly (Ntim et al., 2013; Van der Walt & Ingley, 2003). It is reasonable to suggest that including women on the board can improve strategic decision-making and increase voluntary corporate risk disclosure (Hillman et al., 2007; Ward & Forker, 2017). Several research also found that female directors are less risky and more open to change as well as encourage better board behavior (Adams and Funk, 2012; Clarke, 2005). In addition, the existence of female directors is considered more effective in monitoring the board and tends to show higher CRD reporting levels (Adams and Ferreira, 2009; Barako and Brown, 2008; Ntim and Soobaroyen, 2013).

Numerous studies have also demonstrated a positive correlation between female directors and firm value. Erhardt et al. (2003) found a positive correlation between the presence of female directors and return on investment in major American corporations. Carter et al. (2003) also revealed that the presence of female directors had a positive impact on business value. Furthermore, an increase in the number of women serving on the boards of Spanish corporations was associated with an enhancement in firm value (Campbell and M'nguez-Vera's, 2008). The lack of academic research on the study of female directors on CRD and firm value, which was still limited in Indonesia (Darmadi, 2013; Nurkhin et al., 2020), served as the impetus to initiate this research. Hence, the purpose of this research was to investigate CRD employed by female directors and its impact on enhancing firm value.

This study contributes to the corporate governance and accounting literature on how the presence of female directors can lead to increased CRD and firm value. First, previous studies (Adams and Ferreira, 2009; Ntim and Soobaroyen, 2013) have only investigated the relationship between the presence of female directors and CRD because, in general, firms have different disclosure responsibilities, making it difficult to detect whether corporate risk disclosure has a good or bad impact on the firms. This research overcame this shortcoming by adding the direct effect of corporate risk disclosure on firm value, where all sample firms were assumed to have disclosed risks and had a positive effect on firm value. Therefore, this research design allowed us to provide reliable evidence on the further relationship between female directors on CRD and firm value. In doing so, this study provides relevant findings for investors, as the presence of female directors has a significant and positive impact on firm value. Furthermore, CRD can mediate the relationship between female directors and firm value. This research concluded that female directors can increase the transparency of corporate risk disclosures and subsequently increase firm value.

Second, this study integrated the Signalling Theory to explain the role of female directors in the board's oversight of risk disclosure, which will also have an impact on firm value. This Theory plays a role in providing signals or information for board effectiveness as one of the mechanisms of good corporate governance. In the context this study corporate risk disclosure became a mediating preference that allowed for the optimisation of board relationships in achieving firm value. Therefore, this study also emphasized that the ability of female directors to monitor and advise will improve the board's decision to disclose risks in the future to achieve investor satisfaction, which will ultimately increase company value (Musleh et al., 2018). Third, this research highlights the importance of female board participation in increasing shareholder value. In addition, this study provides empirical support for the idea that the presence of female directors

had a positive effect on the extent to which firms disclose information about risk management. These effects are achieved through increased board oversight, increased openness, and reduced information asymmetry. As a result, the overall value of the firm increases and provides valuable insights for corporate governance in assessing the pros and cons of openness and accountability. This information will enable investors and stakeholders to assess investment risks more effectively.

The rest of this paper is organized as follows: The next section, describes the theoretical background and hypotheses. The third section, presents the methodology. The fourth section shows the results. Finally, the last section is where the conclusion, discussion, and some practical implications are presented.

2. LITERATURE REVIEW

2.1 Signalling Theory

Spence (1973) explained that the sender transmits signals in the form of information that determines the status of the firm and benefits the receiver. The focus is on the annual report to communicate information issued by firms to people outside the firm through signals or signs described by the Signalling Theory. Managers need external parties such as investors to invest capital, creditors, suppliers and consumers. Signalling shows the validity of the information the agent communicates to the principal through risk disclosure in the annual report. According to Brigham and Houston (2021), the actions taken by the firm to inform investors about how management views the firm's prospects are referred to as signals. The importance of the information provided by firms can be measured by its impact on investors' investment decisions. Firms provide signals by disclosing the risks that are currently likely to occur. As a result, investors consider whether to invest money in the firms.

Part of good governance systems is to promote the role of female directors in giving signals to the board about information disclosure. This is demonstrated by the disclosure of information in the company's financial reports; information can be a form of risk disclosure. By disclosing risks, management is given a positive value by external parties because the firms dare to disclose problems that may occur in the future. Investors will assess the institution's ability to manage risk based on risk disclosures. According to the Signaling Theory, a larger board combines a variety of business expertise, which allows female directors to play a more effective role, thereby disclosing more risk information in the firm's annual report (Singh, Mathur, & Gleason, 2004). A larger number of female directors will be more effective in their controlling role, thereby increasing the risk disclosure of the firm.

The profits generated by the firms are distributed to investors through dividend distribution activity. This activity will encourage investors to maintain their investment and will increase firm value. Financial condition and risk information provide details of past, present, and future circumstances affecting the company's existence. This information is essential to investors and entrepreneurs, as the Signal Theory has described the existence of information asymmetry between stakeholders and management. Therefore, managers are required to prepare financial reports that provide stakeholders with detailed information about the firm's state. The Signal Theory explains the firm's motivation to disclose financial information to other parties to receive a positive response from investors (Elzahar & Hussainey, 2012). In addition, firms provide

risk disclosures because there is a knowledge gap between the firms and external parties, so it is hoped that investors will know the firms's profile better if the firms are more transparent.

2.2 Female Directors and CRD

The significance of including women in business boards has recently garnered global attention. As exemplified in the Norwegian government which implemented measures to guarantee a minimum of 40% female representation in corporate employment (Wang & Kelan, 2013). Including diverse genders on corporate boards has been identified as a potential mechanism for enhancing corporate governance and mitigating the limitations of existing management structures in effectively managing risks (Gul et al., 2011). Hence, in light of the assertion made by Miller and Triana (2009) on the positive influence of board diversity on a firm's strategic orientation, it can be postulated that the inclusion of female directors serves as an effective mechanism of corporate governance to optimize shareholder value, primarily through the mitigation of business risks.

This position aligns with the findings of Adams and Funk (2012), which suggested that female directors exhibited lower levels of risk-taking behaviour and more receptiveness to change than their male counterparts. Furthermore, as Adams and Ferreira (2009) stated, boards comprising female directors demonstrated greater efficacy in overseeing board activities than their male counterparts. According to the findings of Barako and Brown (2008), it has been observed that board diversity had a favourable influence on the extent of voluntary disclosure. Bart and McQueen (2013) stated that female directors exhibited higher cooperation and communication skills. Furthermore, firms have effectively disclosed risk reports that go beyond the scope of obligatory risk disclosures. Oliveira et al. (2011) showed that firms must comprehensively disclose voluntary risk reporting, encompassing natural catastrophe risks, raw material risks, operational risks, and other relevant risk disclosures. Based on the available evidence, it was posited that female directors had a higher propensity to disclose risk information than their male counterparts voluntarily.

H1: Female directors have a positive effect on CRD.

2.3 Female Directors And Firm Value

The presence of a more significant number of women in senior leadership positions has led to an increased recognition of the significance of gender diversity as a pertinent matter within the realm of business. According to Terjesen et al. (2009), Hillman et al. (2003), and Bilimoria (2000), women possess distinct forms of capital that contribute to a broader range of skills and experiences within the boardroom. This, in turn, has been shown to enhance decision-making processes and leadership styles (Boyle et al., 1990) and promote greater board independence, leading to anticipated enhancements in board oversight (Carter et al., 2003). Furthermore, Clarke (2005) asserted that women played a significant role in promoting improved board behaviour.

The primary focus of scholarly research revolves around examining the financial implications associated with the presence of female directors on corporate boards. If women can enhance firm value, it is crucial to prioritize their inclusion and representation within that firm. Martinez-Jimenez et al. (2020) conducted a study that suggested the presence of female directors on corporate boards can enhance board

effectiveness and contribute distinct resources to the organization, ultimately leading to an increase in firm value. Multiple studies have also demonstrated a positive correlation between the presence of women on corporate boards and firm value (Erhardt et al., 2003; Carter et al., 2003; Campbell & M'nguez-Vera, 2008).

H2: Female directors have a positive effect on firm value.

2.4 CRD and Firm Value

Firms that provide comprehensive information to stakeholders will achieve their goals in meeting their information needs (Al-Moataz & Hussaney, 2013). In addition, firms with a high level of risk tend to disclose risk information that is more comprehensive and accurate and describes the actual situation (Amran, Manaf Rosli Bin, & Che Haat Mohd Hassan, 2008; Alshirah & Alshira'h, 2024; Alajmi & Al-Shammari, 2024). Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes (2007) explained that when the hazards associated with a particular activity are known, immediate action is taken to reduce the risk. Sometimes hazards can only be reduced to a certain extent before residual risks develop. According to the Signalling Theory, investors may not be able to invest only in high-quality companies that successfully identify and manage risks (Linsley & Shrivies, 2006; Blue, Faraji, Khotanlou, & Rezaee, 2024). However, investors will be more comfortable investing with companies that dare to disclose their risks. Therefore, it is important for firms to voluntarily disclose information to alert the market to the requirements that must be met. Currently, the annual report information developed by firms does not all voluntarily disclose risks to stakeholders and this is a challenge in itself because management can communicate information in such a way that it has a positive impact on firm value.

H3: CRD has a positive effect on firm value.

2.5 Female Directors, CRD, and Firm Value

The existence of a governance framework is demonstrated by the transparent disclosure of relevant information in financial statements, which may include CRD. Management will benefit external stakeholders by providing risk disclosure and risk prevention measures through its willingness to disclose prospective challenges that may arise. Investors will assess the firm's ability to manage risk effectively by analyzing the CRD. Investors will assess the threats faced by firms and their likely successes through corporate risk disclosure.

Firms with less diverse boards tend to exhibit lower CRD reporting levels than those with more varied boards. Barako and Brown (2008) argued that board diversity favors voluntary disclosure. Hence, the inclusion of female directors can be regarded as a mechanism of corporate governance, serving the purpose of internal monitoring and external risk allocation, to some extent, to mitigate deficiencies in the management framework (Gul et al., 2011). The Signalling Theory posited that firms with higher proficiency in risk management are likely to exhibit higher levels of relative profitability. Consequently, these companies may be vested in communicating their superior risk management capabilities to the market, which can be achieved by disclosing such information in their annual reports (Musleh et al., 2018).

Various research has indicated a positive correlation between enhanced CRD and firm value (Stiglbauer, 2010; Buckby et al., 2015). Stiglbauer (2010) showed that it was discovered that there exists a positive association between the methods employed by corporations for reporting and their valuation. This

finding was based on an analysis of 113 German-listed businesses that heightened transparency had minimal influence on a firm's operational success and it enhanced the influence of investors on the organization. Hoyt and Liebenber (2008) examined that the disclosure of risk had a noteworthy influence on the value of a corporation. Consequently, enhanced transparency has the potential to demonstrate to investors the firm's credibility and subsequently augment firm value.

The inclusion of female directors within corporate boards contributes to the provision of high-quality financial information. It serves as a means of signalling to the market, enhancing business value. The notion presented aligns with the principles of the Signalling Theory, a theoretical framework positing that an elevated degree of corporate openness will lead to a rise in business value (Connelly et al., 2011). Based on the abovementioned analysis, a CRD system that includes female directors can enhance firm value.

H4: CRD mediates the effect of female directors on firm value.

3. METHODOLOGY

3.1 Sample and Data Collection

This study utilized the entire sample of non-financial firms (442 listed firms) that underwent an initial public offering and satisfied the specified criteria, subsequently being listed on the Indonesian stock market for two years, specifically in 2018 and 2019. First, the selection of this two-year sample was based on the relevance of these years in reflecting economic and business conditions prior to the onset of the COVID-19 pandemic, which officially began affecting Indonesia in late 2019. These years provided a stable baseline for analyzing the relationship between female directors, risk disclosure, and firm value without the confounding effects of the pandemic. By excluding data from 2020 onwards, the study ensured that the findings were not influenced by the significant disruptions to business operations and risk management strategies caused by the pandemic. Second, using data from this period also helped to minimize the risk of significant environmental or regulatory changes that could affect the research findings. However, the choice of period may also affect the generalisability of the findings. In addition, the author outlined and considered these limitations in the next section. Finally, it was imperative to consider companies with a comprehensive dataset required for this research. The dataset had 884 company-year observations across multiple industrial sectors. The hypothesis was tested using panel-balanced data and the PLS (Partial Least Squares method).

3.2 Measurement

This study used the metric of female directors (FDR) as a proportion of the board, calculated by dividing the number of FDR by the total number of board members. The measurement utilized in this study was derived from previous research conducted by Carter et al. (2003), Campbell and Mínguez-Vera (2008), and Wang and Kelan (2013). In order to assess the extent of corporate risk disclosure, this study employed binary variables, assigning a value of 1 to indicate CRD by a company and a value of 0 to indicate the absence of CRD by a corporation. As mentioned above, the measurement has been used by prior scholars, specifically (Seebeck & Vetter, 2021). To measure firm value, this research used the proxy most widely used by researchers, namely Tobin's Q (Daines, 2001; Jo & Harjoto, 2011). This ratio measures how valuable a company's asset book is to investors in terms of prospects. To measure Tobin's Q this study used

the formula (Market value of shares + Market value of all debt) / (total assets). Consistent with prior governance studies, this study tested several control variables that were considered to be relevant in the phase of the regression analyses. This study included the return on assets (ROA) by Wang and Kelan (2013), the financial leverage (LEV) by Campbell and Mínguez-Vera (2008), and the board size (BOARDSIZE) by Adams and Ferreira (2009).

3.3 Data Analysis and Model

The present study employed a quantitative methodology, specifically Partial Least Squares (PLS), to perform path analysis for data analysis purposes. Given that this study relied on a singular signal assessing the outlier model was unnecessary. Hence, this study solely assessed the internal model, specifically the direct and indirect effects.

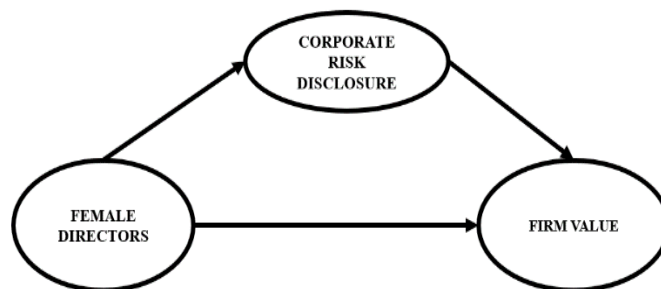


Figure 1. Theoretical Model

Source: Authors' own work

4. RESULTS AND DISCUSSION

4.1 Results

This study used model fit and quality indices built by PLS–SEM analysis as shown in Table 1. The results indicated that the average path coefficient (APC) was 0.143 ($p < 0.001$) and the average r-square (ARS) was 0.039 ($p < 0.001$), prompting that the model was compatible with the statistics (Weerawardena, Mort, Salunke, Knight & Liesch (2015). Furthermore, the AVIF (1.060) in the PLS analysis revealed that the data was free from multicollinearity problems. Finally, GOF (global fit index) assessed the measurement model's suitability and structure. The results of GOF calculations (0.199) indicated that the model was compatible with small-category data. Furthermore, the evaluation of model fit and quality indices in PLS–SEM also assessed the predictive relevance using the Stone-Geisser Q-squared(Q²) coefficient. The value of Q² for each endogenous variable must be greater than zero, which indicated that the model had a suitable predictive value.

Table 1: Model Fit and Quality Indices

Quality Indices Criteria	Values	Rule of thumb
Average path coefficient (APC)	0.143***	p-value <0.05
Average R-squared (ARS)	0.039***	p-value <0.05
Average block VIF (AVIF)	1.060	<3.3
Tenenhaus GoF (GoF)	0.199	≥1.00 (small effect size), ≥0.25 (medium effect size), ≥0.36 (large effect size).
Q-squared (Q2) coefficient:		
FDR	0.058	>0 (acceptable
Firm Value	0.028	predictive model)
Notes: ***p<0.001		

Source: Authors' own work

A closer examination of the data, as summarized in Table 2, revealed key characteristics that contextualized these findings. The average proportion of female directors (FDR) in the sample was relatively low at 2.7%, reflecting the need for greater gender diversity in Indonesian firms. Despite this limitation, the significant relationship between FDR and CRD indicated that even minimal representation of female directors can lead to meaningful improvements in disclosure practices. Furthermore, the average CRD score of 12.6% was notably lower than the global benchmarks of 35–40% observed in developed economies (Ibrahim & Aboud, 2023; Wahyuningrum et al., 2024). This highlighted the substantial gap in transparency practices in emerging markets like Indonesia. Finally, the characteristics of Tobin's Q (mean = 2.388), also detailed in Table 2, suggested that firms in the dataset exhibited relatively positive valuations despite lower CRD levels. This indicated that the presence of female directors and their influence on CRD provided incremental value in contexts where transparency was generally limited. These findings reinforced the importance of fostering board diversity and enhancing disclosure practices as strategies for improving governance and firm value.

Table 2: Preliminary Statistics and Correlation Matrix

Variables	Mean	SD	Tobin's Q	FDR	CRD	ROA	LEV	SIZE
Tobin's Q	2.388	45.183	1.000					
FDR	0.027	0.017	0.125***	1.000				
CRD	0.126	0.147	0.112***	0.237***	1.000			

Variables	Mean	SD	Tobin's Q	FDR	CRD	ROA	LEV	SIZE
ROA	0.865	5.452	-0.002	0.030*	0.088***	1.000		
LEV	19.765	1.884	0.068***	0.040**	0.185***	0.112***	1.000	
SIZE	0.194	0.247	0.034	-0.004	-0.057**	0.022	-0.124***	1.000

Notes: *p < 0.10, ** p < 0.05, *** p < 0.01

Source: Authors' own work

This study revealed that female directors positively influenced CRD and firm value. As shown in Table 3, the statistical significance of the relationship between female directors and CRD ($\beta = 0.112$, $p < 0.01$) reinforced the argument that board diversity contributed to voluntary disclosure practices, consistent with findings by Gul et al. (2011) and Adams & Ferreira (2009). Moreover, Table 3 highlights the positive association between CRD and firm value ($\beta = 0.237$, $p < 0.01$), emphasizing the critical role of CRD in building investor trust and reducing information asymmetry, as supported by prior studies (Stiglbauer, 2010; Buckby et al., 2015). The mediation analysis presented in Table 4 further demonstrated that CRD mediated the relationship between female directors and firm value ($\beta = 0.025$, $p < 0.01$). This finding underscored the strategic importance of risk disclosure as a mechanism for transmitting signals to investors about the firm's governance and risk management capabilities, aligning with the principles of the Signaling Theory (Connelly et al., 2011).

Table 3: Regression Result (Model 1 & Model 2)

Variables	Model 1 (Tobin's Q)	Model 2 (Tobin's Q)
FDR	0.104*** (0.050)	0.088 ***(0.024)
CRD		0.237*** (0.031)
ROA	0.003 (0.024)	0.004 (0.024)
LEV	0.157*** (0.024)	0.165*** (0.024)
SIZE	-0.058*** (0.024)	0.053** (0.024)
Adj R2	0.056	0.023

Notes: Standardized beta coefficients; t statistics in parentheses N = 884 * p < 0.10, ** p < 0.05, *** p < 0.01

Source: Authors' own work

Table 4: Indirect Effect

Effect	Coefficient (Standardized)	Standard errors	P values
Tobin's Q → FDR	0.088	0.024	<0.01
FDR → CRD	0.112	0.024	<0.01
CRD → Tobin's Q	0.237	0.031	<0.01
FDR → CRD → Tobin's Q	0.025	0.030	<0.01

Notes: N = 884
 * p < 0.10, ** p < 0.05, *** p < 0.01

Source: Authors' own work

4.2 Discussion

This study highlights the significant role of female directors in driving improvements in CRD and firm value. Female directors were shown to enhance the quality and comprehensiveness of risk disclosures, addressing gaps in transparency and information asymmetry. These disclosures provided valuable insights into the firm's risk management strategies and future outlook, which reinforce investor confidence (Larkin et al., 2013). The findings aligned with the Signaling Theory, wherein transparent risk disclosure served as a credible signal of a firm's capabilities and governance quality (Connelly et al., 2011). The mediating role of CRD in the relationship between female directors and firm value further emphasized its strategic importance. Firms with better CRD practices demonstrated an ability to proactively address risks, thereby achieving higher valuations. This result corroborated previous studies (Stiglbauer, 2010; Buckby et al., 2015) that underscored the dual benefits of enhanced disclosure: reducing uncertainty for stakeholders and showcasing the firm's governance strengths.

Additionally, the presence of female directors on corporate boards contributed to a more comprehensive and balanced approach to governance. Their diverse perspectives and focus on ethical decision-making improve the board's capacity to manage complex challenges and ensure accountability. The findings highlighted that gender-diverse boards were more likely to engage in voluntary risk disclosures, which provide deeper insights into the firm's operational and strategic priorities. The study also shed light on the Indonesian context, where CRD levels remained lower compared to developed economies. Despite this, female directors had demonstrated a measurable impact on improving risk disclosure practices in this market. This underscored the potential for board diversity to serve as a transformative force in enhancing transparency and governance quality, even in emerging markets.

The results provide a deeper understanding of how female directors and CRD contribute to firm value. The emphasis on voluntary disclosure practices and ethical governance offers valuable insights into the mechanisms through which female directors influence corporate outcomes. The positive association between CRD and firm value highlights the critical importance of transparency and the strategic role of board diversity in shaping governance practices and organizational success.

5. CONCLUSION

This study investigated the impact of female directors on firm value. Specifically, this study examined the mechanism of CRD that mediated the effect of female directors on firm value. The results indicated a positive correlation between female directors and their ability to improve the quality of CRD, which led to an increase in firm value. Corporate risk disclosure can potentially serve as a method of increasing firm value through the presence of female directors. This implies that the practice of risk disclosure, together with a diverse composition of the board, is a successful strategy for identifying and managing risks. This finding is consistent with the principles of the Signalling Theory that the implementation of a gender enhancement policy is a potential strategy to communicate to external stakeholders the firm's commitment to strengthening risk disclosure and mitigation efforts as outlined in the annual report. Corporate risk disclosure is an essential indicator for investors to carefully evaluate and deliberate on their investment decisions related the firm.

Consequently, female directors can potentially enhance the firm's overall worth. Female directors often bring different experiences, backgrounds, and perspectives to board meetings. This helps in facing complex situations with a broader perspective (Bernile et al., 2018). In addition, female directors tend to focus more on ethics and compliance issues. They can help ensure that the company operates ethically and complies with regulations. Furthermore, the firm value increases in proportion to the number of individuals who choose to invest in it and investors tend to choose the firm that discloses risk in their financial statement. Finally, the investigation also provides valuable insights for regulators and policymakers involved in public sector governance. Numerous theoretical and practical implications of this study are discussed as follows.

5.1 Theoretical Implications

This study extends knowledge on the important role of female directors in increasing firm value and makes several important theoretical contributions. First, previous studies have only focused on diverse leadership teams that improve CRD (Allini et al., 2016; Adams and Funk, 2012; Ntim et al., 2013). Female directors also increased the transparency of environmental, social, and governance disclosures (Wasiuzzaman and Wan Mohammad, 2020). Gjergji et al. (2023) found that family firms with a high proportion of female directors had better strategy disclosure outcomes. While there is strong evidence that female directors improve risk disclosure, Carbone et al. (2023) found that a large female board compromises corporate strategy. As explained earlier, this research is the first effort to explicitly explain the relationship between female directors and firm value specifically in Indonesia. This relationship is particularly important for the current study. Research analysis shows that female directors increase firm value and supported by Campbell and Mínguez-Vera (2008) that found diverse gender representation has a positive impact on economic outcomes. Diversity enhances creativity, innovation, and leadership (Carter et al., 2003). This finding is also supported by Erhardt et al. (2003) who found a positive relationship between board diversity and return on investment and assets. Thus, board diversity, especially the presence of female directors will tend to affect firm value.

Second, based on the Signaling Theory, the finding contributes further to the insight mechanisms relating to female directors and firm value. Corporate risk disclosure becomes a mediating preference that allows for the optimization of the existence of female directors in achieving firm value. In addition, as far

as we know explicitly addressing the mediating role of corporate risk disclosure in the relationship between a certain board composition, such as female directors and firm value has not gained increasing attention. This study extends research streams, which examine the role of corporate risk disclosure mechanisms underlying the relationship between female directors and firm value. Gul et al. (2011) argued that gender diversity in major businesses increases the informativeness of stock prices. This is attributed to the process of heightened public transparency. A favourable correlation was also seen between gender diversity and the informativeness of stock prices. According to the principles of the Signalling Theory, organizations with a higher level of proficiency in risk management are likely to exhibit a better degree of relative profitability (Ibrahim & Aboud, 2023; Krause, 2006). Consequently, these firms are motivated to communicate their superior risk management skills to the market by publishing such information in their annual reports (Musleh et al., 2018). The concept of the Signalling Theory pertains to the phenomenon of information asymmetry between management and stakeholders. This imbalance mainly stems from disparities in the knowledge of the intents or quality of information.

5.2 Managerial Implications

Gender diversity on corporate boards reduces executive opportunism, reduces shareholder disputes, and increases business value. Board effectiveness depends on gender composition. Campbell and Mínguez-Vera (2008) stated that adding women to corporate boards can increase shareholder value by bringing diverse viewpoints to decision-making. Martínez-Jiménez et al. (2020) also found mixed results regarding how women on corporate boards influence their effectiveness. This reinforces the governance literature that conditions in Indonesia, a developing country, also require more proportional diversity and illustrates that women also play a major role in strategic decision-making.

Female directors on corporate boards provide high-quality financial information and serve as a means of signalling to the market. Hence, the existence of diverse genders on corporate boards can work as a mechanism for enhancing information openness. This serves the purpose of internal monitoring and external risk provision, addressing certain deficiencies within the firm's management structure (Gul et al., 2011). Female directors within the firm's leadership structure will enhance managerial effectiveness and organizational efficiency. This, in turn, is anticipated to foster improved corporate governance practices, therefore increasing the firm's appeal to potential investors. Signal theory assumes risk disclosure can serve as a valuable indicator for investors, offering them a sense of assurance regarding the firm's prospects. The firm value is related to the number of investors who choose to invest in it. This implies that when the risk reported in a firm's financial statements is disclosed, there is a corresponding increase in the firm value.

5.3 Limitations and Future Research

Future research may explore alternative methodologies for assessing corporate risk disclosure, such as using a risk index. Additionally, including novel risk disclosure items and creating a risk disclosure index that needs to be addressed in the present study could be considered. The present study is constrained by the limitations of the sample selection and the duration of the research, which solely focused on companies listed on the Indonesia Stock Exchange from 2018 to 2019. Hence, it is imperative to exercise prudence when extrapolating the findings of this study to encompass additional nations and non-publicly traded small

enterprises. Furthermore, it is imperative to consider supplementary sources of risk information, such as websites, interim reports, and prospectuses, given the emphasis of this study on annual reports.

A compelling subject for future discourse entails a more comprehensive examination of the influence exerted by female directors who possess affiliations or outgoing connections with shareholders on the disclosure of company risks. This analysis should also encompass other dimensions of diversity, including but not limited to colour, nationality, education, and professional background. Incorporating additional independent variables, such as ownership structure and corporate political links, could influence female directors' conduct about risk disclosure. Numerous scholarly investigations have employed secondary data research methodologies to augment comprehension about the imperative utilization of survey or interview techniques to advance and refine insights about the potential mechanisms that can augment CRD.

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7. CONFLICT OF INTEREST STATEMENT

The authors declare that there are no commercial, financial, personal, or institutional conflicts of interest related to this research.

8. AUTHORS' CONTRIBUTIONS

Rizqa Anita: Conceptualisation, methodology, data collection, formal analysis, investigation, and writing-original draft. **Nurmala Sari:** Conceptualisation, literature review, methodology, and writing-review and editing. **Agus Seswandi:** Data curation, formal analysis, validation, and interpretation of results. **Muhammad Rasyid Abdillah:** Validation, theoretical framing, and writing-review and editing. **Nor Balkish Zakaria:** Validation, critical review, and final manuscript editing. All authors have read and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

9. DATA AVAILABILITY/SUPPLEMENTARY MATERIALS

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request. The data were collected from publicly available annual reports of firms listed on the Indonesia Stock Exchange. No additional supplementary materials are provided with this manuscript.

10. ETHICS STATEMENT

The authors declare that this research did not involve human participants, animal subjects, clinical data, or experimental procedures requiring direct ethical approval. The study was conducted using secondary data

obtained from publicly available annual reports of firms listed on the Indonesia Stock Exchange. All data were analysed in aggregate form, and no confidential or personally identifiable information was used. The authors confirm that the research was conducted in accordance with accepted academic and publication ethics standards.

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