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The role of investor recognition mediates the effect of sustainability reporting quality on firm value

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The objective of this research is to examine the impact of sustainability reporting quality on firm value through investor recognition. This quantitative study investigates the relationship between sustainability reporting quality and firm value, focusing on non-financial sector companies listed on the Indonesia Stock Exchange (IDX) between 2017 and 2020. The sample size for this study was 320. The analysis employed a multivariate approach using a structural equation model (SEM) based on Partial Least Squares (PLS). The research findings demonstrate that the quality of sustainability reporting can increase firm value because investors view the quality of reporting as reflecting sustainable practices that have been implemented properly. Furthermore, the study confirms that sustainability reporting quality positively influences investor recognition. This research contributes empirically by highlighting the mediating role of investor recognition in the relationship between sustainability reporting quality and firm value. This study provides evidence that investor recognition of sustainability reporting quality contributes to an enhancement in firm value from an agency theory and signaling theory perspective.

1. Introduction

Firm value has significant implications for the company because it reflects growth, sustainability, competitiveness, and good performance. Maximizing firm value is the most effective corporate goal because it aligns the interests of shareholders with the actions and decisions of management (Jensen, 2002). Firm value reflects factors such as brand reputation, competitive advantage, relationships with customers and suppliers, innovation, management quality, and long-term business sustainability (Purbawangsa et al., 2020). Climate change, human capital issues, and associated risks have prompted a growing number of companies to recognize the significance of environmental, social, and governance (ESG) disclosure practices (Ruan & Liu, 2021). In the last few decades, development trends and social responsibility initiatives have encouraged information disclosure not only in the form of presenting financial information but also in sustainability reporting (Dagilien & Nedzinskien, 2018). Investors have used sustainability reporting as a mechanism to make investment decisions (Jo et al., 2016; Khan et al., 2017). Ammer et al. (2020) found that sustainability reporting is a form of corporate responsibility and transparency that increases stakeholder trust and is important in increasing firm value.

The practice of sustainability reporting in Indonesia has increased in recent years. Nonetheless, the results of the study by Laskar and Gopal Maji (2018) found that the level of sustainability reporting in Indonesia is still lower compared to other Asian countries such as Japan, India, and South Korea. These results are consistent with the findings of Loh et al. (2018), who conducted studies on sustainability reporting in ASEAN countries. The study found that companies registered in Malaysia had the highest sustainability disclosure ratings, whereas companies listed in Indonesia were ranked the lowest. Sustainability reporting cannot guarantee that companies report decent quality (Junior et al., 2014). There are weaknesses in sustainability reporting practices, such as greenwashing or reporting which is just a formality without sufficient substance (Milne & Gray,

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2013). Sustainability reporting that is not of good quality poses a threat to a company's legitimacy (Seele & Gatti, 2017). The lack of attention to SRQ is illustrated by the percentage of sustainability reporting that uses external assurance, which is only 45% globally (Loh et al., 2017). The study conducted by Zahn (2019)) shows that when sustainability reporting becomes an obligation for companies (mandatory), the substance of sustainability reporting will be more influential in increasing firm value. This signifies that companies should place greater emphasis on the quality of sustainability reporting rather than solely focusing on the quantity of information disclosed. Few studies have been conducted on the quality of sustainability reporting, and at present there is a lack of consensus (Jain & Jamali, 2016). Hence, conducting research on sustainability reporting quality is crucial, as it offers valuable insights into the advantages associated with high-quality sustainability reporting.

Certain investors may regard sustainability reporting as an indicator or a signal of managerial competence (Milne & Patten, 2002). The signals given by the company through sustainability reporting provide more comprehensive information, thereby reducing information asymmetry and increasing investor confidence. The increasing popularity of sustainability reporting has attracted investor recognition (Cormier & Magnan, 2007). Increased awareness of sustainability causes investors to prefer companies with better sustainability reporting (Nguyen & Nguyen, 2020). High-quality sustainability reporting increases investor recognition, which may affect firm value. Investors who recognize and appreciate high-quality sustainability reports are more likely to assign a higher valuation to a company, which can manifest in an increase in share price or market value. Investor recognition plays a role as a mediator in the relationship between sustainability reporting quality and firm value.

The objective of this research is to determine whether the quality of sustainability reporting generates positive signals for investors, thereby enabling companies to gain investor recognition. Numerous empirical studies show that higher firm value is associated with higher investor recognition (Bodnaruk & Ostberg, 2009; Foerster & Karolyi, 1999; Lehavy & Sloan, 2008). Empirical studies by Chen et al. (2004), Green and Jame (2013) and Lee et al. (2020) also found that investor recognition has a positive impact on firm value. The research is grounded in agency theory to elucidate the impact of sustainability reporting quality on firm value. It contributes to the existing literature by exploring the relationships between sustainability reporting quality and firm value. Prior studies have highlighted that sustainability reporting quality remains less prioritized among Indonesian listed companies. This study empirically contributes by developing an integrated model that examines the influence of sustainability reporting quality on firm value, with investor recognition serving as a mediator. The study focuses on non-financial sector companies listed on the Indonesian stock exchange between 2017 and 2020. This timeframe is significant as it represents a transitional phase from voluntary to mandatory sustainability reporting. The importance of this study lies in its examination of how sustainability reporting quality influences firm value within this transition period.

2. Literature Review and Hypotheses

There are differences in goals, motivations, and information between the owner (principal) and the manager (agent), which cause a conflict of interest (Jensen & Meckling, 1976). Conflicts of interest between parties involved in principal and agent relationships will cause agency problems (Poletti-Hughes & Briano-Turrent, 2019; Teece, 2019). The actions chosen by the agent may not be in accordance with the principal's interests and may tend to maximize personal interests. This conflict-of-interest results in agency costs (Band, 1992). Barako et al. (2006) reveal that this agency cost comes from the existence of information asymmetry between shareholders and managers. Agency theory explains the reasons for managers' voluntary disclosure of information (Cooke, 1989). Information disclosure serves as a mechanism to mitigate information asymmetry by aligning the interests of shareholders and managers, thereby reducing agency costs (Healy & Palepu, 2001). Agents may voluntarily provide information to reduce bonding costs Barako et al. (2006) and persuade external users that managers perform optimally (Watson et al., 2002).

Signaling theory shows that effective management uses sustainability reporting to signal stakeholders about company commitment and long-term policies for management sustainability (Ching et al., 2017; Connelly et al., 2011). Sustainability reporting can serve as a management strategy to foster effective communication between companies and stakeholders. By establishing a robust relationship, the likelihood of conflicts that could undermine a company's sustainability is reduced, leading to a positive impact on firm value. Zahn (2019) empirical findings show that sustainability reporting has a positive and significant effect on firm value. Li et al. (2016) argued that companies with better sustainability reporting will receive a positive response from investors and have better relationships with stakeholders. Research conducted by Kuzey and Uyar (2017) aimed to identify the factors that influence sustainability reporting practices by registered companies in Turkey. Research conducted by Zahn (2019) focused on the relationship between sustainability reporting and firm value in 436 companies in Singapore. Research conducted by Qureshi et al., (2020) investigated 812 companies from 22 European countries and aimed to investigate the impact of sustainability reporting and gender diversity on the board of directors on firm values. This study shows that sustainability reporting is relevant to value and has a positive relationship with stock prices. The investor recognition hypothesis by Merton (1987) shows that low investor recognition causes poor risk sharing and additional risk so that the company's valuation becomes lower. According to Merton (1987), investor recognition refers to the amount of information investors have about the company. According to Lehavy and Sloan (2008), investor recognition is defined as the number of investors who have knowledge about stock. Investor recognition has the potential to mediate the effect of sustainability reporting quality on firm value. Merton (1987) finds that investors prefer to invest in familiar stocks because they believe they have a better understanding of the investment goal and have more capacity to capture key information and establish a suitable investment plan. High-quality sustainability reporting can be an information signal for investors regarding the company's commitment and performance in terms of sustainability. When companies actively report their sustainability practices with high quality, this indicates that the company has transparency and accountability on social and environmental issues. This will be a signal to investors that the company has good management, has the potential to reduce risk, and focuses on long-term value creation. Investors who recognize this signal will be more inclined to provide a more positive assessment of the firm's value. Based on the explanation above, the concept of this research is as follows:

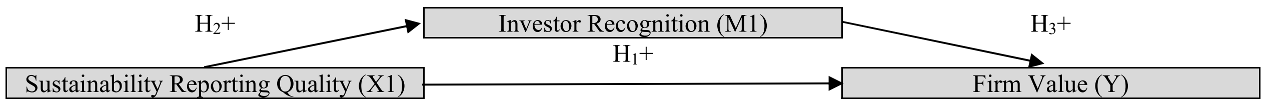

Fig. 1. Research Concept: The Role of Investor Recognition in Mediating the Effect of Sustainability Reporting Quality on Firm Value

2.1 Sustainability Reporting Quality

Sustainability reporting is a public report by the company to provide an overview to internal and external stakeholders about the position and activities of the company on the economic, environmental, and social dimensions (Nobanee & Ellili, 2016). The existence of sustainability reporting is not an assurance that companies will report with decent quality (Junior et al., 2014).A poor quality of Sustainability reporting will threaten the legitimacy of the company (Seele & Gatti, 2017).This is also supported by the findings of (Loh et al., 2017) who found that the better the quality of sustainability reporting, the stronger the relationship with firm value. There is an increased awareness of sustainability, causing investors to prefer companies with better sustainability reporting (Nguyen & Nguyen, 2020). The hypothesis was formed based on studies of agency theory and signaling theory, which can be the basis for explaining the role of sustainability reporting quality in increasing firm value. Companies that disclose social, environmental, and governance activities show that they strive to operate in compliance with applicable values and norms in society. This theoretical study is supported by several previous studies that found a positive relationship between sustainability reporting and firm value (Chauhan & Kumar, 2018; Loh et al., 2017; Yip & Lee, 2018). Based on the theoretical and empirical studies that have been described, the first hypothesis in this study is as follows:

H_1: *Sustainability reporting quality has a positive effect on firm value.*
H_2: *Sustainability reporting quality has a positive effect on investor recognition.*

2.2 Investor Recognition

Investors frequently choose well-known companies to invest in because they believe they have a better understanding of their investment goals, are better able to gather pertinent information, and can develop the most advantageous potential investment strategies (Merton, 1987). Investors with a comprehensive understanding of the company and confidence in its growth prospects are more likely to invest in and purchase shares in the company. Signaling through sustainability reporting is one of the strategies employed to mitigate information asymmetry. Sustainability reporting can enhance investor confidence as information regarding sustainability practices serves as a positive signal. The growing prominence of sustainability reporting has garnered increased investor recognition (Cormier & Magnan, 2007). The increased awareness of sustainability leads investors to prefer companies with higher quality sustainability reporting (Nguyen & Nguyen, 2020). Investor recognition is considered to have an enormous effect on firm value. Investor recognition functions as a signal to the market that a company has high potential or good performance. Investors who recognize the company can convey a signal to other investors that the company is worth considering as a promising investment. This can increase market perceptions of company quality and influence company valuation. The higher the level of investor confidence in a company, the higher its value. Empirical studies have consistently shown that increased investor recognition is correlated with higher firm value (Bodnaruk & Ostberg, 2009; Foerster & Karolyi, 1999). The research results of Green and Jame (2013) and Lee et al. (2020) found that investor recognition has a positive impact on firm value, so the hypothesis can be as follows:

H_3: *Investor recognition has a positive effect on firm value.*
H_4: *Investor recognition mediates the effect of sustainability reporting quality on firm value.*

3. Methodology

3.1. Sample and data collection

This study aims to investigate the impact of sustainability reporting quality on firm value. The research was conducted between 2017 and 2020, specifically focusing on non-financial companies. During this period, non-financial sector companies listed on the IDX (Indonesia Stock Exchange) underwent a transition from voluntary disclosure to mandatory disclosure. During this transition period, there was an increasing trend of non-financial sector companies making sustainability reporting disclosures, as follows:

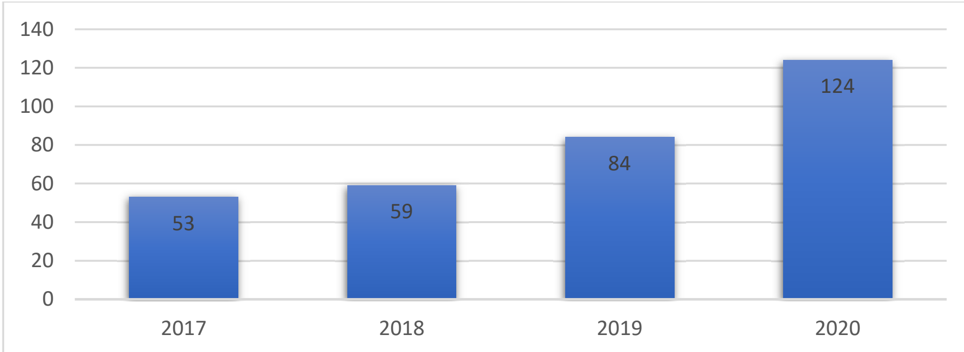

Fig. 2. Number of non-financial sector companies conducting sustainability disclosures

Fig. 2 reveals that every year there is an increase in the number of sustainability disclosures by non-financial sector companies on the IDX. In 2017 53 companies made sustainability disclosures, while in 2018 it increased to 58 companies. In 2019 there was an increase from the previous year to 83 companies and increased again in 2020 to 125 companies. The number of samples that are the object of observation in this study is 320 observations, namely the number of sustainability reports conducted by the company in the form of publication of sustainability reports on the company's official website. The firm value indicator used is Tobin's Q, which is considered the most valid firm value measurement (El Ghoul et al., 2017; Li et al., 2016). This Tobin's Q measurement reveals past values and explains the company's improvement prospects in the future (Li et al., 2020). Tobin's Q is calculated by dividing the market value of a company's assets by the book value of those assets (Garay & González, 2008). Sustainability reporting quality measurement modifies the sustainability reporting quality index from (Al-Shaer & Zaman, 2016) by eliminating the score of 0. For the Investor recognition variable, this study adopts the indicators used by Lee et al. (2020), who use the shareholder-equity ratio of institutional investors and contend that institutional investors have greater access to information than individual investors.

4. Results and Analysis

Table 1 shows that sustainability reporting quality has an average value of 1.2719. Sustainability reporting quality in 2017–2020 is in the range of 1 to 3. Meanwhile, the standard deviation of sustainable reporting in 2017–2020 is 0.66093. This means that the sustainability reporting quality of non-financial companies on the IDX in the 2017–2020 period has a smaller standard deviation than the average, so the data variation is smaller.

Table 1
Descriptive Statistical Analysis

	N	Minimum	Maximum	Means	std. Deviation
IR(M1)	320	1.55	100.00	65.4654	17.73913
IC(Z1)	320	0.01	1540.82	41.8110	111.32767
SD(X1)	320	1.00	3.00	1.2719	.66093
NP(Y)	320	.30	23.30	2.0359	2.79065
Valid N (listwise)	320				

The average value of investor recognition as measured by the shareholder-equity ratio of institutional investors has an average value of 65.4654. The shareholder-equity ratio of institutional investors in 2017–2020 is in the range of 1.55% to 100%. Meanwhile, the standard deviation of the shareholder-equity ratio of institutional investors in 2017–2020 is 17.73913. The average firm value as measured by Tobin's Q has an average value of 2.0359. Tobin's Q in 2017–2020 is in the range of 0.30 to 23.30. Meanwhile, the standard deviation of Tobin's Q in 2017–2020 is 2.79065.

4.1 Measurement models (outer models)

The measurement model in this outer model is related to the level of validity and reliability of each indicator used for each variable in this study, both exogenous and endogenous variables.

Table 2
Combined Loadings and Cross-Loadings

	SRQ(X1)	IR(M1)	NP(Y)	SE	P-value
Sustainability reporting quality	(1,000)	0.000	0.000	0.048	<0.001
Investor_Recognition	0.000	(1,000)	0.000	0.048	<0.001
Tobin's Q	0.000	0.000	(1,000)	0.048	<0.001

Table 2 shows the loading factor values of the sustainability reporting quality variable as measured by the sustainability reporting quality index, yielding a value of 1,000 greater than 0.30 with a p-value <0.001. So that the sustainability reporting quality variable meets the convergent validity criteria. The loading factor value of the investor recognition variable as measured by the shareholder equity ratio of Institutional Investors yields a value of 1,000 greater than 0.30 with a p-value of 0.001. So that the investor recognition variable meets the convergent validity criteria. The loading factor value of the firm value variable as measured by Tobin's Q produces a value of 1,000 greater than 0.30 with a p-value <0.001. So that the firm value variable meets the convergent validity criteria.

Table 3
AVE Root and Correlation Coefficient

	SD(X1)	IR(M1)	NP(Y)
SD(X1)	(1,000)	0.300	0.450
IR(M1)	0.300	(1,000)	0.321
NP(Y)	0.450	0.321	(1,000)

Based on Table 3, the variable of sustainability reporting quality has a root of AVE 1,000 and a correlation with other variables of 0.300, 0.428, and 0.450, so that the SD variable meets discriminant validity. Table 3 shows that the investor recognition (IR) variable has an AVE root of 1,000 and a correlation with other variables of 0.300, 0.224, and 0.321, so that the IR variable meets discriminant validity. Table 3 shows that the variable Firm value (Y) has a root of AVE 1,000 and a correlation with other variables of 0.450, 0.321, and 0.657, so that variable Y fulfils discriminant validity.

4.2 Structural models (inner models)

The proper goodness of fit model using Warp PLS can be seen with the fit and quality indices model. Table 4 shows the general model elements used as indicators of the goodness of fit inner model. If you want to check the fit of the model to the data, several indicators can be used such as APC, ARS, AARS, AVIF, AFVIF, and GoF.

Table 4
Goodness of Fit Inner Model

No	Model Fit and Quality Indices	Fit Criteria	Analysis Results	Information
1	Average Path Coefficient (APC)	$p < 0.05$	0.289, P<0.001	Good
2	Average R-squared (ARS)	$p < 0.05$	0.274, P<0.001	Good
3	Average Adjusted R-squared	$p < 0.05$	0.270, P<0.001	Good
4	Average block VIF (AVIF)	Acceptable if < 5, ideally < 3.30	1,323	ideal
5	Average full collinearity VIF (AFVIF)	Acceptable if < 5, ideally < 3.30	3,376	ideal
6	Tenenhous GoF (GoF)	Small ≥ 0.1; Medium ≥ 0.25; large ≥ 0.36	0.524	ideal

The results of the analysis show that the Average Path Coefficient (APC), or average path coefficient, is 0.289 with a significance level of p-value = 0.001, meaning that the coefficients in each path have a significant influence from exogenous variables on endogenous variables and a moderation model on endogenous variables. The Average R-squared (ARS) value is 0.274 with a p-value of $p < 0.001$, and the Average Adjusted R-squared is 0.270 with a p-value of $p < 0.001$, which also meets the criteria for $p <0.05$. Likewise, the Average block VIF (AVIF) and Average full collinearity VIF (AFVIF) values show an ideal value of <3.30. Based on the GoF indicator, it is known that the GoF value is 0.524 > 0.36, which means that the model fits into the large (strong) group. The next evaluation is by looking at the R-square value. R-square is used to explain the percentage of explained variance, or, in other words, to explain how far the model's ability to explain the variation of the dependent variable goes. The R-square value on M1 is 0.04. This means that the sustainability reporting quality variable explains the investor recognition variable by 4%, while the rest is explained by other factors outside the model. The R-square value on Y is 0.13. This means that sustainability reporting quality and investor recognition can explain the firm value variable by 13%, while the rest is explained by other factors outside the model.

4.3 Structural models

The hypothesis is tested by a t-test. If the test obtained a p-value of 0.05 (α = 5%), then the test is significant. Analysis of direct effects and indirect effects to determine the effects of each construct directly or indirectly. Effect size analysis (f2) to determine the effect caused by not including one of the constructs in the model. Fig. 3 shows the results of the path coefficient with a significance level according to the calculations that have been carried out using the PLS Warp.

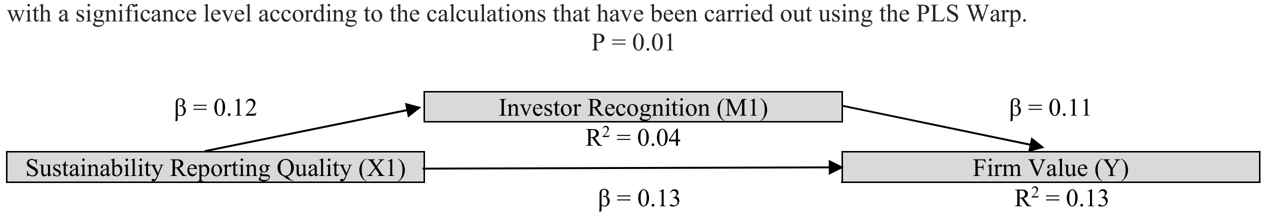

Fig. 3. Research Results Model

In this calculation, the path coefficient value of sustainability reporting quality to firm value is 0.13, which is positive, which means that sustainability reporting quality has a positive effect on firm value. P-values 0.01, which means that the sustainability reporting quality has a positive and significant effect on firm value. So H_1, which states that sustainability reporting quality has a positive effect on firm value, is acceptable. The path coefficient value of sustainability reporting quality on investor recognition is 0.12, which is positive, which means that sustainability reporting quality has a positive effect on investor recognition. P-values = 0.01, which means that the sustainability reporting quality has a positive and significant effect on investor recognition. So that H_2, which states that sustainability reporting quality has a positive effect on investor recognition, can be accepted. Investor recognition path coefficient value on firm value is 0.11, which is positive, which means investor recognition has a positive effect on firm value. The P-value is 0.02, which means that investor recognition has a positive and significant effect on firm value. So H_3, which states that investor recognition has a positive effect on firm value, is acceptable. Based on Figure 2, it is obtained that the P-values of investor recognition in mediating the effect of sustainability reporting quality on firm value are 0.01 <0.05, which means that investor recognition can significantly mediate the effect of sustainability reporting quality on firm value. So H_4, which states that investor recognition mediates the effect of sustainability reporting quality on firm value, is accepted. Investor recognition partially mediates the relationship between sustainability reporting quality and firm value.

5. Discussions

The findings of the data analysis reveal a positive and significant relationship between sustainability reporting quality and firm value. This implies that an increase in sustainability reporting quality corresponds to an increase in firm value, while a decrease in sustainability reporting quality corresponds to a decrease in firm value. These findings substantiate the notion that effective sustainability reporting practices contribute to fostering trust between management and shareholders. Sustainability reporting quality enhances the transparency of information regarding a company's social and environmental performance. This contributes to the reduction of information asymmetry between management (as agents) and shareholders (as principals). Improved transparency enables shareholders to gain better insight into how management handles the company's social and environmental aspects. This increased transparency fosters trust and satisfaction among shareholders, subsequently influencing assessments of firm value. The findings of this study confirm the influence of sustainability reporting quality on firm value, aligning with agency theory. Additionally, this research supports signaling theory, which posits that signaling mitigates information asymmetry between organizations and their stakeholders.

The results of this study support the results of a study by Bachoo et al., (2013) which tested the quality of sustainability reporting on firm value. This research also supports previous research by Kuzey and Uyar (2017) and Loh et al. (2017) who found a positive relationship between sustainability reporting quality and firm value. Loh et al. (2017) studied listed companies in Singapore and found that companies with higher sustainability reporting quality would have a higher market value than companies with lower sustainability reporting quality.

The results of the data analysis reveal a positive and significant impact of sustainability reporting quality on investor recognition. These findings support the signaling theory, which posits that companies can convey positive signals to investors through sustainability reporting. Signaling through sustainability reporting is one of the strategies employed to enhance investor confidence in the company. The results of this study confirm that sustainability reporting quality serves as a positive signal for investors, leading to an increase in investor recognition.

The results of the data analysis indicate a positive and significant relationship between investor recognition and firm value. This implies that an increase in investor recognition corresponds to an increase in the value of the firm. Firm value serves as a crucial indicator for investors as it provides insights into the current value and potential of the company (Lonkani, 2018). Investors and managers who are concerned with the value of the firm must consider investor recognition in addition to the company's financial information. The results of this study also support previous findings from Green & Jame (2013) and Lee et al., (2020) who found that investor recognition has a positive impact on firm value.

The results of this study found that investor recognition was confirmed as a mediating variable on the effect of sustainability reporting quality and firm value. This finding is a novelty in this study considering that empirical studies regarding the role of investor recognition in mediating the effect of the quality of sustainability reports on firm value have not been thoroughly investigated in the Indonesia Stock Exchange. Signaling through sustainability reporting quality is one way to reduce information asymmetry. Sustainability reporting quality increases investor confidence since it delivers a positive signal and increases investor recognition (Cormier & Magnan, 2007). Furthermore, the higher the investor recognition, the firm value will increase (Bodnaruk & Ostberg, 2009; Foerster & Karolyi, 1999; Lehavy & Sloan, 2008).

6. Conclusion and recommendations

Sustainability reporting quality has been found to have a positive and significant influence on firm value. This research aligns with agency theory, as it demonstrates that sustainability reporting quality enhances management transparency and accountability to shareholders, mitigates agency conflicts, and fosters trust, ultimately leading to an increase in firm value. The quality of sustainability reporting among companies listed on the Indonesia Stock Exchange exhibits a positive and significant effect on investor recognition. This implies that investors are more inclined to recognize and appreciate companies that demonstrate robust sustainability reporting practices. The results of this study found that investor recognition has a positive and significant impact on firm value. This suggests that companies with higher levels of investor recognition tend to have higher firm value. This research supports the signaling theory of the relationship between investor recognition and firm value. According to signaling theory, high investor recognition can serve as a positive signal to the market and contribute to increasing firm value. Investor recognition also plays a role in mediating the effect of sustainability reporting quality on firm value. The findings of this study recommend a strategy for companies to increase firm value by increasing the quality of sustainability reporting. One approach to enhancing quality involves obtaining external assurance on sustainability reporting. External assurance on sustainability reporting is a viable approach to enhancing its quality. By engaging external assurance providers, companies can undergo independent verification and validation of their sustainability reporting processes and disclosures. This provides stakeholders with increased confidence in the accuracy and reliability of the reported information.

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