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The influence disclosure enterprise risk management and intellectual capital to firm value through disclosure of sustainability report as variables intervening

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ABSTRACT

The purpose of this study is to examine the effect of enterprise risk management disclosure and intellectual capital on firm value through sustainability report disclosure as an intervening variable. This research method is quantitative, with a sample size 16 companies listed on the Indonesia Stock Exchange in the LQ 45 index during the period 2019-2023. The data processing used in this study involves Smart PLS data analysis software. The results of direct tests show that enterprise risk management disclosure affect firm value, intellectual capital has no effect on firm value, and sustainability report disclosure affect firm value. Additionally, enterprise risk management disclosure affect sustainability report disclosure, while intellectual capital has no effect on sustainability report disclosure. The results of indirect tests indicate that enterprise risk management and intellectual capital disclosure affect sustainability report disclosure, but they do not affect firm value through sustainability report disclosure, meaning that the company's sustainability report disclosure is not an intervening variable for companies listed on the Indonesia Stock Exchange in the LQ45 index.

Introduction

The value of a company becomes a very important factor for the existence of the company, which is not free from several problems, such as what happened to Garuda Airlines, which experienced a 7.58% decline in stock price on June 28, 2019, resulting in Garuda Airlines receiving sanctions from the OJK and the Indonesia Stock Exchange related to the presentation of Garuda Airlines' financial statements. The shares of this state-owned airline corrected by 7.58% or 30 points to a position of Rp 366 per share (Hadiyati, 2017).

Pranata et al. (2022) in their report found that year to date, the IHSG experienced a quite difficult journey, touching -5.09% compared to the end of last year, 2019. Significantly, this decline was contributed by the LQ 45 index, which experienced a decrease of 7.85%, largely due to the Covid-19 pandemic. Domestic and global macroeconomic data have not yet provided a clearly positive high market impact, so it can be concluded that these conditions reflect an unstable market environment, which is capable of causing investor concerns. This was also conveyed by Solihin et al. (2023), who stated that intellectual capital affects company performance.

Risk management has become a sacred task that companies need to undertake to prevent fraud, which could cause certain parties to feel aggrieved, and as an effort to protect the resources within the company (Budiarto & Putuyana, 2018). Investors are hesitant to make investment decisions in troubled companies if the company's risk is relatively high due to ineffective risk management, leading to a decrease in demand for bank shares (Chairani & Siregar, 2021).

Some contradictory studies include the research by Budiarto and Putuyana (2018), which found a negative influence between Enterprise Risk Management and Intellectual Capital on firm value, but the profitability and leverage generated by real estate companies showed a positive influence on firm value. Yun (2023) found a significant negative impact of the application of Intellectual Capital on firm value. Meanwhile, Intellectual Capital has been proven to have a significantly positive effect on firm value (Andreu et al., 2025).

Companies included in the LQ45 index are among the industrial sector companies that have the highest risk compared to other sectors because being included in the LQ45 index requires relatively large capital and a long time for a relatively long return period. Therefore, it is necessary to disclose risks related to the development of sustainable companies through identification, measurement, and risk management. This can ensure the

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sustainability of the company, improve efficiency and economic growth, as well as increase investor confidence in the company.

However, unfortunately, not many companies pay attention to reporting non-financial risks to external parties, as it is believed that external parties do not need this information and it is seen as potentially harmful to the company itself. Based on this, this research aims to analyze and find empirical evidence regarding the influence of operational risk, strategic risk, empowerment risk, integrity risk, information and technology processing risk, and intellectual capital on firm value.

This is based on previous research by Gunawan and Nakajima (2025), which states that there is an influence of operational risk, strategic risk, empowerment risk, and information technology risk on firm value. However, research by Aritonang et al. (2025) states that there is no influence of operational risk and empowerment risk on firm value. According to Nguembi et al. (2023), integrity risk has an impact on firm value, which contradicts the research by Alhomaidi et al. (2019) that states integrity risk affects firm value. Additionally, according to Hatab et al. (2023), intellectual capital has an impact on firm value, whereas the research by Pedro et al. (2025) states that intellectual capital does not affect firm value.

The results of the above studies are inconsistent; thus, further investigation is needed. This study refers to the research conducted by Sucena et al. (2025), with the variables of intellectual capital and sustainability reporting disclosure as key differences from previous research. Furthermore, this study focuses on the influence of risk management disclosure and intellectual capital, with the intervening effect of sustainability reporting disclosure on firm value, which is centered on the annual reports of companies listed in the LQ45 index on the Indonesia Stock Exchange during the period 2019-2023 as the research subjects.

Literature Review

Theory of Stakeholders and Signaling Theory. The Theory of Stakeholders is a management or administration theory that supports attitudes, structures, and practices that are simultaneously designed to form stakeholders management philosophy (Donaldson & Preston, 1995). The Theory of Stakeholders aims to assist management in increasing the added value from activities while minimizing the impact of losses that may affect stakeholders. Accountability in organizations is prioritized in stakeholder theory compared to financial performance. Furthermore, Signaling Theory posits that signals convey information that describes the condition of a company; this information will serve as the basis for investment decision-making (Manes-Rossi et al., 2020).

The information released by the company serves as a signal for investors to decide whether to engage in investment activities. The information released must be complete, accurate, relevant, and timely, as it will later be used by investors as a basis for analyzing investment decision (Bamel et al., 2022).

Variable Study

Disclosure Enterprise Risk Management (ERM) is a framework that is the most comprehensive and integrated for managing risks such as credit risk, market risk, economic capital, and transfer risk. This is done in an effort to maximize the company's market value. Disclosure (disclosure) means not covering up or hiding information. When linked to data, disclosure means providing useful data to those who need it. Therefore, the data must be genuinely useful; if it is not, the purpose of the data will be lost. The disclosure will not be achieved (Darškuvienė et al., 2021). Based on this, the calculation to find the index number is determined by the following formulation:

$$\text{Enterprise Risk Management Disclosure} = \frac{\text{total score of the items expressed}}{\text{total items that need to be revealed}}$$

Intellectual Capital is the total value of a company that reflects the intangible assets owned by the company and is derived from three pillars: human capital, structural capital, and customer capital. The three main components of Intellectual Capital identified from the development results by Leng et al. (2025) are human capital, structural capital, and relational capital (Yen & Pisa, 2025). Company resources such as human capital, structural capital, and relational capital, if managed well, will create added value and increase the company's overall worth. The measurement used in intellectual capital or intellectual assets, based on previous research, employs Value Added. VASC will measure how much structural capital is needed by the company to generate each one rupiah of value added, thus producing an understanding of the ability of structural capital to create value.

So that For can measure intellectual capital, a company will use the formula:

Intellectual Capital = VAIC = VACE + VAHC + VASC

VA = Value Added

CE = Capital Employed

HC = Human Capital

SC = Structural Capital.

The disclosure of sustainability reports or sustainability reporting is a general term first popularized by Elkington & Rowlands (1999), who explained that companies aiming for sustainability must pay attention to the concept of the triple bottom line or 3Ps. The view is that companies aiming for sustainability must consider profit to increase the company's revenue; people to provide welfare to employees and the community; and the planet to maintain and improve the quality of nature and the environment in which the company operates.

$$\text{Disclosure Sustainability Report} = \frac{\text{total items score of the items expressed}}{\text{total items that need to be revealed}}$$

Based on the stated description and literature review, the variables related to firm value used in this research are presented in Figure 1.

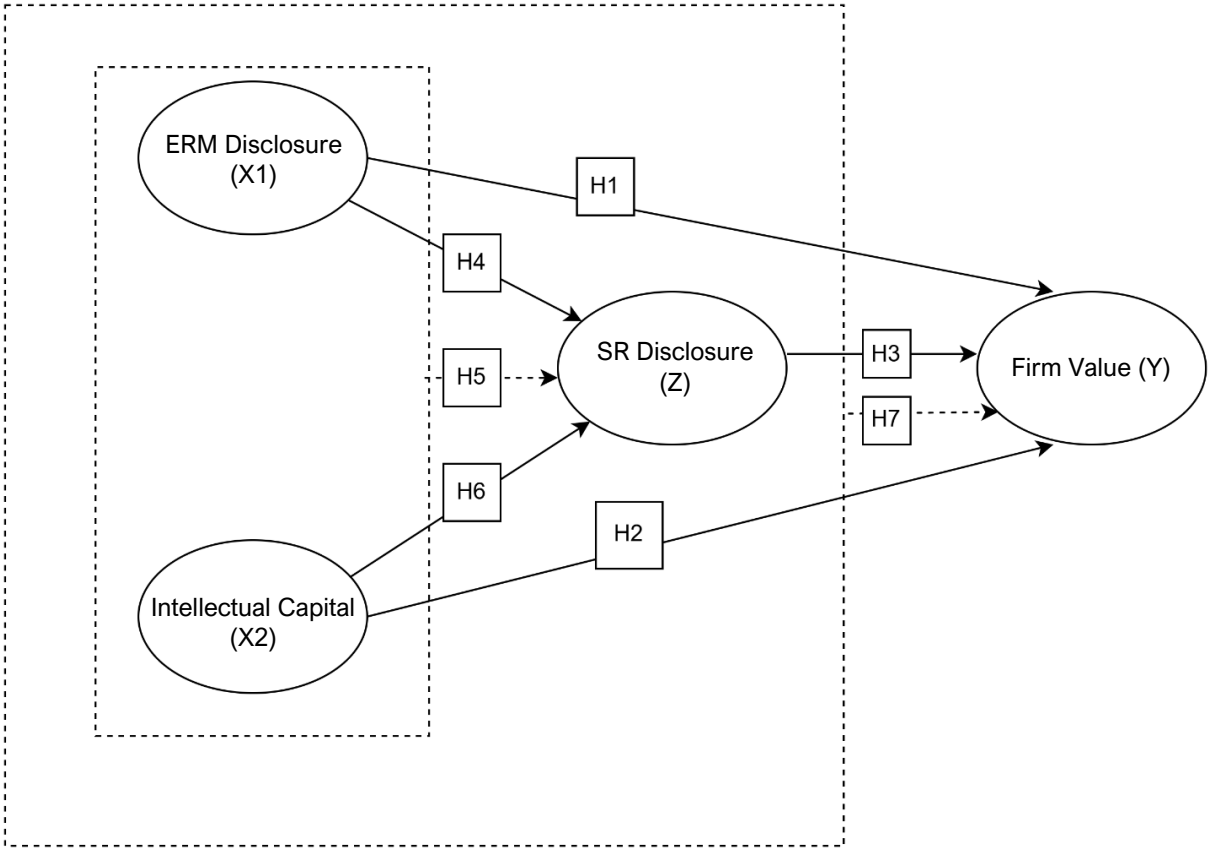

Figure 1. Research Framework

The influence of enterprise risk management (ERM) disclosure on firm value

Wibisono and Prabowo (2024) state that the disclosure of Enterprise Risk Management (ERM) has a significantly positive impact on the value of the company. These findings indicate that the better the ERM disclosure, the higher the value of the company created. The results of this study are in line with the findings of Surenjani et al. (2023), which state that the extent of risk management in a company directly affects its value.

Effective risk management reflects the company's ability to identify, measure, and manage risks strategically. Transparent ERM disclosure sends a positive signal to stakeholders, especially investors, regarding the company's stability and ability to face business challenges. In addition, good risk management also contributes to the increase in market confidence and the company's reputation. Thus, Wibisono and Prabowo (2024) emphasize the importance of implementing ERM as part of the management strategy to create long-term value for the company.

Information on the implementation and disclosure of ERM conducted by the company can also increase the company's value, resulting in a significant positive correlation between the company's ERM disclosure and the company's value itself. Similar research results were obtained by Guo et al. (2024). Several studies that contradict Guo et al. (2024), including Yang and Chai (2025), and Hanapi et al. (2025), show that Gian et al. (2025) found that ERM disclosure, intellectual capital disclosure, and CSR disclosure do not significantly affect the company's value.

H_1: The disclosure of enterprise risk management (ERM) has a positive effect on firm value.

The influence of intellectual capital on firm value

Intellectual capital becomes an aspect that needs to be considered by the company because, although it is an intangible asset, it is very vital for the company as it can enhance and create the company's value. Fung et al. (2025) state that the knowledge, ideas, skills, and business training possessed by the company's employees are identified as intellectual capital that is not recorded in the official financial statements. Intellectual capital has a significant impact on the value of the company, as found in the research by Juwita and Angela et al. (2025). Similar results were obtained in the research of Barbosa et al. (2022), who found the significance of intellectual capital on firm value.
H_2: Intellectual capital has a positive effect on firm value.

The influence of sustainability reporting disclosure on firm value

The disclosure of the Sustainability Report becomes the company's responsibility to the shareholders because investors demand the company fulfill the sustainability report. The disclosure of sustainability reports in this case is believed to add value to the company. The company is deemed responsible for the social and environmental aspects in its efforts to report sustainability. The company's reputation will have added value in the disclosure efforts made in the sustainability report, so when the company's image improves, it can increase the company's value. Research conducted by Swarnapali and Le (2018) and Yang and Chai (2025) found a positive relationship between Sustainability Reporting and firm value. Nguyen (2020) found that there is no influence of sustainability reporting on firm value. Based on previous research, the hypothesis used is:
H_3: The disclosure of sustainability reporting has a positive effect on firm value

The influence of ERM disclosure on sustainability report disclosure

The disclosure of the sustainability report is one form of the implementation of good corporate governance. Without proper alignment of the corporate governance framework with corporate social responsibility (CSR) activities, CSR cannot provide a competitive advantage. Therefore, companies with a high level of corporate governance are positively associated with the disclosure of sustainability reports (Dilling, 2010). The existence of a sustainability report disclosed by the company can increase the company's value. The results of the research conducted by Widjanarko and Oktorina (2024) show that the disclosure of sustainability reports can mediate the relationship between good corporate governance and firm value. Companies with better risk management will be more recognized by the public, so the company must be able to explain how it generates profits. Companies with high profit levels will encourage managers to disclose more information.
H_4: ERM disclosure has a positive effect on sustainability report disclosure

The influence of intellectual capital on sustainability report disclosure

Intellectual capital, such as employee expertise and product knowledge, can influence sustainability report disclosures by enhancing the company's understanding of its impact on various aspects of sustainability. Companies are more likely to disclose information about sustainable practices if they have strong intellectual capital in that area. Research conducted by Leng et al. (2025) and Khoshnaw and Karadaş (2024) found that intellectual capital has a significant positive influence on the disclosure of sustainability reporting. Based on the aforementioned explanation, the author can formulate the following hypothesis:
H_5: Intellectual capital has a positive effect on sustainability report disclosure.

The influence of ERM disclosure through the sustainability report on firm value

The disclosure of Enterprise Risk Management (ERM) and Intellectual Capital plays a crucial role in enhancing the quality of the company's Sustainability Report. By implementing ERM, companies can demonstrate how they manage risks, enriching their sustainability reports. Additionally, good management of intellectual capital can add information to the reports by showing the contribution of intangible assets such as knowledge and innovation to the company's sustainability. This improves the depth and accuracy of the information presented, providing a more complete picture of the company's practices and achievements. As a result, the disclosure of ERM and Intellectual Capital can enhance the credibility and value of the Sustainability Report. Yang et al. (2022) research found positive results consistent with this study, based on this, the hypothesis used is:
H_6: The disclosure of ERM through sustainability report disclosure has a positive effect on firm value.

The influence of ERM and intellectual capital disclosure through the sustainability report on firm value

The disclosure of Enterprise Risk Management (ERM) and Intellectual Capital through the Sustainability Report can increase the company's value by enhancing transparency and investor trust. Better risk management and effective intellectual capital management help reduce uncertainty and enhance the company's competitive advantage. By

adhering to applicable standards and regulations, companies can reduce legal risks and enhance stakeholder trust. In addition, a positive image and reputation through sustainable business practices attract more customers and business partners. All of this contributes to better long-term financial performance and a higher perception of the company's value in the eyes of investors.

H_7: The Disclosure of ERM and Intellectual Capital through Sustainability Report Disclosure has a positive effect on Firm value.

Research Method

This research observes companies listed on the Indonesia Stock Exchange (IDX) and included in the top 20 of the LQ45 index. The selection of this population is based on the characteristics of companies in the LQ45 index, which have high liquidity, good financial performance, and an excellent reputation in the Indonesian capital market. This research focuses on how the disclosure of risk management and intellectual capital contributes to the value of the company.

Risk management reflects the company's ability to identify, manage, and mitigate risks that can affect operations and finances. Meanwhile, intellectual capital includes intangible assets such as human capital, structural capital, and relational capital, which provide strategic added value. The researchers aim to identify the relationship and influence between risk management practices, intellectual capital management, and the enhancement of firm value, with this population providing important insights into understanding the performance of large-capitalized companies in Indonesia. The operational definitions can be seen in Table 1.

Table 1. Operational Definition of Variables

Variabel	Dimension	Indicator
Enterprise Risk Management Yang et al. (2022) Chairani and Siregar (2021)	Enterprise Risk Management Disclosure Index (ERMDI)	total score of the item expressed / total items that need to be revealed
Intellectual Capital Bamel et al. (2022)	Value Added Intellectual Capital (VAIC)	VAIC = VACE + VAHC + VASC
Sustainability Report Kordi et al. (2023)	Sustainability Report Disclosure Index (SRDI)	total score of the item expressed / total items that need to be revealed
Firm value Tobin's Q Brigham and Houston (2003)	Market Value Tobin's Q	market equity value + oa han / total assets

The technical data analysis in this study uses Partial Least Square (PLS). According to Wold (1985) and Sarstedt et al. (2021) define Partial Least Square as a powerful analytical method because it is not based on many assumptions. According to Sarstedt et al. (2021), PLS-SEM analysis usually consists of two sub-models, namely the measurement model (often referred to as the outer model) and the structural model (often referred to as the inner model). The measurement model shows the strength of the estimation between latent variables or constructs.

Result and Discussion

Descriptive Statistics Test

Table 2. Descriptive Statistical

Variable	Mean	Median	Min	Max	Standard Deviation
Enterprise Risk Management	0.428	0.390	0.120	0.940	0.217
Intellectual Capital	0.394	0.330	0.100	0.940	0.222
Sustainability Reporting	0.383	0.300	0.110	0.940	0.221
Firm Value	0.434	0.390	0.110	0.940	0.229

This research involves 20 subjects measured based on several key variables, including the disclosure of Enterprise Risk Management (ERM), Firm value, Intellectual Capital (IC), and the disclosure of Sustainability Reporting (SR). Descriptive statistics, as shown in Table 2, indicate that the mean value for the ERM disclosure variable is 0.428 with a standard deviation of 0.217, indicating relatively low variation in risk management implementation among the analyzed companies. Intellectual capital with a mean of 0.394 and a standard deviation of 0.222, indicates a fairly significant variation in the management of intellectual assets among the companies. The Sustainability Reporting disclosure variable records a mean of 0.383 with a standard deviation of 0.221, showing that most companies tend to be consistent in their sustainability reporting. Overall, these values provide an initial overview

of the characteristics of the research subjects, while the firm value has a mean of 0.434 and a standard deviation of 0.229, indicating a greater disparity among the research subjects related to financial performance. The largest variations are seen in intellectual capital management and firm value, while risk management and sustainability reporting show higher consistency.

Enterprise Risk Management

Enterprise Risk Management (ERM) is a process used by organizations to identify, assess, manage, and monitor risks that may affect the achievement of their objectives. ERM is a holistic approach that encompasses all types of risks, including strategic, operational, financial, and compliance risk.

Table 3. Tabulation Data Enterprise Risk Management 2016 - 2023

No	CODE	2016	2017	2018	2019	2020	2021	2022	2023	Average	Mean	STDEV	Average STDEV
1	ACES	0.55	0.28	0.19	0.29	0.15	0.34	0.33	0.45	0.323		0.130	
2	ADRO	0.6	0.46	0.81	0.27	0.65	0.69	0.66	0.41	0.569		0.175	
3	AKRA	0.51	0.82	0.28	0.24	0.51	0.63	0.42	0.43	0.480		0.187	
4	ANTM	0.51	0.59	0.17	0.84	0.55	0.73	0.17	0.14	0.463		0.271	
5	ASII	0.41	0.81	0.72	0.91	0.45	0.81	0.74	0.34	0.649		0.216	
6	BBCA	0.92	0.24	0.29	0.43	0.65	0.23	0.73	0.33	0.478		0.258	
7	BBNI	0.8	0.33	0.16	0.25	0.54	0.34	0.72	0.25	0.424		0.236	
8	BBRI	0.3	0.31	0.23	0.58	0.94	0.31	0.39	0.61	0.459		0.238	
9	BBTN	0.65	0.39	0.24	0.33	0.26	0.24	0.33	0.35	0.349		0.133	
10	BMRI	0.51	0.25	0.31	0.92	0.39	0.55	0.42	0.64	0.499	0.432	0.212	0.204
11	BRPT	0.4	0.83	0.22	0.18	0.33	0.29	0.22	0.61	0.385		0.226	
12	BSDE	0.3	0.38	0.23	0.23	0.39	0.38	0.23	0.23	0.296		0.076	
13	BTPS	0.4	0.29	0.17	0.26	0.83	0.29	0.74	0.24	0.403		0.246	
14	CPIN	0.32	0.68	0.19	0.83	0.62	0.64	0.72	0.33	0.541		0.229	
15	CTRA	0.36	0.23	0.21	0.46	0.54	0.53	0.21	0.45	0.374		0.141	
16	ERAA	0.32	0.15	0.14	0.42	0.92	0.86	0.14	0.4	0.419		0.313	
17	EXCL	0.65	0.44	0.33	0.71	0.67	0.3	0.13	0.23	0.433		0.221	
18	GGRM	0.51	0.13	0.59	0.74	0.31	0.53	0.31	0.52	0.455		0.193	
19	HMSP	0.41	0.14	0.12	0.23	0.34	0.81	0.19	0.36	0.325		0.223	
20	ICBP	0.33	0.12	0.22	0.24	0.47	0.4	0.18	0.55	0.314		0.150	

As shown in Table 3, the Enterprise Risk Management (ERM) variable has a standard deviation of 0.204, which is smaller than the mean value of 0.432. This indicates that the level of variation or deviation in ERM data among manufacturing companies listed on the LQ45 IDX is relatively low. In other words, the implementation of ERM by these companies is homogeneous or tends to be uniform. The homogeneity of this ERM data may indicate similar risk management patterns among manufacturing companies in the index. Factors such as regulations, industry standards, or pressure from investors may drive this uniformity. However, it is important to evaluate whether the level of ERM implementation achieved is sufficiently optimal in facing existing risks, considering that a low standard deviation does not always indicate the effectiveness of implementation but rather just uniformity among companies. Thus, further analysis is needed to understand the relationship between the implementation of ERM and the overall performance of the company.

Intelectual Capital

Intellectual Capital (IC) plays a crucial role in enhancing organizational performance and creating sustainable competitive advantages. Effective management of IC enables companies to leverage their intellectual assets to support innovation, productivity, and long-term growth.

Intellectual Capital (IC) is an intangible asset that encompasses the knowledge, skills, and relationships possessed by an organization. Effective management of IC allows organizations to utilize their intellectual assets to achieve strategic goals and enhance competitiveness in the global market. As shown in Table 4, in the Intellectual Capital (IC) variable, the standard deviation value is 0.189, which is smaller than the mean value of 0.209. This indicates that IC is homogeneous. The mean value of 0.209 suggests that the majority of manufacturing companies in the BEI LQ45 engaged in IC activities amounting to 0.209 during the period from 2016 to 2023.

Table 4. Tabulation Data Intellectual Capital 2016 - 2023

No	CODE	2016	2017	2018	2019	2020	2021	2022	2023	Average	Mean	STDEV	Average STDEV
1	ACES	0.15	0.18	0.8	0.29	0.15	0.34	0.83	0.45	0.399		0.258	
2	ADRO	0.66	0.22	0.11	0.27	0.6	0.69	0.11	0.41	0.384		0.214	
3	AKRA	0.83	0.18	0.14	0.24	0.51	0.63	0.42	0.43	0.423		0.170	
4	ANTM	0.53	0.23	0.17	0.15	0.55	0.13	0.17	0.14	0.259		0.139	
5	ASII	0.47	0.19	0.72	0.19	0.45	0.82	0.74	0.34	0.490		0.247	
6	BBCA	0.92	0.81	0.22	0.43	0.65	0.22	0.73	0.33	0.539		0.228	
7	BBNI	0.21	0.35	0.16	0.25	0.54	0.34	0.72	0.25	0.353		0.180	
8	BBRI	0.37	0.31	0.23	0.58	0.94	0.32	0.39	0.62	0.470		0.229	
9	BBTN	0.65	0.39	0.24	0.33	0.26	0.24	0.33	0.35	0.349		0.057	
10	BMRI	0.51	0.25	0.31	0.92	0.39	0.55	0.42	0.61	0.495	0.209	0.210	0.189
11	BRPT	0.42	0.8	0.22	0.18	0.33	0.29	0.22	0.16	0.328		0.206	
12	BSDE	0.31	0.38	0.23	0.23	0.39	0.38	0.23	0.24	0.299		0.075	
13	BTPS	0.85	0.29	0.17	0.26	0.83	0.29	0.74	0.33	0.470		0.240	
14	CPIN	0.61	0.18	0.19	0.83	0.62	0.64	0.71	0.45	0.529		0.235	
15	CTRA	0.54	0.53	0.21	0.46	0.54	0.53	0.21	0.45	0.434		0.136	
16	ERAA	0.91	0.17	0.14	0.42	0.92	0.86	0.14	0.24	0.475		0.316	
17	EXCL	0.28	0.28	0.13	0.71	0.67	0.32	0.13	0.33	0.356		0.218	
18	GGRM	0.23	0.68	0.19	0.74	0.31	0.15	0.31	0.45	0.383		0.214	
19	HMSP	0.24	0.23	0.12	0.23	0.34	0.23	0.19	0.36	0.243		0.077	
20	ICBP	0.19	0.24	0.22	0.24	0.47	0.24	0.22	0.55	0.296		0.128	

Sustainability Report

Sustainability reports have become an important tool for companies to demonstrate their commitment to responsible and sustainable business practices, as well as to meet the expectations of stakeholders and increasingly stringent regulations. According to Solihin et al. (2018), the disclosure of sustainability reports can influence a company's stock prices. Companies that actively disclose sustainability information tend to receive positive responses from the market, which is reflected in the increase in stock prices.

Table 5. Tabulation Data Sustainability Reporting 2016 - 2023

No	CODE	2016	2017	2018	2019	2020	2021	2022	2023	Average	Mean	STDEV	Average STDEV
1	ACES	0.15	0.13	0.18	0.29	0.15	0.34	0.83	0.45	0.315		0.227	
2	ADRO	0.62	0.14	0.18	0.27	0.62	0.69	0.11	0.41	0.380		0.217	
3	AKRA	0.51	0.12	0.22	0.24	0.51	0.63	0.42	0.43	0.385		0.167	
4	ANTM	0.55	0.19	0.23	0.15	0.55	0.73	0.17	0.14	0.339		0.217	
5	ASII	0.42	0.8	0.17	0.19	0.45	0.82	0.74	0.34	0.491		0.263	
6	BBCA	0.92	0.2	0.19	0.43	0.65	0.2	0.73	0.33	0.456		0.209	
7	BBNI	0.22	0.32	0.16	0.25	0.54	0.31	0.72	0.25	0.346		0.181	
8	BBRI	0.35	0.31	0.23	0.58	0.94	0.35	0.39	0.61	0.470		0.225	
9	BBTN	0.65	0.39	0.24	0.33	0.26	0.24	0.33	0.35	0.349		0.057	
10	BMRI	0.51	0.25	0.31	0.92	0.39	0.55	0.42	0.61	0.495		0.210	0.195
11	BRPT	0.43	0.81	0.22	0.83	0.33	0.29	0.22	0.16	0.411	0.211	0.265	
12	BSDE	0.35	0.38	0.23	0.23	0.39	0.38	0.23	0.23	0.303		0.076	
13	BTPS	0.8	0.29	0.17	0.26	0.83	0.29	0.74	0.24	0.453		0.246	
14	CPIN	0.61	0.18	0.19	0.83	0.62	0.64	0.76	0.33	0.520		0.250	
15	CTRA	0.54	0.18	0.21	0.46	0.54	0.53	0.21	0.45	0.390		0.150	
16	ERAA	0.91	0.29	0.14	0.42	0.94	0.86	0.14	0.14	0.480		0.321	
17	EXCL	0.26	0.24	0.22	0.71	0.67	0.38	0.13	0.17	0.348		0.221	
18	GGRM	0.23	0.18	0.19	0.74	0.31	0.15	0.31	0.18	0.286		0.192	
19	HMSP	0.15	0.24	0.12	0.23	0.34	0.23	0.19	0.36	0.233		0.077	
20	ICBP	0.44	0.23	0.22	0.24	0.47	0.24	0.22	0.55	0.326		0.129	

As shown in Table 5, in the Sustainability Report (SR) variable, the standard deviation value is 0.195, which is smaller than the mean value of 0.211. This indicates that SR is homogeneous. The mean value of 0.211 means

that the majority of manufacturing companies in the BEI LQ45 conducted IC activities amounting to 0.211 during the period from 2016 to 2023.

Firm Value

The value of a company reflects investors' perceptions of its performance, stability, and future prospects. This illustrates the extent of investors' confidence in the company's ability to generate profits in the future.

Table 6. Tabulation data of firm value 2016 - 2023

No	CODE	2016	2017	2018	2019	2020	2021	2022	2023	Average	Mean	STDEV	Average STDEV
1	ACES	0.9	0.88	0.81	0.29	0.15	0.34	0.83	0.45	0.581		0.277	
2	ADRO	0.68	0.14	0.11	0.27	0.62	0.69	0.55	0.41	0.434		0.215	
3	AKRA	0.55	0.65	0.14	0.24	0.51	0.63	0.42	0.43	0.446		0.175	
4	ANTM	0.53	0.19	0.17	0.52	0.55	0.5	0.17	0.4	0.379		0.162	
5	ASII	0.4	0.81	0.71	0.61	0.45	0.82	0.74	0.34	0.610		0.171	
6	BBCA	0.9	0.21	0.21	0.43	0.65	0.27	0.73	0.33	0.466		0.196	
7	BBNI	0.26	0.39	0.16	0.25	0.54	0.85	0.72	0.25	0.428		0.242	
8	BBRI	0.31	0.31	0.23	0.58	0.94	0.34	0.39	0.6	0.463		0.225	
9	BBTN	0.65	0.39	0.24	0.33	0.26	0.24	0.33	0.35	0.349		0.057	
10	BMRI	0.51	0.25	0.31	0.92	0.39	0.55	0.42	0.61	0.495	0.230	0.210	0.212
11	BRPT	0.4	0.8	0.22	0.82	0.33	0.29	0.22	0.25	0.416		0.250	
12	BSDE	0.3	0.38	0.23	0.23	0.39	0.38	0.23	0.68	0.353		0.149	
13	BTPS	0.85	0.29	0.17	0.26	0.83	0.29	0.74	0.35	0.473		0.239	
14	CPIN	0.61	0.18	0.19	0.83	0.62	0.64	0.79	0.61	0.559		0.245	
15	CTRA	0.54	0.53	0.21	0.46	0.54	0.53	0.21	0.16	0.398		0.162	
16	ERAA	0.91	0.17	0.14	0.42	0.92	0.86	0.41	0.23	0.508		0.297	
17	EXCL	0.26	0.21	0.63	0.71	0.67	0.31	0.13	0.17	0.386		0.237	
18	GGRM	0.23	0.68	0.19	0.74	0.31	0.52	0.31	0.18	0.395		0.212	
19	HMSP	0.15	0.23	0.12	0.23	0.34	0.23	0.19	0.91	0.300		0.248	
20	ICBP	0.44	0.24	0.22	0.24	0.47	0.24	0.22	0.98	0.381		0.261	

As shown in Table 6, the variable Firm value, the standard deviation is 0.212, which is smaller than the mean value of 0.230. This indicates that the Firm value is homogeneous. The mean value of 0.230 means that the majority of manufacturing companies in the IDX LQ45 have a Firm value of 0.230 during the period from 2016 to 2023.

Discriminant Validity Test

Discriminant validity is defined as the relationship between the scores of reflective indicators and their latent variable. The purpose of discriminant validity is to ensure that the relationship between the indicators and the construct or its latent variable is valid. The loading factor for each construct indicator can be used to assess the discriminant validity test. A loading factor value greater than 0.7 is the ideal value, indicating that the indicator can measure the constructed structure. A loading factor value greater than 0.5 is still acceptable in empirical research. According to Sarstedt et al. (2021), the discrimination value can be found in the Table 7.

Table 7. Discriminant Validity

Fornell-Larcker Criterion

Description	ERM (X1)	IC (X2)	Intervening SR*ERM	Intervening SR*IC	SR (intervening)	Firm Value (Y)
ERM (X1)	1.000					
IC (X2)	0.525	1.000				
Intervening SR*ERM	0.533	0.260	1.000			
Intervening SR*IC	0.464	0.653	0.690	1.000		
SR (intervening)	0.601	0.821	0.301	0.585	1.000	
Firm Value (Y)	0.578	0.735	0.328	0.591	0.760	1.000

In this test, it was observed that the square root of the AVE value was greater than the construct value in every correlation between variables. Preliminary research to develop a measurement scale with a containment value of 0.5–0.6 is considered sufficient to demonstrate the discriminant validity of the measurement model with reflective indicators.

Based on the path coefficients outer model diagram (see appendix 1), it can be concluded that each variable has a significant contribution to the company's value. The Enterprise Risk Management (ERM) variable shows a contribution of 0.174, indicating that the implementation of risk management in the company has a positive impact, albeit not very significant, on the increase in firm value. Next, the Intellectual Capital (IC) variable contributes a value of 0.324. This indicates that intellectual assets, such as knowledge, innovation, and employee competence, play an important role in creating competitive advantages that can significantly increase the company's value.

Meanwhile, the Sustainability Reporting (SR) variable provides the highest contribution, which is 0.389. This emphasizes that the disclosure of sustainability reports, which encompass economic, environmental, and social aspects, is a key factor in building investor trust and the company's reputation in the eyes of stakeholders, thereby significantly contributing to the increase in the company's value. Each variable complements the others and demonstrates that good risk management, the utilization of intellectual capital, and commitment to sustainability are important elements for enhancing the competitiveness and value of the company in the long term.

Prediction Relevance (Q-Square)

The Q-Square test is conducted to determine the prediction capability through the blindfolding test, which is also available in Smart PLS. The results of the Q-Square test can be seen in the Table 8.

Table 8. Prediction Relevance

Construct Crossvalidated Redundancy

	SSO	SSE	Q^2 (=1-SSE/SSO)
ERM (X1)	160.000	160.000	
IC (X2)	160.000	160.000	
Intervening SR*ERM	160.000	160.000	
Intervening SR*IC	160.000	160.000	
SR (intervening)	160.000	58.586	0.634
Firm Value (Y)	160.000	65.401	0.591

Based on the Table 8, the Q-Square value of 0.591 is above 0.000. This indicates that each manifest variable in this study has a good predictive power because it has met the threshold requirements in the testing.

Multicollinearity Test (VIF)

The multicollinearity test is intended to prove the existence of relationships between latent variables and to detect whether there are problems within the relationships of latent variables. The results of the collinearity test can be seen in the Table 9 and Table 10.

Table 9. Outer VIF Values

	VIF
ERM	1.000
ERM (X1) * ERM (X1)	1.000
IC	1.000
IC (X2) * IC (X2)	1.000
Firm Value	1.000
SR	1.000

Table 10. Inner VIF Values

	SR (intervening)	Firm Value (Y)
ERM (X1)	1.922	1.573
IC (X2)	2.662	3.077
Intervening SR*ERM	2.914	
Intervening SR*IC	3.768	
SR (intervening)		3.490
Firm Value (Y)		

Based on the analysis results of collinearity statistics (VIF), it was found that the VIF values of all indicator items on the overall business sustainability factor variable are below 5.000 and greater than 1.000 (Sarstedt et al., 2021), indicating that all indicator items on that variable are free from multicollinearity.

Heteroskedasticity Test

The heteroskedasticity test aims to ensure that the residual variance is constant across the range of values of the independent variables. The significance value for each variable is greater than 0.05. This indicates that there are no signs of heteroscedasticity, which means the residual variance remains constant and is not dependent on the value of the independent variable. This data is displayed in Table 11, where all variable significance values are above 0.05, confirming that the homoscedasticity assumption is met. In the absence of heteroscedasticity, the regression model can be considered valid, and the results of the regression analysis become more reliable and unbiased.

Table 11. Heterotrait-Monotrait Ratio (HTMT)

Description	ERM (X1)	IC (X2)	Intervening SR*ERM	Intervening SR*IC	SR (intervening)	Firm Value (Y)
ERM (X1)						
IC (X2)	0.525					
Intervening SR*ERM	0.533	0.260				
Intervening SR*IC	0.464	0.653	0.690			
SR (intervening)	0.601	0.821	0.301	0.585		
Firm Value (Y)	0.578	0.735	0.328	0.591	0.760	

Cronbach's Alpha Reliability Test

The composite reliability value is used to evaluate structural reliability in research. A variable is considered to meet construct reliability if its composite reliability value is more than 0.7 and its Cronbach's alpha value is more than 0.7. Table 12 shows the composite reliability values of each indicator.

Table 12. Construct Reliability and Validity

Description	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
ERM (X1)	1.000	1.000	1.000	1.000
IC (X2)	1.000	1.000	1.000	1.000
Intervening SR*ERM	1.000	1.000	1.000	1.000
Intervening SR*IC	1.000	1.000	1.000	1.000
SR (intervening)	1.000	1.000	1.000	1.000
Firm Value (Y)	1.000	1.000	1.000	1.000

Table 12 shows that the values for each variable in the reliability test, whether using Cronbach's Alpha or composite reliability, are > 0.70, and the validity test using AVE (Average Variance Extracted) obtained a value of > 0.50. Therefore, it can be concluded that each research variable is valid and reliable, allowing for the testing of the structural model to proceed.

Structural Model Analysis (Inner Model)

Inner Model Evaluation is a test of the structural model that can be conducted by examining the effect and R-square values to address the proposed hypothesis.

After conducting testing and measurement of the model by assessing its validity and reliability, the next step is to conduct structural model testing (inner model). The evaluation of the structural model, or inner model, aims to predict the relationships between latent variables and answer the proposed hypotheses. The inner model diagram in this study is illustrated in appendix 2.

The measurement of the structural model, R-squared value, is used to measure the level of variation in the change of independent variables against the dependent variable. The higher the R-squared value, the better the prediction model of the research model.

R-squared Determination Value

The coefficient of determination test aims to determine how much the independent variable can explain the dependent variable. The determination test can be seen through R-squared, and the R-squared value can be found in Table 13.

Table 13. R Square

Description	R Square	R Square Adjusted
SR (intervening)	0.716	0.708
Firm Value (Y)	0.635	0.628

The R-Square (R^2) value is a statistical indicator that shows the extent to which variability in the dependent variable, in this case, firm value, can be explained by the independent variables of Enterprise Risk Management (ERM) disclosure, Firm value, Intellectual Capital (IC), and Sustainability Reporting (SR) disclosure. With an R-Square value of 0.628 (or 62.8%), this means that 62.8% of the variation in firm value can be explained by these independent variables. This figure is relatively small, indicating that the model used has limitations in explaining the support for business sustainability. The variables in this study, namely the disclosure of Enterprise Risk Management (ERM), Firm value, Intellectual Capital (IC), and the disclosure of Sustainability Reporting (SR), may not be the main factors supporting business sustainability in the context of this research, or there may be other more dominant factors not included in the model. In other words, the contribution of these variables to business sustainability is already quite significant, but further studies are needed to identify other more influential factors, or improvements to the model used to enhance its capability in supporting firm value analysis. It is also important to note that a low R-Square value does not always mean the model is bad; it could indicate that the relationship between the studied variables is complex or non-linear, or that there are other variables that have not been considered.

SEM Analysis with Intervening Effects

Analysis of the hypothesis can be conducted after the research model is deemed feasible. The next step is to test the hypothesis. In this case, the sample is tested using the bootstrapping technique. The hypothesis test, conducted by examining the bootstrapping value results, is the final step of the test using the Smart PLS application. The detailed results of this hypothesis test are presented in Table 14.

Table 14. test intervening variable

Variable	Prediction	Path Coefficient	P-Values
Intervening SR*IC → SR (intervening)	+	0.074	0.023
Intervening SR*ERM → SR (intervening)	+	-0.058	0.505

The results of the SEM analysis show that Sustainability Reporting (SR) acts as an intervening variable with different effects on Firm Value, depending on the variable it mediates. In the relationship between Enterprise Risk Management (ERM) and Firm Value, SR has a path coefficient value of -0.058, indicating a negative correlation. This means that when SR is used as a mediator, an increase in the implementation of ERM actually contributes to a decrease in its impact on Firm Value. These findings can be interpreted as suggesting that an excessive focus on sustainability disclosure may divert attention from the effectiveness of risk management. On the other hand, in the relationship between Intellectual Capital (IC) and Firm Value, SR has a path coefficient value of 0.074, indicating a positive correlation. This indicates that SR is capable of strengthening the influence of IC on Firm Value, by highlighting intellectual elements such as innovation and competence through good sustainability disclosure.

These two findings highlight the importance of strategic SR management to support the influence of other variables on Firm Value.

Total Effect

Total Effect is the result of adding direct influence to indirect influence. The results of the total effect test can be seen in the Table 15.

Table 15. Total Effect Value

Variable	Prediction	Path Coefficient	P-Values
ERM (X1) → Firm Value (Y)	+	0.174	0.273
IC (X2) → Firm Value (Y)	+	0.324	0.575
ERM (X1) → SR (intervening)	+	0.256	0.256
IC (X2) → SR (intervening)	+	0.644	0.644
ERM*IC*SR → Firm Value (Y)	+	0.389	0.389
Intervening SR*IC → SR (intervening)	+	0.074	0.074
Intervening SR*ERM → SR (intervening)	+	-0.058	-0.058

Based on the results of the path analysis conducted, this study shows that Enterprise Risk Management (ERM) and Intellectual Capital (IC) have a significant impact on firm value, both directly and indirectly through Sustainability Reporting (SR) as an intervening variable.

Second, Intellectual Capital (X2) shows a greater total influence, namely 0.575, on the company's value. Thus, every one-unit increase in intellectual capital can raise the company's value by up to 57.5% through a

combination of direct and indirect effects. These results underscore the importance of managing intellectual assets as a strategic factor in creating firm value. Furthermore, the analysis also shows that ERM (X1) has a total influence of 0.256 on Sustainability Reporting (SR) as an intervening variable. This means that an increase of one unit in ERM will drive a 25.6% increase in sustainability reporting, reflecting a positive relationship between risk management and the company's commitment to transparency and sustainability.

Similarly, Intellectual Capital (X2) has a total influence of 0.644 on SR, indicating that an increase in IC significantly drives an improvement in sustainability reporting, with a contribution of 64.4%. These findings strengthen the argument that strong intellectual assets, such as HR competencies and organizational structure, play a crucial role in facilitating the company's sustainability performance. Furthermore, the research results also identified a simultaneous effect from the interaction between ERM, IC, and SR (ERMICSR) on the company's value of 0.389. This indicates that the integration of these three strategic components can increase the company's value by 38.9%, either through direct or indirect mechanisms, and overall has a positive effect on the company's performance.

Additionally, the combination of IC and SR as intervening variables (IC/SR) provides a total influence of 0.074 on firm value, which, although relatively small, still shows a positive effect of 7.4%. This indicates that the synergy between intellectual capital and sustainability reporting contributes to value creation. On the contrary, the interaction between ERM and SR as an intervening variable (ERM/SR) shows a total negative impact of -0.058 on the company's value. This means that the increased interaction between risk management and sustainability reporting can actually decrease the company's value by 5.8%. This result indicates that under certain conditions, the implementation of SR influenced by ERM can lead to unfavorable consequences for the company's value, possibly due to administrative burdens, strategic misalignment, or suboptimal market perception.

Analysis of hypothesis answers

Analysis of the hypothesis can be conducted after the research model is deemed feasible. The next step is to test the hypothesis. In this case, the sample is tested using the bootstrapping technique. The hypothesis test, which is conducted by examining the bootstrapping value results, is the final step of the test using the Smart PLS application. The results of this hypothesis testing are summarized in Table 16. Here are the answers to the proposed hypotheses:

Table 16. Hypothesis Results

Hypothesis	Variable	Prediction	Path Coefficient	T Statistics (|O/STDEV|)	P Values	Conclusion
1	ERM (X1) → Firm Value (Y)	+	0.174	2.036	0.042	Accepted
2	IC (X2) → Firm Value (Y)	+	0.324	2.192	0.029	Accepted
3	ERM (X1) → SR (intervening)	+	0.256	2.442	0.015	Accepted
4	IC (X2) → SR (intervening)	+	0.644	5.786	0.000	Accepted
5	ERM*IC*SR → Firm Value (Y)	+	0.389	2.484	0.013	Accepted
6	Intervening SR*IC → SR (intervening)	+	0.074	2.020	0.023	Accepted
7	Intervening SR*ERM → SR (intervening)	+	-0.058	0.668	0.505	Rejected

Firm Value = 0.174 ERM + 0.324 IC + 0.256 ERM*SR + 0.644 IC*SR + 0.389 ERM*IC*SR + 0.074 SR*IC - 0.058 SR*ERM > VF

Explanation:
VF = Firm Value
ERM = Enterprise Risk Management
IC = Intellectual Capital
SR = Sustainability Reporting
SR*ERM = Interaction between Sustainability Reporting and Enterprise Risk Management
SR*IC = Interaction between Sustainability Reporting and Intellectual Capital
ERM*IC*SR = Interaction between Enterprise Risk Management, Intellectual Capital, and Sustainability Reporting

Disclosure of Enterprise Risk Management Has an Impact on Firm value

The test results show that Enterprise Risk Management (ERM) has a significant impact on firm value. This is indicated by a t-statistic value of 2.063, which is higher than the critical value of 1.960, indicating a strong and positive relationship. Additionally, a p-value of 0.042, which is below the significance level of 0.05, reinforces the result that the influence of ERM is statistically significant. These findings indicate that ERM disclosure has a positive contribution to the increase in firm value, reflecting the importance of effective risk management implementation

in supporting the company's performance and reputation in the eyes of stakeholders. Thus, the hypothesis is accepted. This is in line with what Darškuvienė et al. (2021) and Yang et al. (2022) stated that Enterprise Risk Management disclosure has a positive contribution to the increase in firm value.

The Influence of Intellectual Capital on Firm value

The testing shows that Intellectual Capital (IC) has a significant influence on firm value. This is indicated by a t-statistic value of 2.192, which is quite high, indicating a strong relationship. Additionally, the P-value of 0.029, which is below the significance level of 0.05, confirms that the influence of IC is statistically significant. These results affirm that Intellectual Capital plays a crucial role in enhancing the value of the company, reflecting that good management and disclosure of IC can contribute positively to organizational performance, competitiveness, and sustainable added value. Thus, the hypothesis is accepted. This is in line with what Kordi et al. (2023) and Bamel et al. (2022) stated that Intellectual Capital disclosure has a positive contribution to the increase in firm value.

The Influence of Sustainable Reporting Disclosure on Firm value

The test results show that Sustainable Reporting (SR) has a significant influence on firm value. This is evidenced by a t-statistic value of 2.442, which is higher than the critical threshold of 1.960, indicating a strong relationship. In addition, the P-value of 0.015, which is smaller than the significance level of 0.05, confirms the statistical significance of the influence. These findings underscore the importance of implementing and disclosing sustainability reports in enhancing firm value. SR not only reflects social and environmental responsibility but can also be a strategic factor that supports the company's reputation as well as the trust of investors and stakeholders. Thus, the hypothesis is accepted. This is in line with what Kräusche and Pilz (2018) and Giron et al. (2020) stated that sustainable reporting disclosure has a positive contribution to the increase in firm value.

The Influence of Intellectual Capital on the Disclosure of Sustainability Reporting on Firm value

The test results show that Intellectual Capital (IC) has a significant influence on the Sustainability Report (SR). The t-statistic value of 5.786, which is far above the critical threshold of 1.960, indicates a very strong relationship. In addition, the P-value of 0.000, which is smaller than the significance level of 0.05, confirms that the influence of IC on SR is statistically significant. These results emphasize that good management of Intellectual Capital directly contributes to the quality and sustainability of SR reports. This reflects the importance of investing in intellectual resources to support transparent and high-value sustainability disclosures for stakeholders. Thus, the hypothesis is accepted. This is in line with what Van der Zahn (2023) stated that intellectual capital disclosure has a positive contribution to the increase in Sustainability Reports.

The Influence of Enterprise Risk Management Disclosure, Intellectual Capital, and Sustainability Reporting on Firm value

The test results show that Enterprise Risk Management (ERM), Intellectual Capital (IC), and Sustainability Reporting (SR) together have a significant influence on firm value. The t-statistic value of 2.484, which is higher than the critical threshold of 1.960, confirms a strong relationship between these three variables and the company's value. Additionally, the P-value of 0.013, which is smaller than the significance level of 0.05, confirms that the effect is statistically significant. These findings emphasize the importance of effective ERM implementation, optimal IC management, and transparent SR application in supporting value creation for the company. ERM helps the company manage risks better, IC becomes a strategic asset that enhances competitiveness, and SR reflects the company's commitment to sustainability. The combination of these three factors can strengthen the company's reputation, attract investors, and drive long-term growth. Thus, the hypothesis is accepted. This is in line with what Suratman et al. (2023), Chairani and Siregar (2021), and Nirino (2022) stated that Enterprise Risk Management (ERM), Intellectual Capital (IC), and Sustainability Reporting (SR) disclosure have a positive contribution to the increase in firm value.

The influence of Intellectual Capital Disclosure with the variable Sustainability Report on firm value.

The test results show that the influence of Intellectual Capital (IC) through the intervening variable Sustainability Report (SR) on firm value is statistically significant. This is indicated by a P-value of 0.023, which is below the significance level of 0.05; thus, this relationship can be accepted. However, the t-statistic value of 2.020, being slightly above the critical threshold of 1.960, indicates that the relationship is not very strong.

These findings indicate that IC plays an important role in supporting firm value through SR as an intervening variable. Good management and disclosure of IC can enhance the quality of sustainability reports, which in turn contributes to the increase in firm value. However, the weakness in the strength of this relationship indicates the need for improved strategic integration between IC and SR. This can be achieved by enhancing the

relevance of the information disclosed in SR to better reflect the benefits of IC on sustainability and firm value. Thus, the hypothesis is accepted. This is in line with what Stefanescu (2022) stated that Intellectual Capital (IC), through the intervening variable Sustainability Report disclosure, has a positive contribution to the increase in firm value.

The influence of Enterprise Risk Management disclosure with the variable Sustainability Report on firm value.

The test results show that the influence of Enterprise Risk Management (ERM) through the intervening variable Sustainability Report (SR) on firm value is not statistically significant. The t-statistic value of 0.668, which is far below the critical threshold of 1.960, indicates that this relationship is weak. Additionally, the P-value of 0.505, which is greater than the significance level of 0.05, indicates that statistically, the combined influence of ERM through SR on firm value is not acceptable.

These findings suggest that although ERM is important in corporate risk management, its presence may not be sufficient to directly influence the company's value through SR as an intervening variable. This may also indicate the need for improved quality in risk management and sustainability reporting to have a more significant impact. A better integration strategy between ERM and SR is needed to create a greater contribution to the company's value. Therefore, the hypothesis is rejected. This is in line with what Arianpoor et al. (2023) stated that the influence Enterprise Risk Management (ERM) through the intervening variable Sustainability Report (SR) on firm value is not statistically significant in contribution to the increase in firm value.

Conclusion

This research found that corporate risk management, intellectual capital, and sustainability report disclosure, as moderating variables, significantly affect firm value. Sustainability report disclosure acts as a moderating variable that strengthens the relationship between intellectual capital and firm value. This indicates that good management of intellectual capital, such as the knowledge and skills possessed by the company, can enhance the quality of transparent and comprehensive sustainability reports, which in turn increases firm value. Additionally, corporate risk management also has a significant impact on firm value. However, despite this significant relationship, sustainability report disclosure does not show a strong moderating effect between corporate risk management and firm value.

The success of sustainability report disclosure in moderating the relationship between intellectual capital and firm value highlights the importance of integrating sustainability strategies into the company's managerial practices. However, the disclosure of sustainability reports does not seem to improve or influence the relationship between risk management and firm value. One possible reason is that the quality of the company's risk management still needs to be improved in order to have a significant impact on the company's value. Effective risk management includes the identification and mitigation of appropriate risks, as well as the management of uncertainties that can influence the company's strategic decisions. If risk management can be better integrated into the company's structure and sustainability reports, it is expected to significantly enhance its impact on the company's value in the future. This research provides important insights for companies to focus more on improving the quality of risk management, intellectual capital management, and sustainability report disclosures as part of a sustainable corporate value creation strategy.

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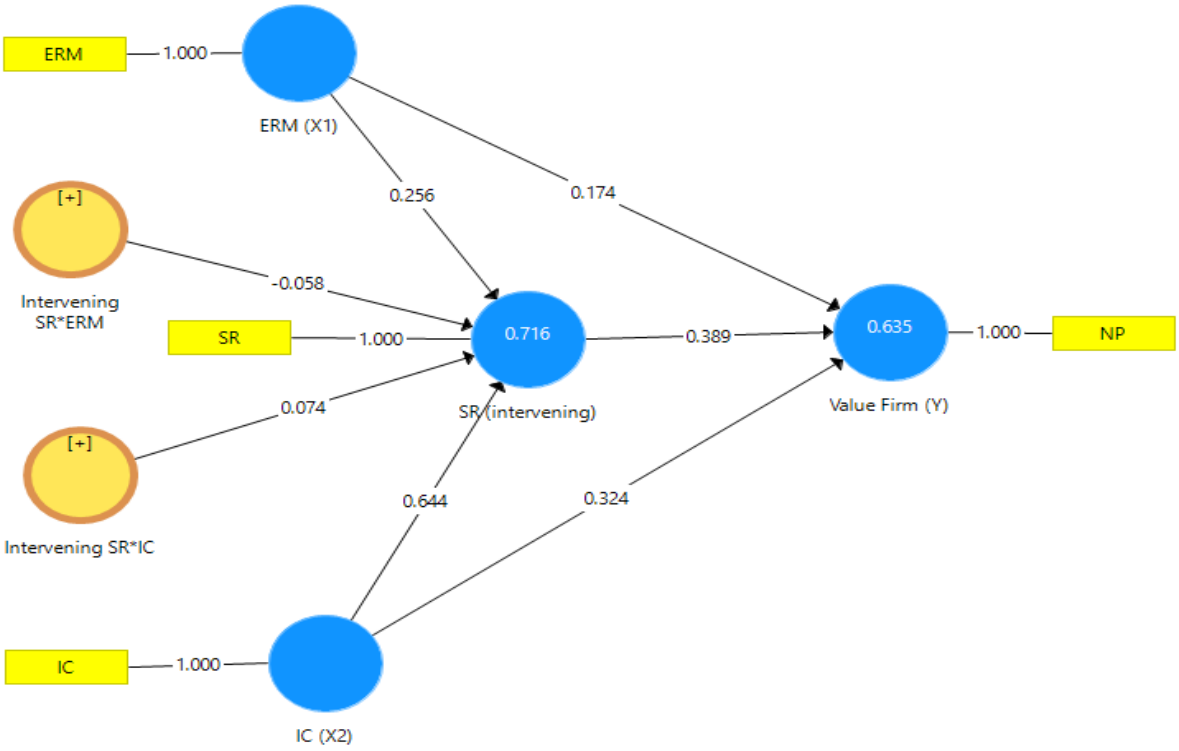
Appendix

Appendix 1. Outer Model



Appendix 2. Inner Model