



The Role of Corporate Governance Strategy in Indonesia: Digital Transformation in Corporate Social Responsibility Disclosure

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Abstract

Purpose: This study aims to examine the impact of digitalization on corporate social responsibility (CSR) disclosure and to explore the moderating role of corporate governance strategies, particularly managerial ownership and internal control strength, in the context of public companies in Indonesia.

Method: This research is an explanatory quantitative study using Moderated Regression Analysis (MRA). The study sample consists of 140 companies listed on the Indonesia Stock Exchange (IDX) from 2020 to 2023. Data was collected from annual and sustainability reports and analyzed using a digitalization index and CSR disclosure index based on the Global Reporting Initiative (GRI) standards.

Findings: The results reveal that digitization has a positive and significant effect on CSR disclosure. Managerial ownership weakens the relationship between digitization and CSR disclosure, while it is strengthened by the strength of internal control. These findings indicate that the effectiveness of digitization in improving CSR transparency depends on the quality of internal corporate governance mechanisms.

Originality/Value: This study offers new empirical contributions by integrating digitalization strategies and corporate governance into an integrated analytical framework for understanding CSR disclosure practices. It also uses a moderation approach that is rarely applied in the Indonesian context and introduces a measurable digitalization index that can be adapted to other developing countries.

Keywords: Digitalization, CSR, Corporate Governance.

Paper Type: Research Paper

1. Introduction

The rapid development of digital technology has fundamentally changed the global business landscape, driving a profound transformation in the way organizations communicate and interact with stakeholders. In this digital age, transparency, accountability, and sustainability have become key expectations of both investors and the public. Corporate Social Responsibility (CSR), once considered a philanthropic addition, has evolved into a strategic necessity that reflects a company's ethical stance, commitment to long-term value creation, and alignment with community expectations (Carroll, 2021). In Indonesia, increasing regulatory pressure and growing stakeholder awareness have accelerated the need for transparent and structured CSR disclosure. It is particularly evident after the implementation of OJK Regulation No. 51/POJK.03/2017 on Sustainable Finance, which mandates the integration of environmental, social, and governance (ESG) aspects into corporate strategy and disclosure. Furthermore, in an environment increasingly

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influenced by digitalization, companies are expected not only to act responsibly but also to effectively communicate their CSR initiatives through digital platforms.

Digitalization in this context refers to the adoption and integration of digital technologies such as web-based platforms, electronic reporting systems, and social media into business processes and communication strategies (Vrana & Singh, 2021; Laudon & Laudon, 2020). Digital tools enable wider and faster dissemination of CSR-related information, provide real-time updates, encourage interactive engagement, and promote greater accountability (Wang et al., 2022; Jin & Mirza, 2024). Companies that implement digital transformation tend to demonstrate higher quality CSR disclosure (Małkowska et al., 2021). However, the mere existence of digital platforms does not necessarily guarantee transparency or reliability of reporting. The effectiveness of digitalization in improving CSR disclosure depends on the underlying corporate governance structure. In particular, managerial ownership and internal control mechanisms play an important role in directing how digital technology is utilized for reporting purposes. Without adequate governance, digitalization risks becoming merely a performative or symbolic exercise rather than a true mechanism for accountability and legitimacy (Khan et al., 2023; Jin & Mirza, 2024).

Legitimacy theory provides the theoretical basis for this study. This theory assumes that organizations strive to align their operations with prevailing social norms and values in order to gain public approval and maintain their “license to operate” (Martens & Bui, 2023; Mousa & Hassan, 2020). CSR activities and their disclosure function as important instruments to bridge potential legitimacy gaps. In this case, digitalization is not merely a technological upgrade, but a strategic communication tool that can effectively assist organizations in legitimizing their actions to their stakeholders. However, its effectiveness is highly dependent on the governance quality, especially in developing countries with highly varied institutional frameworks and digital infrastructure (Irawan et al., 2022; Islam & Jahid, 2023; Ramananda & Atahau, 2019).

Managerial ownership refers to the extent to which top executives hold equity in the company. While insider ownership can align managerial interests with those of shareholders, excessive managerial control can lead to entrenchment and reduced transparency (Jin et al., 2024; Agustia et al., 2018). Managers with significant shareholdings may have greater incentives to withhold or manipulate CSR information that could expose the company to reputational risk or scrutiny. This phenomenon is relevant to agency theory, which argues that internal governance mechanisms are necessary to mitigate self-serving behavior. Conversely, internal control systems, often operationalized through the COSO (Committee of Sponsoring Organizations) framework, provide a structural basis for reliable financial and non-financial reporting. Strong internal control systems ensure that information disseminated through digital platforms is accurate, verified, and aligned with the company's overall risk management strategy. Previous research has indicated that companies with stronger internal controls tend to demonstrate more comprehensive and credible CSR disclosures (Haron et al., 2023).

Although academic interest in the relationship between CSR and digitalization is increasing, empirical findings remain diverse and are largely concentrated in developed countries with established governance and technological infrastructure (Guerrero-Avenidaño et al., 2023; Jin & Mirza, 2024). In contrast, findings from developing countries are still limited (Al-Omouh et al., 2025; Atanasov et al., 2023). Most studies in developing countries such as China are still conceptual or focus on specific case analyses, with limited quantitative evaluations of how digitalization affects CSR disclosure under various governance conditions (Jin & Mirza, 2024).

The study by [Atanasov et al. \(2023\)](#) highlights that digitalization has the potential to increase corporate transparency, but its implementation is greatly influenced by infrastructure readiness and governance. The research by [Irawan et al. \(2022\)](#) also emphasizes that the use of digital technology in CSR is still more focused on developed countries, while developing countries face limitations in capabilities and digital gaps. To address the research gap ([Irawan et al., 2022](#); [Jin & Mirza, 2024](#)), this study empirically investigates the relationship between digitalization and CSR disclosure, considering the moderating effect of corporate governance strategies in Indonesia as a developing country.

This study aims to investigate three main topics: (1) the impact of digitalization on CSR disclosure; (2) whether managerial ownership moderates the relationship between digitalization and CSR disclosure; and (3) whether internal control moderates the same relationship. This study seeks to fill an important gap in the literature by examining how digitalization interacts with corporate governance to influence CSR disclosure in business and institutional ecosystems operating in the context of developing economies, where governance practices and CSR disclosure are often still varied and not yet standardized.

The benefits of this research are expected to contribute to various stakeholders. For companies, the results of this research can be used as a basis for formulating more effective digital-based CSR disclosure strategies aligned with good governance practices. For investors, this research offers benefits in improving transparency and reducing information asymmetry, thereby enhancing the quality of investment decisions. For regulators and policymakers, the findings of this study can serve as input in the formulation of regulations that encourage the use of digital technology for CSR reporting. In addition, for the public, this study opens up access to CSR information that is more transparent and easily accessible, thereby increasing public trust in companies. Finally, this research also contributes academically by addressing gaps in the literature related to digitalization, corporate governance, and CSR disclosure in the context of developing countries, particularly Indonesia. This research underscores the importance of aligning technological innovation with ethical governance to realize the full potential of digitalization as a driver of corporate accountability and legitimacy.

2. Literature Review

2.1. Legitimacy Theory

Legitimacy theory asserts that companies operate based on a “social contract” with society, so CSR disclosure acts as a strategy to gain, maintain, or restore legitimacy ([Mousa & Hassan, 2020](#); [Martens & Bui, 2023](#)). Digitalization reinforces this function through the rapid, interactive, and transparent dissemination of information, for instance, through websites, interactive reports, or social media ([Camilleri, 2018](#); [Verhoef et al., 2021](#)). However, the effectiveness of digitalization is highly dependent on the quality of information and internal control. Without strong governance, digitalization can actually encourage symbolic practices or greenwashing ([Jin & Mirza, 2024](#)). Conversely, companies with effective governance tend to produce credible, comprehensive, and engaging CSR disclosures ([Małkowska et al., 2021](#); [Omidvar et al., 2025](#); [Velte, 2023](#)). In Indonesia, the relevance of digitalization is further strengthened by OJK Regulation No. 51/POJK.03/2017, which highlights the integration of ESG in reporting. However, studies in developing countries show that a high level of digitalization does not always guarantee the quality of CSR disclosure if governance is weak ([Jin & Mirza, 2024](#)). It suggests a potential legitimacy gap when companies only pursue image without substance ([Tilling &](#)

Tilt, 2024). Therefore, internal control, board involvement, and strong governance are key to ensuring that digitalization truly functions as a driver of sustainable legitimacy (Khan et al., 2022).

2.2. Digitalization of Information

Digitalization refers to the integration of digital technologies such as web-based platforms, cloud computing, big data analytics, artificial intelligence, and blockchain into organizational processes and reporting systems (Vrana & Singh, 2021; Laudon & Laudon, 2020). In the corporate context, digitalization facilitates operational efficiency, enhances decision-making, and significantly transforms stakeholder involvement. Specifically, digitalization changes the landscape of CSR disclosure by enabling companies to provide real-time, dynamic, and easily accessible information to various stakeholders (Małkowska et al., 2021; Camilleri, 2018).

The transition from traditional CSR reporting to interactive digital formats has created new opportunities for transparency and legitimacy. García-Meca et al. (2024) argue that digital reporting tools reduce information asymmetry and increase stakeholder trust. Similarly, Jin and Mirza (2024) found that companies with higher levels of digital maturity demonstrate better consistency and completeness in their CSR disclosures. It is further supported by Broccardo et al. (2023), who proposed a text mining-based digitalization index that measures companies' digital engagement in CSR narratives. These findings are consistent with the premise of legitimacy theory, which states that companies seek to maintain social approval by aligning their disclosures with public expectations (Suchman, 1995; Martens & Bui, 2023). While promising, digitalization is not the best alternative. Guerrero-Avenidaño et al. (2023) warn that digital platforms can be misused to selectively present favorable information while ignoring crucial sustainability issues. This phenomenon, often referred to as “greenwashing,” underscores the importance of internal governance structures in regulating digital disclosure behavior. Therefore, although digitalization enhances the technical capacity of CSR communication, its effectiveness is highly dependent on corporate governance mechanisms.

2.3. CSR Disclosure

Meanwhile, CSR disclosure is a means for companies to demonstrate their social and environmental accountability. This disclosure includes information on environmental sustainability, community development, labor practices, and ethical governance. CSR is increasingly seen not only as an ethical obligation, but also as a strategic element that affects reputation, investor confidence, and market competitiveness (Wahyuni et al., 2024). Regulatory frameworks such as OJK Regulation No. 51/POJK.03/2017 and international standards such as GRI and SASB encourage transparent and standardized CSR reporting in Indonesia.

Legitimacy theory provides a useful framework for understanding why and how companies disclose CSR information. According to Suchman (1995), legitimacy is “the general perception or assumption that an entity's actions are desirable or appropriate within a system of socially constructed norms, values, beliefs, and definitions.” CSR disclosure, especially in digital formats, is then a strategic tool used by companies to build or repair legitimacy gaps.

CSR activities serve to demonstrate that companies contribute positively to society, while CSR disclosure serves to communicate these contributions. The literature shows that digital technology strengthens this legitimization process by raising the visibility, frequency,

and accessibility of CSR communications (Mousa & Hassan, 2020; Martens & Bui, 2023). However, if it is not managed properly, digitalization can also increase the risk of superficial disclosure that does not satisfy stakeholder expectations.

2.4. CSR Disclosure

Corporate governance in this study is represented by two main components, namely managerial ownership and internal control, each of which plays an important role in moderating the relationship between digitalization and CSR disclosure. Managerial ownership refers to the proportion of shares owned by executives and board members (Jin & Mirza, 2024; Zhang et al., 2023). In the context of digitalization, managers with significant ownership can selectively utilize digital platforms to maintain their opinions, thereby discouraging CSR disclosure (Khan et al., 2023; Jin et al., 2024). Meanwhile, internal control serves as a governance mechanism that ensures the reliability of financial and non-financial reporting, including CSR. The COSO Internal Control framework emphasizes the importance of internal control in mitigating risk, improving information accuracy, and promoting ethical decision-making (Haron et al., 2023). In the context of digitalization, a robust internal control system can strengthen the positive impact of digital technology on CSR transparency by ensuring that the data presented on digital platforms is credible, consistent, and auditable.

Thus, managerial ownership and internal control represent two crucial aspects of corporate governance, namely the aspect of ownership structure that influences managerial incentives, and the aspect of control mechanisms that maintain the quality of information.

2.5. Hypothesis Development

2.5.1. *Digitalization and CSR Disclosure*

The first hypothesis was developed based on the premise that digital transformation improves companies' ability to meet public expectations through transparent reporting. Digitalization provides new mechanisms for companies to increase the transparency and accountability of CSR disclosures through media such as websites, interactive reports, and other digital platforms (Camilleri, 2018). Based on legitimacy theory, the use of digital technology strengthens companies' ability to respond to stakeholder expectations, reduces legitimacy gaps, and reduces information asymmetry (Tilling & Tilt, 2024; García-Meca et al., 2024). Empirical research also shows that companies with higher levels of digitalization tend to provide more complete, consistent, and accessible CSR disclosures (Małkowska et al., 2021; Sun et al., 2023; Jin & Mirza, 2024). Thus, digitalization not only facilitates communication but also becomes a strategic means to strengthen corporate legitimacy through social and environmental information disclosure. Therefore, the first hypothesis is formulated as follows:

H₁: Digitalization has a positive effect on CSR disclosure.

2.5.2. *The Moderating Role of Managerial Ownership*

Although digitization can increase CSR disclosure, managerial ownership can alter this relationship. Managerial ownership refers to the proportion of company shares owned by executives or board members, influencing their control over company decisions. From a legitimacy perspective, excessive managerial control can result in self-serving disclosure behavior, where CSR is used strategically to protect the image of top management rather than to promote transparency (Jin & Mirza, 2024; Agustia et al., 2018). Furthermore, in companies with strong managerial dominance, digitalization can be used

to selectively highlight positive CSR activities while concealing controversial information. This symbolic use of CSR disclosure, often facilitated by digital tools, compromises corporate credibility and erodes public trust (Khan et al., 2022). Thus, managerial ownership is expected to moderate the positive relationship between digitalization and CSR disclosure:

H₃: Managerial ownership positively moderates the relationship between digitalization and CSR disclosure.

2.5.3. The Moderating Role of Internal Control

Conversely, internal control mechanisms are expected to strengthen the relationship between digitization and CSR transparency. Internal control refers to the processes and systems applied to assure that company operations, including financial and non-financial reporting, comply with standards of accuracy, completeness, and compliance (Haron et al., 2023). Strong internal controls reduce the risk of information manipulation and increase the reliability of CSR disclosures disseminated through digital platforms. Within the framework of legitimacy theory, companies with strong internal controls are in a better position to take advantage of digitalization, not only for symbolic purposes, but also to authentically fulfill their social accountability (Jin & Mirza, 2024). These companies are more likely to disclose comprehensive and verified CSR information, which supports long-term legitimacy and strengthens stakeholder trust. Therefore, internal control is expected to positively moderate the impact of digitalization on CSR disclosure:

H₃: Internal control positively moderates the relationship between digitalization and CSR disclosure.

3. Research Method

This study uses an explanatory quantitative design with a population of all companies listed on the Indonesia Stock Exchange for the period 2020–2023. Through purposive sampling, 140 companies that consistently published annual reports and sustainability reports during the research period were obtained. The secondary data was collected from annual reports, sustainability reports, the IDX portal, and company websites.

The independent variable was digitalization, measured by the frequency index of digital keywords in annual reports, referring to Broccardo et al. (2023) and Zeng et al. (2022) to develop an index by analyzing the frequency of words in financial reports. Word frequency data was normalized and the weight of each indicator was calculated using the entropy value approach to obtain the overall digital development index of companies listed on the IDX. More detailed information on categories and word selection is listed in Appendix 1.

The dependent variable is CSR disclosure, measured using the CSR Disclosure Index (CSRI) based on the 2021 GRI Standards, which covers economic, environmental, and social aspects. The moderating variables consist of managerial ownership, calculated as the proportion of shares owned by executives to total outstanding shares, and internal control, which is assessed based on the effectiveness of the audit committee and internal audit function in accordance with the COSO framework (Haron et al., 2023).

The operational definitions and measurement techniques for each variable are summarized in the following table.

Table 1. Variable Operational Definitions

Variable	Definition	Measurement
Corporate Social Responsibility (CSR)	The extent to which companies disclose their social and environmental responsibilities in their official reports.	CSR Index based on the Global Reporting Initiative (GRI) 2021 Standards.
Digitalization (DIG)	The level of digital transformation implemented by companies in the use of digital channels and systems to support operations and reporting.	Index of keyword frequency related to digital (e.g., “digital,” “technology,” “platform”) in annual reports.
Managerial Ownership (MO)	The proportion of shares owned by the company's directors and top executives.	The percentage of shares owned by management relative to the total outstanding shares.
Internal Control (COSO)	The quality of internal control systems that govern financial reporting and company operational processes.	Internal Control Index based on the COSO framework.
Company Size (SIZE)	Proxies to describe the capacity and complexity of companies that may influence CSR disclosure.	Calculated using the natural logarithm of total assets (Ln Total Assets) in millions or billions of Rupiah.

The sample consisted of 140 companies from various sectors, mainly those focused on the consumer goods industry—including food and beverage companies—which are known to have high visibility and stakeholder sensitivity to CSR issues.

Data collection involved a systematic review of published reports taken from the company's official website, the IDX portal, and third-party financial databases. Each report was manually checked and supplemented with keyword search automation to extract digitized content (Zeng et al., 2022).

CSR disclosure was measured using the CSR Disclosure Index (CSRI) based on the Global Reporting Initiative (GRI) 2021 Standards, including economic, environmental, and social performance indicators (Małkowska et al., 2021; Wahyuni et al., 2024). Managerial ownership data was obtained from the corporate governance section of annual reports, measured as the proportion of shares owned by directors and executive managers relative to total outstanding shares. Internal control was assessed through the characteristics of the audit committee publicly disclosed and the effectiveness of the internal audit function, consistent with the COSO-based framework adopted in the study by Haron et al. (2023). Internal control indicators included independence, meeting frequency, financial expertise, and oversight function. Control variables included company size, measured as the natural logarithm of total assets (Khan et al. 2023). Company size was controlled so that the analysis results could distinguish the real effect of digitalization on CSR disclosure, regardless of the fact that large companies are indeed more active and capable of sustainability reporting (Akbar & Deegan, 2019). The data were analyzed using Moderated Regression Analysis (MRA). The regression model was constructed as follows:

Model 1:

$$Y = \alpha + \beta_1DIG + \beta_2SIZE + e \dots\dots\dots(1)$$

Model 2:

$$Y = \alpha + \beta_1DIG + \beta_2MO + \beta_3 (DIG \times MO) + \beta_4SIZE + e \dots\dots\dots(2)$$

Model 3:

$$Y = \alpha + \beta_1DIG + \beta_2COSO + \beta_3 (DIG \times COSO) + \beta_4SIZE + e \dots\dots\dots(3)$$

Description:

Y	= CSR Disclosure Value
α	= Constant
$\beta 1 - \beta 4$	= Regression Coefficient
DIG	= Digitalization of Company Information
MO	= Managerial Ownership Moderating Variable
COSO	= Internal Control Moderating Variable
SIZE	= Company Size Control Variable
e	= Residual Value

4. Results and Discussion

Descriptive statistics provide an initial overview of the distribution and central tendency of the variables used in this study. These variables include: digitalization, CSR disclosure, managerial ownership, internal control, and company size control variables. The results of the descriptive statistical analysis are presented in the following table.

Table 2. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Dev.
Digitalization (DIG)	560	-1.69	0.96	0.145	0.423
CSR Disclosure (CSR)	560	0.64	1.00	0.903	0.044
Managerial Ownership (MO)	560	0.00	1.00	0.785	0.411
Internal Control (COSO)	560	0.00	1.00	0.521	0.500
Company Size (SIZE)	560	1.44	1.55	1.492	0.021

The descriptive analysis results provide an overview of the characteristics of all research variables. The mean value of the digitalization variable is 0.145 with a standard deviation of 0.423, indicating that the level of digital adoption among companies varies considerably. It indicates that most companies have implemented elements of digitalization in their operational and reporting processes, but the level of implementation is not uniform throughout the sample. The average value of CSR disclosure is 0.903 with a range between 0.64 and 1.00, showing that the sample companies generally have a high level of social and environmental openness. This value reflects fairly good compliance with sustainability reporting standards, particularly according to the GRI 2021 guidelines.

Furthermore, the managerial ownership (MO) variable has an average of 0.785, which means that most companies have a relatively high proportion of share ownership by management. This condition indicates the potential for a significant influence of ownership structure on CSR reporting policies. The internal control variable (COSO) has an average value of 0.521, indicating that about half of the companies have a strong internal control system. This aspect is important because the effectiveness of internal control systems is often a factor that supports reporting transparency. Meanwhile, the control variable, company size (SIZE), shows an average of 1.492 with a small deviation (0.021), indicating homogeneity in size among companies in the research sample.

Overall, these descriptive results illustrate that the companies in the sample are relatively advanced in terms of CSR reporting and digital adoption, with moderate variation in governance and financial structure. These conditions provide validation for the research in testing the influence of digitalization and governance factors on CSR disclosure in Indonesia.

4.1. Classical Assumption Test

Before performing moderation regression analysis, classical assumption testing is first conducted to ensure that the regression model meets the BLUE (Best Linear Unbiased Estimator) criteria, which is free from violations of normality, multicollinearity, heteroscedasticity, and autocorrelation assumptions.

Table 3. Classical Assumption Test

Types of Tests	Test Results	Criteria	Conclusion
Normality	Sig. = 0,183 > 0,05	Normal residual data	Fulfilled
Multicollinearity	VIF < 10; Tolerance > 0,10	There is no correlation between variables	Fulfilled
Heteroscedasticity	Sig. > 0,05	Homogeneous residual variance	Fulfilled
Autocorrelation	DW = 1,974 (between du and 4-du)	No autocorrelation	Fulfilled

The normality test was performed using the Kolmogorov-Smirnov (K-S) method on the residual data. The test results showed a significance value of 0.183, which is greater than the significance level of 0.05. It means that the residual data is normally distributed, so the regression model is suitable for hypothesis testing. The multicollinearity test was performed to determine whether there was a high correlation between independent variables. The testing criteria indicate that if the Tolerance value is > 0.10 and VIF is < 10, then there is no multicollinearity. The test results show that the Tolerance value of all variables is > 0.98 and VIF is < 1.02, so it can be concluded that there is no high correlation between independent variables. The heteroscedasticity test was conducted by observing the significance value of the regression between the absolute residuals and the independent variables. Based on the analysis results, all variables had a significance value > 0.05, indicating that the residual variance was homogeneous and there was no particular pattern in the data distribution. The autocorrelation test was performed using the Durbin-Watson (DW test) to detect correlations between residuals in different time periods. The DW value obtained was 1.974, which is between the upper limit (du) and 4-du, indicating that there is no positive or negative autocorrelation in the regression model. Overall, the results of the classical assumption test show that the regression model in this study meets all classical criteria. Thus, the model can be used for moderation regression analysis without causing estimation bias, so that the results of the hypothesis testing can be statistically reliable.

The correlation analysis results show a relationship that is consistent with the theoretical assumptions of the study.

Table 4. Intervariable Correlation

Variable	CSR	DIG	MO	COSO	SIZE
CSR	1.000	0.271	0.326	0.295	0.118
DIG	0.271	1.000	0.194	0.213	0.093
MO	0.326	0.194	1.000	0.178	0.087
COSO	0.295	0.213	0.178	1.000	0.081
SIZE	0.118	0.093	0.087	0.081	1.000

The correlation value between digitalization and CSR disclosure of 0.271 indicates a positive relationship with moderate strength, which means that the higher the level of digitalization implementation, the greater the tendency for companies to disclose their CSR activities. This finding supports the assumption that digital transformation promotes corporate transparency and social legitimacy. The positive correlation between managerial ownership (MO) and CSR of 0.326 indicates that the greater the proportion of share ownership by management, the greater the concern for corporate social responsibility.

However, its direct and interactive effects are still tested through a moderation regression model.

The relationship between internal control (COSO) and CSR of 0.295 also shows a positive correlation, indicating that companies with strong internal control systems tend to have better and more credible CSR reporting. This result is consistent with corporate governance theory, which emphasizes the importance of internal control for reporting transparency. The correlation between company size (SIZE) and CSR is relatively weak ($r = 0.118$), indicating that company size does not have a strong influence on CSR disclosure, in the context of this sample, possibly because the company size variation is relatively homogeneous. Overall, the correlation results confirm the theoretical relationship pattern that digitalization, managerial ownership, and internal control are positively correlated with the level of CSR disclosure. These findings reinforce the theoretical basis of legitimacy and corporate governance that form the framework of this study.

Simultaneous Significance Test (F-test) was conducted to determine whether the independent variables collectively had a significant effect on the dependent variable, namely CSR disclosure. The F-test results for the three models are presented in the following table.

Table 5. Simultaneous Significance Test (F-test)

Model	F Count	Sig.	Remarks
Model 1 (DIG, CSR, SIZE)	13.412	0.000	Significant
Model 2 (Moderation DIG_MO)	14.205	0.000	Significant
Model 3 (Moderation DIG_COSO)	11.839	0.000	Significant

The significance value of the entire model is $0.000 < 0.05$, indicating that the regression model formed is simultaneously significant. It means that the combination of digitalization, managerial ownership, internal control, and control variables (company size) together have a significant effect on the level of CSR disclosure. Thus, the regression model is suitable for use in further hypothesis testing. The F-test results confirm that the research model comprehensively explains the factors that influence CSR disclosure, and that each variable in the model contributes significantly to corporate transparency.

Partial Significance Test (t-test) was conducted to assess the effect of each independent variable individually on the dependent variable. The partial test results for the three models are shown in the following table:

Table 6. Partial Significance Test (t-test)

Model	Variable	t Count	Sig.	Remarks
Model 1	Digitalization	2.532	0.012	Significant (+)
	SIZE	-1.703	0.089	Insignificant
Model 2	Digitalization	2.214	0.027	Significant (+)
	DIG_MO	3.742	0.000	Significant (+, moderation)
Model 3	Digitalization	2.003	0.046	Signifikan (+)
	DIG_COSO	2.618	0.009	Significant (+, moderation)

The digitalization variable has a significant positive effect on CSR disclosure in all models, thus supporting the first hypothesis (H1 accepted). It means that increased adoption of digital technology contributes to increased transparency and quality of CSR disclosure. The interaction variable of digitalization \times managerial ownership (MO) has a significant positive effect, indicating that managerial ownership strengthens the influence of digitalization on CSR (H2 accepted). The interaction variable of digitalization \times internal control (COSO) also positively and significantly affects CSR disclosure, meaning that a strong internal control system strengthens the relationship between digitalization and CSR disclosure (H3 accepted). The company size control variable (SIZE) does not significantly

affect CSR disclosure, indicating that company size is not a major determining factor in this study.

The t-test results show that the digitization variable has a positive and significant effect on CSR disclosure in all models. Furthermore, the t-test results for the interaction variable show that managerial ownership (MO) and internal control (COSO) act as strengthening moderators in the relationship between digitization and CSR disclosure. Overall, these partial test results support the legitimacy theory, which asserts that a company's success in improving social transparency is not only determined by its size or resources, but also by its digitalization strategy accompanied by a strong governance system.

Thus, the overall F and t test results show that the synergy between digital transformation and good corporate governance is a key factor in improving corporate social responsibility disclosure in Indonesia.

4.2. Moderation Regression Analysis

Moderation regression analysis was used to determine the extent to which managerial ownership (MO) and internal control (COSO) moderate the relationship between digitization (DIG) and CSR disclosure (CSR).

Table 7. Moderation Regression Analysis

Variable	Model 1		Model 2		Model 3	
	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.
(Constant)	-0.672	0.000	-0.749	0.000	-0.721	0.000
Digitalization (DIG)	0.011	0.009	0.010	0.020	0.009	0.042
DIG _ MO			0.018	0,000		
DIG _ COSO					0.011	0,010
Company Size (SIZE)	-0.141	0.106	-0.091	0.308	-0.104	0.248
F Count	13.412	0.000	14.205	0.000	11.839	0.000
Adjusted R ²	0.065		0.092		0.078	

Model 1 examines the effect of digitization (DIG) on corporate social responsibility (CSR) disclosure, considering the control variable of company size (SIZE). The regression results show that digitalization positively and significantly affects CSR disclosure ($\beta = 0.011$; Sig. = 0.009). It means that the higher the level of digitalization adoption, the more extensive and transparent the CSR disclosure made by the company. Digital technology facilitates the reporting process, enhances information accuracy, and expands public access to sustainability data. These results support the first hypothesis (H1) and are in line with legitimacy theory, which states that companies utilize technology to gain social trust. Company size (SIZE) has no significant effect ($\beta = -0.141$; Sig. = 0.106). It indicates that the size of assets does not always determine the level of CSR disclosure; governance and digital strategy factors play a more important role.

Model 2 examines whether managerial ownership (MO) strengthens the relationship between digitalization and CSR disclosure through the interaction variable DIG \times MO. The results show that digitalization (DIG) still positively and significantly affects CSR ($\beta = 0.010$; Sig. = 0.020). The interaction variable DIG \times CPI has a significant positive effect ($\beta = 0.018$; Sig. = 0.000). It indicates that managerial ownership strengthens the effect of digitalization on CSR Disclosure. The greater the proportion of shares owned by managers, the greater their incentive to utilize digital technology to improve the credibility of CSR reporting. Managers who have a direct financial interest in the company tend to maintain the company's reputation and transparency, especially in the eyes of the public and investors. These findings support the second hypothesis (H2).

Model 3 analyzes whether internal control (COSO) acts as a moderator in the relationship between digitalization and CSR disclosure through the interaction of DIG \times COSO. The results show that digitalization (DIG) still positively and significantly influences CSR ($\beta = 0.009$; Sig. = 0.042). The interaction variable DIG \times COSO also has a significant positive effect ($\beta = 0.011$; Sig. = 0.010). It means that strong internal control strengthens the relationship between digitalization and CSR disclosure. This result suggests that companies with effective internal control systems are able to utilize digitalization more optimally to ensure the accuracy, reliability, and credibility of CSR disclosure. A good internal control system also reduces the risk of data errors or manipulation in digital systems, thereby strengthening stakeholder confidence in corporate sustainability reports. These findings support the third hypothesis (H3).

4.3. Discussion

4.3.1. *The Impact of Digitalization on CSR Disclosure*

The results of the first model regression show that digitalization has a positive and significant effect on CSR disclosure. It means that the higher the level of digitalization in a company, the more extensive the information on social responsibility that is disclosed. This finding supports the first hypothesis (H1) and is in line with the legitimacy theory, which explains that companies use digital reporting as a means to gain social legitimacy through information transparency (Suchman, 1995). Previous studies support this finding, namely Jin and Mirza (2024) and Wang et al. (2022), who found that digitalization improves the quality and frequency of CSR disclosure by facilitating the integration of social and environmental data into reporting systems. Camilleri (2018) also emphasizes that the use of digital technology enables a more interactive and responsive communication process with stakeholders. In Indonesia, these results show that companies have adopted digital technology not only as a communication tool but also as an instrument of legitimacy and social reputation (Kurniawati et al., 2025). Thus, digitalization has proven to play a strategic role in strengthening corporate accountability through more transparent and publicly accessible non-financial reporting.

4.3.2. *Moderation of Management Ownership on the Relationship between Digitalization and CSR*

The second model tests the role of managerial ownership as a moderating variable. Regression results show that managerial ownership strengthens the relationship between digitalization and CSR disclosure. This finding implies that high managerial ownership reflects direct management involvement in strategic decision-making processes, including the use of digital technology to promote reporting transparency, in line with the findings of Agustia et al. (2018). It prompts management to be more responsible for the company's reputation. In addition, Zhang et al. (2023) found that high managerial power tends to make corporate decisions more centralistic and reduce social accountability. This finding reinforces the argument that the role of digitalization in promoting information disclosure is highly dependent on the quality of corporate governance. Thus, the results of the second model emphasize the importance of a balance between digital innovation and sound governance so that digitalization is not used merely symbolically.

4.3.3. Moderation of Internal Control on the Relationship between Digitalization and CSR

The third model shows that internal control strengthens the positive influence of digitalization on CSR disclosure. It indicates that companies with strong internal control systems are better able to utilize digitalization effectively to improve the transparency and accountability of CSR reporting. These results support the third hypothesis (H3) and are in line with legitimacy theory, which highlights that internal governance plays an important role in maintaining the reliability of public information. Effective internal control ensures that digitalization systems not only accelerate reporting but also foster accuracy and compliance with sustainability reporting standards (Haron et al., 2023). These findings align with the research results of Jin and Mirza (2024) and Li and Shen (2021), which state that strong internal control can strengthen digitalization and enhance the credibility of CSR disclosure. Furthermore, Camilleri (2018) and Pizzi et al. (2024) assert that the integration of digital systems and robust internal controls is key to credible sustainability reporting.

5. Conclusion

This study aims to analyze the effect of digitalization on corporate social responsibility (CSR) disclosure, considering the moderating role of managerial ownership and internal control as part of corporate governance strategy. Based on the results of regression analysis, several main conclusions were drawn. Digitalization has a positive and significant effect on CSR disclosure. It shows that the application of digital technology strengthens transparency and the quality of corporate social responsibility disclosure. Digital technology facilitates data integration, speeds up communication, and increases public access to sustainability information. Managerial ownership moderates the relationship between digitalization and CSR. Management involvement as shareholders strengthens the role of digitalization in improving social accountability, as managers have a direct interest in the company's reputation and legitimacy to the stakeholders. Internal control also moderates the relationship between digitalization and CSR. A strong internal control system ensures the reliability of digital data and prevents information manipulation, thereby increasing the credibility and public trust in CSR reporting. Meanwhile, company size has no significant effect, indicating that the effectiveness of disclosure is determined more by governance and digital strategy than by asset scale. Overall, the results of this study confirm that digitalization integrated with good corporate governance can strengthen the transparency, legitimacy, and social accountability of companies in Indonesia.

The results of this study have several important implications, both theoretically and practically. Theoretically, the results reinforce the theory of legitimacy and corporate governance, showing that digitalization plays a significant role in improving corporate social responsibility (CSR) disclosure. Digitalization is a strategic instrument for strengthening corporate legitimacy and transparency in the eyes of the public. Furthermore, the result indicates that managerial ownership and internal control enhance the impact of digitalization, emphasizing the importance of effective governance in maximizing the benefits of digital technology for sustainability reporting. In practical terms, the main implications are directed at corporate management. Companies need to incorporate digital technology into their CSR reporting systems to improve the efficiency, accuracy, and credibility of information. Strengthening proportional managerial ownership and robust internal control is essential to ensure that digitization truly supports transparency and accountability, rather than merely serving as a reporting formality.

Based on the results of the study, several recommendations can be offered. For company management, it is necessary to strengthen the implementation of digitization in sustainability reporting systems to make the CSR disclosure process more efficient, transparent, and accurate. Companies also need to improve proportional managerial ownership and effective internal controls to ensure that digitization truly promotes accountability and public trust. For regulators, such as the OJK and IDX, the results of this study can provide a basis for strengthening digital-based CSR reporting policies in accordance with the 2021 GRI Standards, and improving technology-based audit and supervision systems to ensure credibility and consistency in the information disclosed by companies. For academics and future researchers, it is recommended to expand this research by adding other variables such as company reputation, stakeholder pressure, or digital innovation, and broaden the scope of the sector and research period to make the results more comprehensive.

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Appendix 1. Digitalization Index Score

1	2	3	4
Digital technology applications	Data, digital, digitization	Data management, data mining, data network, data platform, data center, data science, digital control, digital technology, digital communication, digital network, digital intelligence, digital terminal, digital marketing, digitalization	Data management, data mining, data network, data platform, data center, data science, digital control, digital technology, digital communication, digital network, digital intelligence, digital terminal, digital marketing, digitalization, big data, cloud computing, cloud IT, cloud ecology, cloud services, cloud platform, block chain, Internet of Things, machine learning
Internet business model	Internet, e-commerce	Mobile Internet, industrial Internet, industrial Internet, Internet solutions, Internet technology, Internet thinking, Internet action, Internet business, Internet mobile, Internet application, Internet marketing, Internet strategy, Internet platform, Internet model, Internet business model, Internet ecology, e-commerce, e-commerce	Mobile Internet, industrial Internet, industrial Internet, Internet solutions, Internet technology, Internet thinking, Internet action, Internet business, Internet mobile, Internet application, Internet marketing, Internet strategy, Internet platform, Internet model, Internet business model, Internet ecology, e-commerce, e-commerce, Internet, Internet, offline, online to offline, online and offline, O2O, B2B, C2C, B2C, C2B
Smart manufacturing	Intelligent, intelligent, automatic, CNC, integrated, integrated	artificial intelligence, high-end intelligence, industrial intelligence, mobile intelligence, intelligent control, intelligent terminal, intelligent mobile, intelligent management, intelligent factory, intelligent logistics, intelligent manufacturing, intelligent storage, intelligent technology, intelligent equipment, intelligent production, intelligent network, intelligent systems, intelligent, automatic control, automatic monitoring, automatic monitoring, automatic detection, automatic production, CNC, integration, integrated, integrated solutions, integrated control, integrated systems	artificial intelligence, high-end intelligence, industrial intelligence, mobile intelligence, intelligent control, intelligent terminal, intelligent mobile, intelligent management, intelligent factory, intelligent logistics, intelligent manufacturing, intelligent storage, intelligent technology, intelligent equipment, intelligent production, intelligent network, intelligent system, intelligent, automatic control, automatic monitoring, automatic monitoring, automatic detection, automatic production, CNC, integration, integrated, integrated solutions, integrated control, integrated systems, industrial cloud, future factory, intelligent fault diagnosis, life cycle management, manufacturing execution system, virtualization, virtual manufacturing

Modern information system	Information, informatization, networking	Information sharing, information management, information integration, information software, information system, information network, information terminal, information center, informatization, networking	Information sharing, information management, information integration, information software, information system, information network, information terminal, information center, informatization, networking, industrial information, industrial communication
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Source: [Broccardo et al. \(2023\)](#) dan [Zeng et al. \(2022\)](#)