

# Technology-Driven Governance: Advancing CSR Practices in LQ45 Companies <sup>†</sup>

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<sup>†</sup> Presented at the 7th International Global Conference Series on ICT Integration in Technical Education & Smart Society, Aizuwakamatsu City, Japan, 20–26 January 2025.

## Abstract

This study explores the influence of governance structures board diversity, public shareholding, and managerial ownership on CSR disclosure among LQ45 companies in Indonesia during 2021–2023. Using panel data regression analysis, the research identifies significant relationships between these governance variables and CSR practices. The study highlights the critical role of board diversity in fostering inclusivity and aligning corporate strategies with societal expectations, supported by stakeholder and legitimacy theories. Public shareholding and managerial ownership also play pivotal roles in enhancing transparency and aligning managerial incentives with organizational goals. The integration of advanced technologies, such as blockchain and AI, is discussed as a means to improve CSR practices through enhanced transparency and efficiency. These findings provide actionable insights for policymakers, corporate leaders, and investors, emphasizing the need for inclusive governance and technological innovation to advance sustainable business practices.

**Keywords:** corporate social responsibility (CSR); governance structure; board diversity; public shareholding; managerial ownership; LQ45 companies; stakeholder theory; legitimacy theory; blockchain; artificial intelligence (AI)



Academic Editors: Debopriyo Roy,  
George F. Fragulis and Peter Ilic

Published: 24 September 2025

**Citation:** Riany, M.; Amelia, S.; Irmawati; Hasani, S.A. Technology-Driven Governance: Advancing CSR Practices in LQ45 Companies. *Eng. Proc.* **2025**, *107*, 105. <https://doi.org/10.3390/engproc2025107105>

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## 1. Introduction

Corporate social responsibility (CSR) has emerged as a cornerstone in modern business practices, reflecting a company's commitment to creating a positive societal and environmental impact beyond its financial objectives [1,2]. Rooted in principles of sustainability, CSR encompasses initiatives such as environmental conservation, ethical labor practices, and active community engagement [3,4]. The growing global emphasis on addressing climate change, social inequality, and ethical governance has elevated CSR from a moral obligation to a strategic imperative for businesses aiming to achieve long-term resilience, sustainability, and competitive differentiation [5]. Additionally, theories such as stakeholder theory support this perspective, highlighting the necessity for businesses to balance the interests of all stakeholders, including investors, employees, customers, and society at large, as a pathway to achieving sustainable success. This foundation paves the way for understanding CSR as both a framework for corporate responsibility and a critical factor influencing business performance.

The role of CSR extends beyond enhancing a company's reputation; it fosters trust among stakeholders, including investors, customers, and the wider community [6]. Trust,

as emphasized in stakeholder theory, serves as the foundation for sustainable relationships between a company and its stakeholders, ensuring long-term organizational success [7]. A robust CSR strategy not only aligns a company's operations with societal expectations but also mitigates potential reputational and operational risks while creating opportunities for innovation and market differentiation [8]. In Indonesia, CSR has gained significant traction, with companies adhering to regulations such as Law Number 40 of 2007 on Limited Liability Companies. This law mandates CSR activities for businesses involved in natural resource exploitation, reflecting elements of legitimacy theory, which highlights the importance of aligning corporate actions with societal values to maintain organizational legitimacy. This legal framework, therefore, underscores the critical role of CSR in fostering sustainable corporate practices and aligning them with both local regulations and global expectations, paving the way for enhanced corporate accountability and societal trust [9].

This study focuses on companies listed in the LQ45 index on the Indonesia Stock Exchange (IDX) during 2021–2023, which are recognized as the top-performing companies in terms of liquidity and market capitalization [10]. The LQ45 index serves as an ideal sample for examining CSR dynamics in Indonesia, given these companies' significant market presence and influence on corporate governance trends [11]. These firms are subject to heightened scrutiny from stakeholders, driven by growing awareness of corporate accountability and environmental sustainability. Consequently, they are expected to adopt transparent and comprehensive CSR reporting practices. However, as legitimacy theory suggests, aligning corporate actions with societal expectations remains a challenge, as disparities persist in the implementation and disclosure of CSR practices [12]. These inconsistencies underscore the importance of examining factors such as board diversity, public shareholding, and managerial ownership to better understand their impact on CSR transparency and effectiveness.

Several challenges impede the consistent implementation of CSR practices among LQ45 companies [10]. These challenges include varying levels of board diversity, differences in public shareholding structures, and the extent of managerial ownership, each of which plays a significant role in shaping corporate decision-making processes. According to agency theory, such variations can result in conflicts of interest between principals and agents, thereby affecting a company's commitment to CSR activities and the transparency of its reporting [13]. Additionally, legitimacy theory suggests that inconsistencies in aligning these factors with societal expectations can undermine public trust and stakeholder confidence [14]. Furthermore, the limited integration of advanced analytical tools and inconsistent adherence to global reporting standards exacerbate these challenges by restricting the ability of companies to effectively measure, manage, and communicate their CSR initiatives [15]. This highlights the critical need for deeper investigations into these variables to identify pathways for improving CSR practices and aligning them with global sustainability goals.

Technological advancements, particularly in data analysis, offer promising solutions to address these issues by enhancing the precision and efficiency of research methodologies [16,17]. Tools like EViews and Stata are indispensable for conducting panel data regression analysis, as they enable researchers to investigate complex relationships between variables such as board diversity, public shareholding, managerial ownership, and CSR disclosure with greater accuracy [18]. These technologies align with the principles of decision-usefulness theory, which emphasizes the importance of providing reliable and relevant information for stakeholders to facilitate informed decision-making [18]. Furthermore, integrating such tools not only ensures robustness in statistical analysis but also supports the alignment of corporate strategies with global sustainability objectives. By leveraging these advanced analytical capabilities, researchers can uncover actionable insights that

bridge gaps in CSR practices, informing policies and strategies that resonate with both local and international standards.

Previous studies have explored the impact of board diversity, public shareholding, and managerial ownership on CSR disclosure, but their findings remain inconsistent. For instance, while some studies suggest that gender diversity positively influences CSR by bringing diverse perspectives to decision-making processes, others find no significant effect, potentially due to varying cultural and organizational dynamics. Similarly, research on public shareholding highlights its potential to promote transparency and societal alignment, yet mixed results persist, as external shareholders may lack the power to enforce CSR priorities [19]. Managerial ownership, on the other hand, is often linked to increased CSR commitment due to aligned interests, though some studies argue that excessive managerial ownership can lead to self-serving behavior at the expense of broader societal goals [20]. These contradictions necessitate further investigation using theoretical frameworks such as agency theory and legitimacy theory. Agency theory highlights the potential for conflict between shareholders and managers, emphasizing the need for mechanisms to align their interests for effective CSR implementation [21]. Meanwhile, legitimacy theory underscores the necessity for corporate activities to align with societal values, positing that misalignment can erode stakeholder trust and corporate legitimacy. By reconciling these theoretical insights with empirical findings, this study seeks to clarify the intricate relationships among these variables and their influence on CSR disclosure.

The research gap lies in the contextual application of these variables within the Indonesian corporate landscape, particularly among LQ45 companies. While global studies provide valuable insights, they often fail to account for the unique interplay of cultural, regulatory, and economic factors that influence CSR practices in Indonesia [22]. For example, cultural norms regarding gender roles may impact the effectiveness of board diversity in shaping CSR strategies, while Indonesia's regulatory framework places distinct obligations on corporations that differ from global practices. Additionally, economic factors, such as market volatility and investor behavior, introduce complexities that are seldom addressed in international studies [23]. This study seeks to bridge these gaps by examining the intricate relationships between board diversity, public shareholding, and managerial ownership, considering the specific socio-economic and regulatory environment of Indonesia. By achieving this, it aims to provide a nuanced understanding of how these variables collectively influence CSR disclosure within this unique context.

The novelty of this research lies in its comprehensive approach to examining the three variables of board diversity, public shareholding, and managerial ownership simultaneously and their collective impact on CSR disclosure. By leveraging recent data and employing advanced statistical analysis, this study not only uncovers nuanced relationships between these variables but also situates its findings within the specific cultural, regulatory, and economic context of Indonesia. This multidimensional perspective is grounded in legitimacy theory, which underscores the importance of aligning corporate practices with societal expectations to maintain trust and organizational legitimacy [24]. Furthermore, agency theory provides a framework to explore how these variables mediate the alignment of interests between stakeholders and management, thereby enhancing CSR disclosure. By addressing these theoretical and contextual dimensions, this research contributes fresh insights into the dynamics of CSR practices, offering valuable implications for corporate governance and sustainability in Indonesia.

This study is both important and urgent, given the growing emphasis on sustainable development and corporate accountability as key drivers of long-term organizational success. As global and local stakeholders, including investors, regulators, and consumers, increasingly demand greater transparency and responsibility, companies face mounting

pressure to align their operations with societal and environmental values. Theoretical foundations such as legitimacy theory and stakeholder theory highlight the critical need for corporations to meet these expectations to maintain trust, legitimacy, and competitive advantage [25–27]. By addressing these imperatives, this study not only contributes to academic discourse by exploring the mechanisms underlying effective CSR practices but also offers actionable insights for policymakers, corporate leaders, and investors. It serves as a critical tool for enhancing governance frameworks and fostering sustainable corporate behavior, particularly within the Indonesian context where regulatory and cultural dynamics add layers of complexity and opportunity.

## 2. Materials and Methods

### 2.1. Research Design and Data Sources

This study employs a quantitative associative approach to explore the relationships between board diversity, public shareholding, managerial ownership, and CSR disclosure. Secondary data were collected from financial statements and sustainability reports of LQ45 companies listed on the Indonesia Stock Exchange (IDX) from 2021 to 2023. The study ensures data completeness by cross-referencing information from the official IDX website and other publicly accessible corporate disclosures. Purposive sampling criteria included the following: (a) companies consistently listed in the LQ45 index throughout the study period, (b) availability of annual and sustainability reports for 2021–2023, (c) inclusion of detailed disclosures on board diversity, shareholding structures, and managerial ownership.

### 2.2. Variables and Measurement

- **CSR Disclosure:** This was measured using the Global Reporting Initiative (GRI) standards. A binary scoring system assigns 1 for disclosed indicators and 0 for undisclosed ones, aggregated into a composite index.
- **Board Diversity:** This was operationalized as the proportion of female directors on the board.
- **Public Shareholding:** This was measured as the percentage of shares held by the public.
- **Managerial Ownership:** This was defined as the percentage of shares held by management.

Panel data regression analysis was employed, integrating cross-sectional and time-series data to evaluate the relationships between the variables. The following model was used: company index, time index (year), coefficients, and error term.

### 2.3. Assumptions Testing

To ensure the validity of the regression model, the following diagnostic tests were conducted: Normality: Shapiro–Wilk and Kolmogorov–Smirnov tests confirmed the normal distribution of residuals. Multicollinearity: Variance Inflation Factor (VIF) values were below 10, indicating no multicollinearity issues. Heteroscedasticity: the Breusch–Pagan test results indicated homoscedasticity. Autocorrelation: the Durbin–Watson statistic fell within the acceptable range of 1.5 to 2.5.

This section provides a detailed explanation of the research design, data sources, sample selection criteria, and analytical methods used to investigate the influence of board diversity, public shareholding, and managerial ownership on CSR disclosure among LQ45 companies in Indonesia during 2021–2023. This approach integrates theoretical frameworks such as agency theory, which highlights the need to align managerial actions with shareholder objectives to mitigate conflicts of interest, and stakeholder theory, which underscores the importance of addressing the needs and expectations of diverse stakeholders to ensure long-term organizational legitimacy and accountability [28]. By leveraging these theoretical perspectives, the study aims to uncover how governance structures influence

CSR transparency in a way that resonates with societal and investor priorities [29]. This study employs a quantitative associative approach to explore the relationships between the independent variables (board diversity, public shareholding, and managerial ownership) and the dependent variable (CSR disclosure). The quantitative method allows for the systematic measurement of these variables and the application of statistical techniques to test hypotheses grounded in established theoretical frameworks [30]. Agency theory, which focuses on the alignment of interests between principals and agents to mitigate conflicts and enhance organizational efficiency, provides a key lens for this study. Additionally, legitimacy theory underscores the necessity of aligning corporate actions with societal norms and expectations to secure organizational legitimacy and stakeholder trust [31]. Together, these theories offer a robust foundation for investigating how governance structures influence the transparency and effectiveness of CSR practices in a way that meets both organizational objectives and societal demands [32].

The study utilizes secondary data obtained from publicly available financial statements and sustainability reports of companies listed in the LQ45 index on the Indonesia Stock Exchange (IDX) during the 2021–2023 period. These reports serve as valuable resources, providing detailed insights into the companies' governance structures, shareholding patterns, and CSR activities. By leveraging the Global Reporting Initiative (GRI) framework, these data sources enable the systematic evaluation of CSR disclosure practices [33]. Furthermore, additional data were sourced from the official IDX website and other publicly accessible corporate disclosures to ensure data completeness, reliability, and adherence to transparency standards, aligning with the principles of decision-usefulness theory, which emphasizes the importance of providing relevant and accurate information to stakeholders for informed decision-making [34].

The population of this study comprises all companies listed in the LQ45 index during the 2021–2023 period. The LQ45 index was chosen because it represents top-performing companies with high market liquidity and capitalization, which often exhibit advanced governance structures and active CSR practices [35]. This aligns with legitimacy theory, which emphasizes the role of prominent companies in maintaining societal approval by aligning their actions with stakeholder expectations. Purposive sampling was employed to ensure the selection of companies that met specific criteria: consistent inclusion in the LQ45 index throughout the study period, publication of annual and sustainability reports consecutively from 2021 to 2023, and the presence of detailed disclosures on board diversity, shareholding structures, and managerial ownership [36–38]. These criteria ensured a representative and reliable sample. Ultimately, 30 companies were identified, providing a robust dataset for analyzing the interplay between governance structures and CSR disclosure practices.

CSR disclosure was measured using the Global Reporting Initiative (GRI) standards, a globally recognized framework that ensures consistency and comparability in sustainability reporting [39]. A binary scoring system was adopted, where a score of 1 was assigned for disclosed indicators and 0 for undisclosed ones [40]. These scores were then aggregated to create a composite index representing each company's CSR disclosure level. Board diversity was operationalized as the proportion of female directors on the board, reflecting the emphasis of stakeholder theory on incorporating diverse perspectives to improve decision-making processes and corporate governance. Public shareholding was measured as the percentage of shares held by the public, indicating the extent of external ownership and its potential influence on accountability, as supported by legitimacy theory, which highlights the role of public ownership in aligning corporate actions with societal norms [41]. Managerial ownership, defined as the percentage of shares held by the management team, was included to assess the alignment of managerial incentives with shareholder and stakeholder

interests, as emphasized in agency theory [42]. Together, these metrics provide a robust framework for analyzing the governance factors influencing CSR practices.

Panel data regression analysis was employed to examine the intricate relationships between the variables, integrating cross-sectional and time-series data to provide a comprehensive understanding of the influence of board diversity, public shareholding, and managerial ownership on CSR disclosure over the three-year period [43]. This approach allows for controlling both individual heterogeneity and temporal dynamics, ensuring robust and reliable findings [44]. The analysis was conducted using advanced statistical software, including EViews and Stata, both of which are well-suited for panel data analysis due to their capabilities in handling large datasets and applying diagnostic tests such as fixed effects, random effects, and pooled OLS models. Decision-usefulness theory guided this analysis, emphasizing the role of providing stakeholders with relevant, timely, and reliable information to enhance transparency and accountability in CSR disclosure [45]. This theoretical underpinning aligns with the broader objectives of the study to ensure that corporate governance practices meet both societal and investor expectations.

Data from sustainability reports were coded according to the Global Reporting Initiative (GRI) standards, ensuring alignment with internationally recognized benchmarks for sustainability reporting [46]. A binary scoring system was implemented, assigning a score of 1 for disclosed indicators and 0 for undisclosed ones, which allowed for the creation of a composite index reflecting the level of CSR disclosure for each company [47]. Descriptive statistics were calculated to summarize and understand the distribution and central tendencies of the variables, providing foundational insights into the dataset. Following this, diagnostic tests such as the Hausman test were conducted to determine the most appropriate panel data regression model (fixed effects, random effects, or pooled OLS), ensuring methodological rigor and robustness [48]. Hypotheses were tested at a 5% significance level, leveraging the principles of decision-usefulness theory to evaluate the relevance and reliability of the disclosed information in meeting stakeholder needs and enhancing transparency. This methodological approach not only facilitates a detailed exploration of governance factors influencing CSR but also aligns with the study's commitment to rigorous and theory-driven analysis.

This study utilized publicly available data to ensure adherence to ethical research practices and transparency in methodology. By relying exclusively on secondary data sources, including publicly accessible financial statements and sustainability reports, the study avoided the use of confidential or sensitive information [49]. Proper citation of all data sources further reinforced the credibility and reproducibility of the research. Advanced statistical tools such as EViews 12 were employed to conduct rigorous panel data analysis, enabling precise modeling and reliable interpretation of results. This methodological rigor aligns with the principles of accountability and decision-usefulness theory, which advocate for the provision of accurate and relevant information to stakeholders to inform decision-making processes. Ultimately, this approach supports the study's goal of offering actionable insights for enhancing CSR practices in alignment with both theoretical and practical expectations.

### 3. Result

The descriptive statistics provide an overview of the key variables used in the study, as shown in Table 1. The average level of CSR disclosure among the sampled companies is 78%, with a standard deviation of 15%, indicating that most companies disclose a significant portion of their CSR activities, ranging from 55% to 100%. Board diversity, measured by the proportion of female directors, averages 18.5%, with values ranging from 5% to 35%, highlighting notable variability in gender representation across corporate boards. Public

shareholding averages 45.7%, with a standard deviation of 12.4%, showing that external ownership ranges between 20% and 70% among the companies. Managerial ownership, which represents the percentage of shares owned by management, averages 12.2%, with a range of 3% to 25% and a standard deviation of 5.8%, reflecting differences in ownership structures. These statistics provide critical insights into the distribution of governance and CSR variables, offering context for the subsequent regression analysis. The panel data regression results are summarized in the table below.

**Table 1.** Descriptive statistics.

| Variable                 | Mean | Std. Dev. | Min  | Max  |
|--------------------------|------|-----------|------|------|
| CSR Disclosure           | 0.78 | 0.15      | 0.55 | 1.00 |
| Board Diversity (%)      | 18.5 | 7.6       | 5.0  | 35.0 |
| Public Shareholding (%)  | 45.7 | 12.4      | 20.0 | 70.0 |
| Managerial Ownership (%) | 12.2 | 5.8       | 3.0  | 25.0 |

The diagnostic tests confirmed the robustness of the regression model. First, normality was verified, as residuals followed a normal distribution ( $p > 0.05$ ). Multicollinearity was not a concern, with Variance Inflation Factor (VIF) values ranging between 1.25 and 2.10. Homoscedasticity was confirmed using the Breusch–Pagan test ( $p > 0.05$ ), ensuring consistent variance of errors. Lastly, the Durbin–Watson statistic of 2.03 indicated no autocorrelation in the residuals, validating the independence of errors. The interpretation of the regression results highlights the significant relationships between the governance variables and CSR disclosure as presented in Table 2. A positive and significant relationship ( $\beta = 0.245$ ,  $p = 0.001$ ) was found between board diversity and CSR disclosure, indicating that higher female representation on boards enhances CSR practices. This finding supports stakeholder theory, emphasizing the role of diversity in fostering inclusivity and accountability. Public shareholding also showed a positive effect ( $\beta = 0.136$ ,  $p = 0.010$ ), suggesting that external monitoring by public shareholders improves transparency, consistent with legitimacy theory. In contrast, managerial ownership demonstrated a negative relationship with CSR disclosure ( $\beta = -0.089$ ,  $p = 0.010$ ), indicating potential agency conflicts where excessive managerial control may hinder broader CSR objectives.

**Table 2.** Regression analysis.

| Variable             | Coefficient | Std. Error | t-Statistic | p-Value   |
|----------------------|-------------|------------|-------------|-----------|
| Board Diversity      | 0.245       | 0.071      | 3.45        | 0.001 **  |
| Public Shareholding  | 0.136       | 0.052      | 2.62        | 0.010 **  |
| Managerial Ownership | −0.089      | 0.034      | −2.62       | 0.010 **  |
| Constant             | 0.556       | 0.112      | 4.96        | 0.000 *** |

The asterisks (\*\*, \*\*) that appear in the regression table are conventions of the statistical software to indicate lev-els of significance (1%, 5%). Since they are merely technical markers generated by the software, a more detailed explanation is not provided in the article. The interpretation of variable significance is still based on the reported  $p$ -values.

The findings of this study provide a comprehensive understanding of how governance structures influence CSR disclosure among LQ45 companies in Indonesia from 2021 to 2023. Through panel data regression analysis on Table 2, the study reveals significant relationships between board diversity, public shareholding, managerial ownership, and CSR disclosure. Board diversity, particularly the presence of female directors on corporate boards, positively impacts CSR disclosure. This result aligns with stakeholder theory, which emphasizes the inclusion of diverse perspectives in enhancing corporate accountability and decision-making processes. Female representation on boards fosters inclusivity and

ensures that corporate actions address both societal and environmental responsibilities. This interplay demonstrates how diverse governance can align corporate strategies with broader sustainability goals, enhancing organizational legitimacy as posited by legitimacy theory.

Public shareholding also plays a pivotal role in promoting transparency and accountability in CSR disclosure. Public shareholders act as external monitors, compelling companies to align their operations with societal norms and expectations. This finding is strongly supported by legitimacy theory, which underscores the necessity for corporate actions to resonate with societal values to maintain trust and credibility. However, the moderate effect observed suggests that additional mechanisms, such as enhanced regulatory oversight and active stakeholder engagement, may be needed to amplify this influence. Managerial ownership demonstrates a dual effect on CSR disclosure. On the one hand, it aligns managerial incentives with organizational goals, reinforcing ethical practices and long-term sustainability. This outcome is well-explained by agency theory, which highlights the alignment of interests between managers and shareholders as a pathway to effective governance. On the other hand, excessive control by managerial ownership may lead to self-serving behavior, potentially undermining broader corporate and societal objectives. Balancing this dynamic is critical to ensuring that managerial ownership fosters accountability and responsibility.

The integration of advanced technologies further enhances the analysis and practical implications of these findings. Blockchain technology ensures transparency, traceability, and reliability in CSR reporting, addressing stakeholder concerns about data authenticity and fostering trust. Artificial intelligence (AI) automates the assessment and monitoring of CSR reports, improving efficiency and ensuring compliance with frameworks like the Global Reporting Initiative (GRI). Visualization tools such as Tableau and Power BI enable dynamic presentation of CSR data, facilitating deeper stakeholder engagement and more informed decision-making processes. These technologies align with decision-usefulness theory by providing stakeholders with timely, accurate, and relevant information, thereby enhancing corporate accountability and governance.

These findings have significant implications for various stakeholders. For policy-makers, the results provide a basis for developing regulations that promote inclusive governance and transparent CSR practices. Policies could incentivize board diversity and robust public shareholding structures to enhance corporate accountability. Corporate leaders are encouraged to adopt diverse board compositions and leverage technological solutions to improve CSR reporting, ensuring that their strategies align with societal and environmental objectives. For investors, the insights offer a framework for evaluating companies based on governance structures and CSR disclosures, enabling more informed and responsible investment decisions. These results not only contribute to the theoretical understanding of governance and CSR dynamics but also highlight practical strategies for fostering sustainable corporate practices. The findings reinforce the importance of governance structures and technological innovations as synergistic drivers of CSR disclosure, paving the way for future research to explore broader applications across industries and contexts.

#### 4. Discussion

The findings of this study highlight the intricate relationship between governance structures and CSR disclosure among LQ45 companies in Indonesia during 2021–2023. Board diversity, particularly the presence of female directors, emerged as a significant factor positively influencing CSR disclosure. This finding not only aligns with stakeholder theory, which underscores the importance of diverse perspectives in fostering accountability and inclusivity, but also supports legitimacy theory by demonstrating how diverse board compositions enhance societal trust and organizational legitimacy. Public shareholding

similarly reinforces transparency and accountability, as public shareholders act as external monitors, compelling companies to align their practices with societal expectations [50]. Managerial ownership, while effective in aligning incentives and ensuring long-term sustainability as posited by agency theory, requires careful balancing to avoid the risks of excessive control that may undermine broader corporate objectives. Together, these governance mechanisms shape a strategic foundation for improving CSR practices and meeting both organizational and societal goals.

The study's findings have profound implications for corporate governance and CSR practices. Policymakers can leverage these insights to craft regulations that enhance board diversity and empower public shareholders to act as effective external monitors, fostering alignment with societal values, as highlighted by legitimacy theory [51]. For corporate leaders, the results emphasize the strategic importance of integrating diverse leadership, which stakeholder theory suggests can improve inclusivity and decision-making effectiveness. Aligning managerial incentives with organizational goals ensures ethical and transparent practices, supporting agency theory by mitigating conflicts of interest. Investors are provided with a robust framework for assessing governance and CSR disclosures, enabling more informed and socially responsible investment decisions. These collective impacts contribute to advancing the discourse on sustainable corporate practices and governance, bridging theoretical frameworks with practical applications.

A key strength of this research is its comprehensive analysis of governance variables and their collective impact on CSR disclosure, supported by robust statistical tools such as EViews and Stata [52]. The reliance on panel data regression offers a nuanced understanding of both temporal and cross-sectional dynamics, ensuring robust and reliable findings. This methodological rigor aligns with decision-usefulness theory, which advocates for the delivery of timely and actionable information to stakeholders, enhancing the study's practical relevance. However, the study's focus on LQ45 companies, while providing insights into leading firms in Indonesia, may limit the generalizability of its findings to smaller or less prominent organizations. Furthermore, the use of secondary data, while efficient for broad analyses, restricts the depth of insight into qualitative dynamics, such as stakeholder perceptions or internal governance processes [53]. Future research could address these limitations by incorporating a mixed-methods approach, combining quantitative analysis with qualitative interviews or case studies to provide a richer and more holistic understanding of governance and CSR practices.

The integration of advanced technologies offers transformative opportunities to address challenges in CSR reporting and governance [54]. Blockchain technology ensures data immutability, transparency, and traceability, fostering trust among stakeholders by eliminating concerns over data authenticity [55]. This capability aligns with legitimacy theory by reinforcing organizational credibility through transparent disclosures. Artificial intelligence (AI) further enhances CSR practices by automating the assessment and analysis of reports, enabling real-time monitoring and ensuring adherence to global frameworks such as the Global Reporting Initiative (GRI). These features reflect decision-usefulness theory, as AI delivers timely and actionable insights that empower stakeholders to make informed decisions. Visualization tools like Tableau and Power BI complement these technologies by presenting CSR data dynamically, enhancing stakeholder engagement and comprehension. Together, these advancements bridge gaps in transparency, accountability, and efficiency, aligning corporate practices with societal and regulatory expectations.

This study's findings reinforce and extend theoretical frameworks such as stakeholder theory, legitimacy theory, and agency theory. Stakeholder theory highlights the critical role of board diversity in incorporating a wide range of perspectives, ultimately fostering greater inclusivity, transparency, and corporate accountability [56]. By aligning diverse

board compositions with organizational decision-making, companies can better address stakeholder needs and expectations. Legitimacy theory underscores how public shareholding supports the alignment of corporate actions with societal values, maintaining trust and credibility through transparent and ethical practices [57]. Additionally, agency theory provides a lens to analyze how managerial ownership aligns the interests of managers and shareholders, promoting long-term sustainability while cautioning against the risks of excessive control that may compromise organizational goals. By connecting these theories with empirical findings, this research not only deepens the understanding of governance structures and CSR practices but also bridges theoretical concepts with practical governance applications, paving the way for more sustainable and accountable corporate frameworks.

The novelty of this study lies in its simultaneous analysis of board diversity, public shareholding, and managerial ownership as key determinants of CSR disclosure, offering a holistic perspective that bridges governance and sustainability. By situating its findings within the unique cultural, regulatory, and economic landscape of Indonesia, the study not only addresses critical gaps in the existing literature but also contextualizes global governance principles to a regional setting. The integration of advanced technological solutions, such as blockchain for transparency and AI for real-time analysis, underscores the study's forward-looking dimension, highlighting its practical implications for contemporary corporate governance. These innovative approaches align with decision-usefulness theory, ensuring stakeholders are equipped with accurate and actionable insights. Collectively, these contributions elevate the academic discourse on CSR dynamics while offering actionable strategies for organizations striving to align governance practices with sustainability goals.

## 5. Conclusions

This study has provided critical insights into how governance structures influence CSR disclosure among LQ45 companies in Indonesia during 2021–2023. By examining the roles of board diversity, public shareholding, and managerial ownership, this research has demonstrated their collective impact on enhancing transparency, accountability, and organizational legitimacy. The findings show that board diversity significantly improves CSR disclosure by fostering inclusivity and aligning corporate strategies with societal expectations. Public shareholding contributes to transparency and alignment with societal norms, while managerial ownership aligns incentives with long-term sustainability goals. However, the findings also highlight the need for a balanced approach to prevent potential conflicts of interest. These insights are supported by stakeholder theory, legitimacy theory, and agency theory, which provide a robust theoretical foundation for understanding the dynamics of governance and CSR. The integration of advanced technologies, including blockchain and AI, offers transformative opportunities to further enhance CSR practices by improving transparency, real-time monitoring, and stakeholder engagement. These technologies ensure that CSR disclosures are both reliable and actionable, aligning corporate actions with global sustainability objectives. The findings of this study have significant implications for policymakers, corporate leaders, and investors, emphasizing the importance of inclusive governance, ethical practices, and technological innovation in fostering sustainable business practices.

## 6. Limitations, Future Research, and Implication

Despite its contributions, this study has several limitations. The focus on LQ45 companies, while providing insights into leading firms in Indonesia, limits the generalizability of the findings to smaller organizations or other industries. Additionally, the reliance on secondary data restricts the exploration of qualitative aspects, such as stakeholder percep-

tions or internal governance dynamics. Future research could address these limitations by incorporating mixed-methods approaches, including qualitative interviews or case studies, to provide a more comprehensive understanding of governance and CSR practices.

Future research should also explore the integration of emerging technologies in CSR reporting, such as machine learning for predictive analytics and blockchain for enhanced transparency. Expanding the scope to include a comparative analysis of different regions or industries could further enrich the understanding of governance and CSR dynamics. The implications of this study are significant for various stakeholders. Policymakers can use the findings to develop regulations that promote board diversity and enhance public shareholding structures. Corporate leaders are encouraged to leverage diverse leadership and integrate advanced technologies to improve CSR reporting and alignment with global sustainability goals. Investors can use these insights to evaluate companies based on governance and CSR metrics, enabling informed and socially responsible investment decisions. By addressing these areas, this study contributes to advancing sustainable corporate governance practices that align with societal and environmental imperatives.

**Author Contributions:** M.R. conceptualized the research idea, developed the study framework, and designed the methodological approach, S.A. conducted the literature review and synthesized relevant prior studies to support the research background, I. and S.A.H. collect the data, performed data analysis, and provided interpretation of the findings. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** The data supporting the findings of this study are secondary data obtained from the Indonesia Stock Exchange and from the official websites of the sampled companies, all of which are publicly available.

**Conflicts of Interest:** The authors declare no conflict of interest.

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