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BOARD CHARACTERISTICS AND CSR DISCLOSURE ON SOCIAL MEDIA X: EVIDENCE FROM INDONESIAN LISTED COMPANIES

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ABSTRACT

Introduction*: CSR disclosures often emphasize social and environmental achievements while ignoring negative aspects that harm the environment, which can lead to public skepticism. Companies can utilize CSR disclosures on social media to increase trust in sustainability claims. This study aims to determine the effect of board characteristics, namely board independence, female directors, and board education level, on CSR disclosure on social media X.*

Methods: *This study employs multiple regression analysis grounded in stakeholder theory, using 5,852 tweets from X (Twitter) accounts of companies in the basic materials, industrials, consumer non-cyclicals, consumer cyclicals, healthcare, and technology sectors listed on the Indonesia Stock Exchange in 2023. This study analyzes CSR disclosure on social media X as the dependent variable with board independence, the presence of female directors, and the education level of the board of directors as independent variables.*

Results: *The multiple regression results show that the education level of the board of directors has a positive effect on CSR disclosure on social media. However, board independence and female directors have no effect on CSR disclosure on social media.*

Conclusion and suggestion: *These findings highlight the importance of the individual qualities of the board of directors in encouraging CSR transparency through social media. Companies should give greater consideration to the educational background of board members, as boards with higher educational attainment are more likely to recognize the importance of information disclosure and the strategic use of social media for stakeholder communication.*

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INTRODUCTION

Companies report Corporate Social Responsibility (CSR) as part of their strategy to manage public perception (Cho et al., 2024). CSR disclosures often emphasize achievements in social and environmental areas while neglecting environmentally harmful performance (Boiral, 2013; Chelli et al., 2019; Einwiller & Carroll, 2020), which can result in disclosures that do not reflect actual conditions because they are not intended to improve accountability (Jeriji & Louhichi, 2021). As a result, skepticism arises among stakeholders who doubt the truth of the company's sustainability claims (Elving, 2013; Lyon & Montgomery, 2015).

Skepticism can erode stakeholder trust in a company's commitment to social responsibility, prompting companies to be more transparent in their CSR disclosures. Companies can use social media as an additional channel to share CSR information, as disclosure through social media can increase transparency (Bonsón et al., 2012; X. Yang et al., 2021). More transparent communication about CSR initiatives will help build stakeholder trust in corporate commitments (H. Kim & Lee, 2018). Social media provides companies with the opportunity to convey information quickly and widely and opens up opportunities for direct interaction with stakeholders (Alexander & Gentry, 2014). Transparent CSR disclosure can help rebuild trust in social responsibility commitments amid skepticism. For example, companies use CSR disclosure on X extensively to connect with stakeholders and disseminate messages, including CSR-related content (Vitellaro et al., 2022). Companies can demonstrate that they have implemented CSR to minimize skepticism through more transparent disclosure on social media.

CSR disclosure on social media differs from CSR disclosure in company reports. CSR disclosure on social media is informal and not regulated, as it involves voluntary disclosure motivated by fulfilling stakeholder demands and reducing pressure from the social and economic environment (Ramananda & Atahau, 2020; Reilly & Larya, 2018). In contrast, CSR disclosure in reports is an obligation companies must fulfill and is more detailed and intensive, as it includes CSR activities over a specified period (Ramananda & Atahau, 2020). CSR disclosure in reports also follows standards in their preparation, such as the Global Reporting Initiative (GRI), the Sustainable Development Goals (SDGs), and the International Organization for Standardization (ISO), which are not mandatory but are often used as guidelines by companies in Indonesia (PwC, 2023).

Social media has become a source of information for stakeholders, especially the public, in obtaining information, including CSR. In addition to functioning as a corporate communication channel, social media allows stakeholders to express their views and expectations and serves as a source of information that is not controlled by the company (Dobija et al., 2023). Previous research shows that stock information published on social media by stock news accounts can influence abnormal returns (Syafitri & Suryani, 2022), indicating that information circulating on social media is noticed and utilized by the public. As the use of social media for information search increases, individuals are increasingly using it to obtain beneficial knowledge (Ahmed et al., 2019). Thus, social media has become an alternative source of information, allowing stakeholders to access it without relying solely on official company reports.

CSR disclosure is influenced by an effective board of directors (Alodat et al., 2023). The board of directors, as supervisors and advisors, plays a role in formulating strategic decisions together with management (Nahum & Carmeli, 2020). The board of directors influences corporate governance, operational efficiency, and CSR management by preventing companies from engaging in unethical practices (Ebaid, 2022). According to stakeholder theory, the board of directors represents various groups with an interest in the company when making decisions (Freeman, 1984). Effective board involvement ensures that the interests of all stakeholders are considered in the decision-making process, including transparency and accountability in CSR disclosure.

The board of directors plays a role in determining the strategic direction for the company (Bailey & Peck, 2013), including communication. As part of this role, the board of directors is responsible for formulating a communication strategy (Al Frijat et al., 2023; Gaa, 2009). The board of directors uses sustainability reports as a communication strategy to demonstrate the company’s commitment to CSR. In addition, companies can use social media to communicate with stakeholders about their sustainability commitments. Social media can be used as a CSR communication strategy to help companies attract stakeholders' attention and build their reputation (Rodríguez &

Chalmeta, 2020). The board of directors plays a role in ensuring that social media strategies and policies are implemented with transparency and openness of information and minimize the negative impact on the company's image (Chaher & Spellman, 2012).

Companies increasingly utilize social media as a strategic channel to communicate their CSR activities to a broader audience. Compared to traditional sustainability reports, social media enables faster, more interactive dissemination of CSR information, thereby enhancing stakeholder engagement (Benitez et al., 2020; Schmidt et al., 2020). As a result, social media can strengthen relationships with stakeholders and increase awareness and the impact of CSR initiatives.

The implementation of CSR disclosure is typically carried out by management (Gaa, 2009; Uzma, 2016), but decisions about CSR disclosure can be influenced by board characteristics. For example, the presence of female directors and board independence can increase CSR disclosure as part of corporate sustainability communication (Ebaid, 2022; Pucheta-Martínez & Gallego-Álvarez, 2019). The attitudes and sensitivity of female directors, who are more socially and environmentally oriented, as well as other characteristics of female leadership styles, can influence other directors to become more involved in social and environmental issues, thereby increasing CSR information reporting (Pucheta-Martínez & Gallego-Álvarez, 2019). Independent boards, especially those with diverse backgrounds or knowledge, can enhance board expertise, resolve conflicts between stakeholders, and persuade managers to become more involved in social and environmental practices (Haque & Ntim, 2018).

A number of studies have shown that board characteristics, such as board independence (Ebaid, 2022; Fahad & Rahman, 2020), gender diversity (Pucheta-Martínez & Gallego-Álvarez, 2019), and education level (Issa et al., 2022) influence CSR disclosure. Most of those studies focus on how board characteristics influence CSR disclosure in corporate sustainability reports. However, prior studies largely overlook CSR disclosure via social media, and ignore the emerging market context, such as Indonesia. Studies related to CSR disclosure in X often focus on identifying CSR communication on social media (Araujo & Kollat, 2018; Gómez-Carrasco et al., 2021; Rodríguez & Chalmeta, 2020; Vitellaro et al., 2022) or examining the existence of impression management on social media (Suryani & Fernando, 2023). Research conducted by Ayman et al. (2019) identified a relationship between board diversity, namely foreign and female directors, and the decision to disseminate general news and revenue via Twitter. The study shows that board diversity positively affects the use of X to disseminate revenue information.

Research on the influence of board characteristics on CSR disclosure on social media has so far only been conducted by Amin et al. (2021). The results of this study indicate that board independence, gender diversity, board tenure, and age play an important role in determining the level of corporate CSR disclosure on social media. However, this study has not discussed the cognitive aspect of board characteristics, namely the level of education. Directors with higher levels of education can bring more diverse perspectives to board discussions, thereby enhancing the board's understanding of corporate issues from broader, deeper perspectives (Issa et al., 2022). Therefore, boards with higher levels of education can provide better, and more innovative solutions for transparency in CSR disclosure. This study uses different measures to gauge the educational level of the board of directors. Thus, this study was conducted to fill this gap by examining the influence of board independence, women on the board of directors, and the board's educational level on CSR disclosure on social media, particularly on the X platform. This study contributes to the literature on the relationship between board characteristics and CSR disclosure. Unlike previous studies that tend to focus on sustainability reports, X is used as a medium for CSR disclosure.

LITERATURE REVIEW

Stakeholder theory emphasizes the importance of creating fair value for all stakeholders (Freeman et al., 2010). Companies must take stakeholders into account when making decisions (Phillips, 2003). The interests of shareholders should not be prioritized over other groups (Dmytriyev et al., 2021). Stakeholder responsibilities extend beyond shareholders to customers, employees, groups that do business with the company, and the community (Waddock & Smith, 2000). Stakeholders include any groups or individuals who can influence or be influenced by the achievement of the company's objectives (Freeman, 1984). This influence implies that companies have broader responsibilities than simply maximizing business profits (Issa et al., 2022).

Stakeholder theory argues that a company can be understood as a set of relationships among stakeholders (Dmytriyev et al., 2021). As decision-makers within the company, the board of directors plays a role in managing and balancing relationships among various stakeholder groups (Issa et al., 2022). The board of a company serves to reduce information asymmetry among stakeholders, enabling management to more easily create greater value for investors, customers, suppliers, communities, and employees (Freeman et al., 2010). One way companies address the diverse needs of stakeholders is by engaging in various types of CSR activities (J. Yang et al., 2020).

CSR disclosure can enhance a company's reputation by demonstrating its commitment to social responsibility and its transparency in communicating information, thereby building good relationships with stakeholders (Cho et al., 2012; Roberts, 1992). Company boards of directors use CSR as a tool to build and maintain positive relationships with stakeholders (Issa et al., 2022). The board of directors is involved in managing relationships with stakeholders and responding to public pressure by addressing stakeholder needs with transparency and accountability. The board of directors is responsible for the company's strategic policies (Nahum & Carmeli, 2020), including increasing transparency through voluntary CSR reporting (Pucheta-Martínez & Gallego-Álvarez, 2019).

CSR is used as a strategy to demonstrate to stakeholders the company's commitment to social and environmental issues. Companies report on CSR to convince stakeholders that these actions are a response to external demands (Reid et al., 2024) thus requiring transparency of information. Greater transparency about the company's actual performance can be achieved by using social networks as a CSR communication tool (Rodríguez & Chalmeta, 2020). Social media can be an effective platform for expanding the reach of CSR communication due to its ability to disseminate information quickly and in real-time. Social media is also used by companies because it can reach various stakeholders and increase information acquisition for the public (Araujo & Kollat, 2018; Vitellaro et al., 2022; Zhang et al., 2019). As part of a CSR communication strategy, companies use social media to convey positive messages about environmental and social values (Rodríguez & Chalmeta, 2020).

Social media increases the reach and frequency of messages to company stakeholders (J. Yang et al., 2020). Companies can take advantage of this increased reach by using social media for informational purposes in CSR disclosure (Rodríguez & Chalmeta, 2020). Previous research has shown that companies use social media to provide education, tips, and recommendations, as well as to provide additional information channels to respond to customer concerns (J. Yang et al., 2020). In addition, industries with high environmental and social impacts also communicate more on social media about their efforts to address these impacts (ElAlfy et al., 2020). Thus, companies can disclose CSR on social media for information transparency and to increase stakeholder trust in sustainability claims.

CSR disclosure is influenced by an effective board of directors (Alodat et al., 2023). This influence arises because the board of directors serves as a supervisor and advisor in formulating strategic decisions alongside management (Nahum & Carmeli, 2020). The board of directors influences corporate governance, operational efficiency, and CSR management by preventing companies from engaging in unethical practices (Ebaid, 2022). The composition of the board of directors is one factor that can influence the board's ability to address social and environmental issues (Minciullo, 2019). The board of directors can influence CSR disclosure based on its characteristics, such as board independence (Ebaid, 2022; Fahad & Rahman, 2020), gender diversity (Pucheta-Martínez & Gallego-Álvarez, 2019), and education level (Issa et al., 2022). Research on CSR disclosure has examined the influence of board characteristics (Amin et al., 2021). Collectively, these studies suggest that board characteristics influence CSR disclosure through governance and cognitive mechanisms. However, this research has not yet examined the cognitive aspect, namely, the level of education of the board of directors, on CSR disclosure on social media. The educational level of the board influences a company's CSR disclosure (Issa et al., 2022), but this relationship has not yet been investigated in the context of the wider dissemination of CSR information on social media.

This study applies different measurement methods for the educational level of the board of directors. Previous studies generally use the Blau index to measure educational diversity (Hartmann & Carmenate, 2021; Issa et al., 2022; Katmon et al., 2019; Peng et al., 2021), calculating the percentage of directors with master's and doctoral degrees (Jouber, 2021), and using dummy variables with a value of 1 for directors with postgraduate degrees (Tang et al., 2021). Unlike these methods, this study assigns different values to each level of higher education on the board, namely bachelor's, master's, and doctoral degrees. This measurement, with different values, was chosen because it better reflects differences in academic achievement across stages (Papadimitri et al., 2020). Using this measure, the study

seeks to fill a gap in the literature by examining the effect of board education level on CSR disclosure through social media.

Independent boards act as monitors and advisors to companies, especially when they play a key role or have important expertise (Masulis & Zhang, 2019). A large number of independent board members indicates a higher level of independence in the board structure (Arayssi et al., 2020) because they are not influenced by the company's internal interests (Gerged, 2021). Independent boards can be composed of external stakeholders and are expected to increase accountability, thereby encouraging better company performance (Freeman et al., 2010). Independent members bring an outside perspective to the board and monitor managers' CSR decision-making to ensure stakeholder considerations are taken into account (Islam et al., 2023).

Previous studies have shown a positive relationship between independent boards and the tendency to voluntarily disclose CSR information (Arayssi et al., 2020; Ebaid, 2022; Gerged, 2021). Independent boards are not influenced by internal company interests because they are not directly involved in operations. This allows the board to provide more objective oversight of management, which is expected to support the dissemination of environmental information as a mechanism to ensure a fair and impartial accountability process (Gerged, 2021). More independent directors on a company's board can increase information disclosure and improve transparency (Buertey & Pae, 2021). Transparency can also be achieved by using social media as a channel for information disclosure. Previous studies have shown a positive relationship between board independence and CSR disclosure on Twitter because social media is used to enhance a company's image and transparency (Amin et al., 2021). Thus, companies with independent boards have the potential to encourage the use of social media as a tool to disclose CSR information more transparently, leading to the following hypothesis:

H1: Board independence has a positive effect on CSR disclosure on social media.

Women can make meaningful contributions to boards of directors (Liao et al., 2015). Female directors ask more questions and bring more debate and discussion about issues to the boardroom, thereby influencing board member interactions (Wiersema & Mors, 2024). The contributions of female directors can lead to greater transparency among board members when making decisions. Women are also more sensitive to the harmful environmental effects of some business decisions (Burkhardt et al., 2020) because they have higher levels of empathy than men (Kamas & Preston, 2021). Women on the board contribute to the promotion of proactive environmental strategies (Xie et al., 2020) and positively influence CSR (Endrikat et al., 2021). Female directors are more community-oriented, thereby contributing to improvements in CSR through participatory leadership styles and by increasing awareness and involvement through social activities (Ciappei et al., 2023). Thus, the more ethical, socially and environmentally sensitive, and democratic nature of female directors may support policies to disclose CSR information (Pucheta-Martínez & Gallego-Álvarez, 2019).

Stakeholder theory posits that companies must ensure that every decision taken takes stakeholders into account (Freeman et al., 2010). Previous research shows that female directors increase the focus on social issues and secure the interests of not only shareholders but also stakeholders (Jouber, 2021). This suggests that the presence of women on the board of directors can strengthen stakeholder-oriented values and considerations in corporate decision-making (Wang et al., 2022). Women have a higher level of information disclosure and perception of the usefulness of social media than men, so women are more willing to disclose information because they view social media as a useful platform (Mouakket & Sun, 2020). This role in using social media shows the potential of women, especially as board members, to leverage it more effectively, as it helps convey company information, including CSR disclosures. In addition, non-executive female directors tend to promote CSR activities and disclosures through broad and easily accessible media, such as social media (Amin et al., 2021). Thus, the hypothesis is formulated as follows:

H2: Women on the board of directors have a positive effect on CSR disclosure on social media.

The educational level of the board of directors was selected as a research variable due to its relevance from a cognitive perspective. Education improves cognitive abilities (Ritchie & Tucker-Drob, 2018) through a learning process that aims to develop problem-solving skills through independent learning (Ashman & Conway, 1997; Lu & Xie, 2024). In this process, individuals not only receive information but also learn to process, evaluate, and apply it in a broader context. An individual's level of education influences cognitive function (Lövdén et al., 2020) because academic achievement can develop analytical thinking skills. Therefore, the higher education of board members not

only demonstrates their intellectual competence level but also reflects their capacity to handle the complexity of strategic issues. From a cognitive perspective, directors are able to solve strategic problems, deal with complexity and uncertainty by providing cognitive contributions, such as scanning, interpreting, and making decisions together with company managers (Merendino & Sarens, 2020; Rindova, 1999).

Based on this cognitive connection, education can play a role in shaping the foundation for strategic thinking and action for directors. Through education, directors acquire technical expertise and improve their cognitive skills (Bennouri et al., 2018). The educational process also shapes a person's values and cognitive abilities and increases their knowledge and expertise (Hartmann & Carmenate, 2021). In a managerial context, education is considered a form of human capital that reflects various managerial characteristics, such as cognitive and problem-solving abilities which impact company outcomes, including strategic decisions and performance (Papadimitri et al., 2020). Higher levels of education often bring deeper experience and understanding of strategic issues, as well as improved skills in analyzing and responding to complex external dynamics (Issa et al., 2022). Thus, diversity in the educational levels of the board of directors can be used by companies to assist in making strategic decisions and achieving competitive advantage (Katmon et al., 2019).

Based on stakeholder theory, companies have an obligation to consider the interests of various stakeholders and not just shareholders (Freeman et al., 2010). The education of the board of directors plays a role in the CSR strategic decision-making process by making it more effective and providing a better understanding of stakeholders (Peng et al., 2021). The level of board education can broaden understanding of the needs of various stakeholder groups, thereby increasing CSR disclosure (Issa et al., 2022).

Directors with higher education levels bring ideas and perspectives on issues, learn more about social trends, and have more ethical perceptions (Jouber, 2021). The social trends in question can include the adoption of digital technology by the public in accessing and disseminating information, which creates new expectations for transparency and online company engagement. Directors who have overseas postgraduate degrees in science or engineering and have more international work experience can influence the company's innovative activities (Tang et al., 2021). This educational background can not only broaden their knowledge and ethical sensitivity but also increase their understanding of the importance of adopting technology and digital media, including social media as a tool to reach stakeholders. Therefore, boards of directors with higher levels of education are expected to be better able to recognize the potential of social media as a means of rapid, widespread, and efficient CSR information disclosure, leading to the following hypothesis.

H3: The level of education of the board of directors has a positive effect on CSR disclosure on social media.

Based on stakeholder theory and prior empirical findings, this study proposes a conceptual framework to examine how board characteristics influence CSR disclosure on social media. The proposed model is presented in Figure 1.

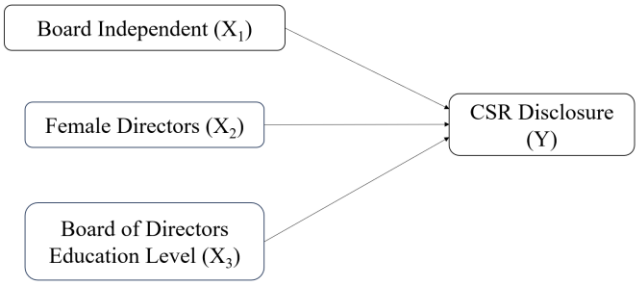

Figure 1. Conceptual Framework

RESEARCH METHODS

This study used data from tweets on the social media accounts of companies in the basic materials, industrials, consumer non-cyclicals, consumer cyclicals, healthcare, and technology sectors listed on the IDX in 2023 (n=344). These sectors are manufacturing companies that were selected because they consume natural resources to produce products and simultaneously cause severe environmental damage in the form of pollution (Shahzad et al., 2020). Therefore, this sector is highly active in addressing public concerns and communicating its CSR policies (Smith,

2017). Industries with high environmental and social impacts also use social media to communicate more about how they address these impacts (ElAlfy et al., 2020). Companies that did not post tweets on X throughout 2023 (n=53) and those that did not report their annual reports to the public (n=1) were excluded from the sample. Although the sample size is relatively limited (n=34), it represents firms actively using social media platforms. Also, within these samples, we obtained over 5,000 tweets data for the analysis.

In 2023, Indonesia's Best Corporate Sustainability Initiatives award began using company social media assessments by measuring engagement rates as a parameter for CSR success on digital platforms (PressRelease.id, 2023). Additionally, in the 2023 "Indonesia Best Corporate Sustainability Initiatives" awards, social media was also used as an assessment indicator in the CSR award category, namely Cause Promotion (Fardaniah, 2023). Thus, many companies actively used social media for CSR disclosure in 2023, which makes this topic relevant to this study.

CSR disclosure was studied on X (formerly Twitter) because companies use X more than other social media platforms, such as YouTube, Facebook, LinkedIn, and Pinterest, to communicate CSR information (J. Yang et al., 2020). X allows information to spread faster than other media (Schmidt et al., 2020). This dissemination is due to the use of the 're-tweet' feature, which forwards tweets to other users, thereby reaching a wider audience and potentially making them a trending topic (Gómez-Carrasco et al., 2021). Individuals with higher education are active users of X, with bachelor's, master's, and doctoral degree holders having the highest rates of use (Robertson, 2023). In addition, Indonesian companies have voluntarily disclosed CSR information on social media, although the intensity of such disclosure remains far below that of mandatory CSR disclosures in annual reports (Ramananda & Atahau, 2020).

CSR disclosure on X is used as the dependent variable. Data collection was carried out using Python. X allows the collection of tweets using Python because it is one of the tools permitted for data retrieval under the social media service's terms of service (X.com, 2023). A total of 5,852 tweets were obtained using Python. Content analysis was used to identify tweets disclosing CSR on social media by grouping texts into themes through careful reading to find thematic patterns (Neuendorf, 2017). Content analysis was conducted using coding procedures to facilitate the identification of CSR-related topics.

Tweets were identified as CSR-related based on the topics they contained, using a coding procedure (codebook). Tweets that did not fall under any CSR topic were categorized as general (n=4493). However, if the tweet was not included in the general topic, it was not coded (n=53). CSR-related topics consisted of information on economic (n=359), environmental (n=369), and social (n=494) impacts (GRIStandards, 2023). If a tweet falls under more than one CSR topic, it was coded according to the topics it falls under (n=84). Subsequently, the measurement was calculated as the ratio of CSR tweets to the total number of tweets published by the company (Amin et al., 2021).

To reduce subjectivity, intercoder reliability was ensured for each topic (Neuendorf, 2017). Independent coders use the same codebook and data for coding (Krippendorff, 2019). Independent coders coded 10% of the total tweet data, as this amount was sufficient to represent the population at the unit of analysis (Neuendorf, 2017; Riffe et al., 2024). The coding results were examined for similarities and differences to assess the reliability of the codebook. This examination was measured using Cohen's Kappa. Reliability was considered very good if it reached a value of 0.80. The reliability measurement results showed a Kappa value of 0.913, which meant that it exceeded the benchmark, so the coding of all tweets could be continued by the coders.

The characteristics of the board of directors used as independent variables were independent boards, female boards of directors, and the educational level of the board of directors. Board data was obtained from the company's annual reports, containing information about the company's board. Board independence was measured as the percentage of independent board members, calculated by dividing the number of independent board members by the total number of board members (Ebaid, 2022). The indicator used for female board members was measured by the ratio of female directors to the total number of board members (Khaireddine et al., 2020). The education level of the board of directors is measured by assigning distinct values to each level of study to reflect gradual differences: bachelor's degree = 1, master's degree = 2, doctoral degree = 3 (Papadimitri et al., 2020). This ordinal scaling is intended to capture the hierarchical differences in educational attainment among directors. Alternative measures in prior studies include diversity indices such as the Blau index, the proportion of directors with postgraduate degrees (Hartmann & Carmenate, 2021; Issa et al., 2022), and dummy variables (Tang et al., 2021). However, these approaches may not fully reflect the gradation of educational levels across board members. Therefore, this study adopts a weighted ordinal measure to represent the incremental differences in educational achievement better

This study uses the tenure of the board of directors, the age of the board of directors, and profitability as control variables. Tenure increases innovative activities, creativity, and expertise in monitoring, resulting in more effective decision-making regarding CSR disclosure (Khan et al., 2019). Tenure is measured by calculating the average tenure of all directors (Huang & Hilary, 2018). The age of the board of directors affects the level of CSR disclosure because, as age increases, the board's moral reasoning ability improves, which is reflected in greater emphasis on transparency (Amin et al., 2021). Board age is measured by calculating the average age of board members (Fahad & Rahman, 2020). Meanwhile, CSR disclosure reflects an understanding of accountability, social justice, and corporate responsibility, which can ultimately affect profitability through an increase in corporate reputation (Mahmuda & Muktadir-Al-Mukit, 2023). Return on Assets (ROA) is used as one indicator to measure profitability. ROA is measured by dividing net income by total company assets (Chen et al., 2018).

Regression analysis was performed after conducting classical assumption tests to determine normality, heteroscedasticity, and multicollinearity (Hair Jr. et al., 2019). Based on the residual normality test, the Kolmogorov-Smirnov statistic was 0.200, with a p-value > 0.05, indicating that the normality assumption was met (Field, 2018). The multicollinearity test was performed using the Variance Inflation Factor (VIF) (Cleff, 2019). The multicollinearity test results showed VIF values below 10, indicating no multicollinearity. Next, the heteroscedasticity test was conducted using the Glejser test, with the p-value examined. The Glejser test results showed a value of 0.299 and a p-value > 0.05, indicating no evidence of heteroscedasticity. Then, multiple regression was used to test the relationship between board characteristics and CSR disclosure on social media. The regression equation model in this study is as follows.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \quad (1)$$

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 C_1 + \beta_5 C_2 + \beta_6 C_3 + e \quad (2)$$

Explanation:

Y	= CSR Disclosure	X_3	= Board of Directors Education Level
α	= Constant	C_1	= Tenure of Directors
$\beta_1 - \beta_6$	= Regression Coeff.	C_2	= Age of Directors
X_1	= Independent Board	C_3	= Profitability
X_2	= Female Directors	e	= Error

Hypothesis testing in this study used the F-test and t-test. The F-test was used to assess the model fit of the regression equation (Hair Jr. et al., 2019). An F-test p-value of less than 0.05 indicated that the regression model fit the data well and could be used to explain the effect of independent variables on the dependent variable. The t-test is used to determine the effect of each board characteristic on CSR disclosure in social media. A p-value less than 0.05 in a t-test indicates that the null hypothesis can be rejected, and vice versa (Gujarati, 2004).

RESULT AND ANALYSIS

The results of the content analysis show that in 2023, companies in Indonesia used social media X to communicate their CSR activities (see Table 1). This finding indicates that firms tend to use social media as a strategic and potentially symbolic tool for CSR communication. Through social media, companies can communicate transparently about their activities, thereby providing accurate and useful information for decision-making (DiStaso & Bortree, 2012). In addition, companies choose social media because it enables faster, more efficient, and broader interactions, thereby enhancing the credibility of CSR activities (Benitez et al., 2020).

Table 1 . Use of Social Media X for CSR Disclosure by Companies

Category	**Number**	**Percentage**
Revealing CSR on social media X	22	64.7%
Does not disclose CSR on social media X	12	35.3%
Total	34	100%

Through CSR disclosures on X, companies often use words such as program, activity, environment, and community (see Figure 2), indicating an emphasis on visible CSR initiatives and their social impact. This pattern suggests that companies tend to frame their CSR communication by highlighting positive and tangible activities in ways that can shape favorable stakeholder perceptions. Such practices reflect a tendency to present the organization as socially responsible and likable, for instance by emphasizing contributions and showing concern for stakeholders.

This aligns with the notion of ingratiation, where organizations use flattery and supportive communication to appear favorable and build positive impressions (Bolino et al., 2008). In addition, companies also often use hashtags in their tweets. These hashtags include words such as “banggasampoerna”, “csrindofood”, “sampoernauntukindonesia”, “yourgrowthpartner”, and “csr” (see Figure 2). Companies use hashtags to show that their tweets are relevant to a particular topic, namely CSR, and to facilitate information searches (Gómez-Carrasco et al., 2021).

Figure 2. Words That Often Appear in CSR Tweets

Table 2 shows that social topics are the most frequently mentioned aspect in CSR tweets. The strong focus on social aspects stems from companies being good members of society by participating in or contributing to human welfare (M. Kim et al., 2020). Therefore, companies place greater emphasis on social media disclosures related to CSR activities, such as community assistance and educational programs, as these demonstrate concern for the community. By disclosing social topics, companies also indirectly promote themselves to maintain or improve their image in the wider community (Ramananda & Atahau, 2020). This disclosure can also foster emotional engagement with consumers, ultimately driving loyalty and preference for the company's brand or products. By showcasing social activities on X, companies not only fulfill their social responsibilities but also strengthen their position as entities that care about and are close to the community. Therefore, this disclosure not only increases consumers’ knowledge of CSR but also positively impacts the company's reputation (S. Kim, 2019).

Table 2. CSR Disclosure

CSR Topics	N	%
Social	494	40.4
Environment	369	30.2
Economics	359	29.4
Total	1222	100

Environmental topics are less frequently discussed than social topics (see Table 2) because environmental issues can easily damage a company's reputation (Khojastehpour & Johns, 2014). The manufacturing industry causes severe environmental damage in the form of pollution (Shahzad et al., 2020), so it uses social media to communicate more about its efforts to address these impacts (ElAlfy et al., 2020). Environmental issues also often cause controversy, especially for companies operating in the extractive industry, which can make them more cautious about disclosing them in the public sphere. Thus, companies tend to protect their reputation by disclosing fewer environmental topics to avoid criticism or demands for improvement from stakeholders as a side effect of environmental disclosure. Therefore, companies may place less emphasis on environmental aspects when disclosing CSR on social media and focus more on social topics to enhance their positive reputation. Environmental topics are disclosed more in sustainability reports than on social media because disclosures in these reports are more detailed and intensive, covering the company's CSR activities over a certain period (Ramananda & Atahau, 2020). Sustainability reports allow companies to explain their environmental strategies and impacts in greater depth without the risk of misinterpretation that often occurs on social media.

On the other hand, economic topics are the least disclosed, at only 29.4% (see Table 2), because these topics evoke less emotional impact than social and environmental aspects (Currás-Pérez et al., 2018). Social media readers are more interested in information that evokes positive feelings, such as enthusiasm and satisfaction (Al-Rawi, 2020). Information about the economic aspects of CSR, such as financial performance, sustainable business strategies, or

corporate investments, often does not trigger positive emotions compared to social initiatives that touch on humanity or inspiring environmental projects. CSR programs in the social sector have a tangible impact that is immediately visible to the public, such as through disaster relief or donation activities. As a result, companies tend to highlight social and environmental aspects over economic ones because they are considered more effective in attracting attention and building a positive image on social media.

Table 3 shows that, on average, 20% of company tweets disclose CSR, although some do not. The company that discloses the most CSR information on X is Barito Pacific Tbk. However, 12 companies do not disclose CSR information, one of which is Triputra Agro Persada Tbk, which only discloses general topics such as religious holidays and general information unrelated to CSR.

Table 3. Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Y (CSR Disclosure)	34	0.00	0.78	0.20	0.23
X1(Independent Board)	34	0.25	0.75	0.40	0.10
X2 (Female Directors)	34	0.00	0.50	0.12	0.16
X3 (Board of Directors Education Level)	34	2.00	21.00	6.97	4.12
C1 (Tenure of Directors)	34	1.00	5.00	2.11	1.05
C2 (Age of Directors)	34	33.50	61.40	52.24	6.23
C3 (Profitability)	34	-0.95	0.24	0.020	0.21

Table 3 also shows that, on average, 40% of companies have complied with regulations requiring independent members on the board. In Indonesia, the policy on independent board members is regulated by Financial Services Authority Regulation No. 33 of 2014, which requires that 30% of the total members be independent. In addition to regulatory compliance, companies have independent members because the board can represent external stakeholders and increase managerial accountability, thereby encouraging improved company performance (Freeman et al., 2010). Based on Table 4, two companies (Jembo Cable Company Tbk and Kimia Farma Tbk) still have not complied with this policy, even though most have met the minimum regulatory requirements.

Table 4. Percentage of Independent Boards

Percentage of Independent Board	Number	%
Less than 30%	2	5.9
Between 30% - 50%	30	88.2
More than 50%	2	5.9
Total	**34**	**100**

Women are still underrepresented on boards, accounting for an average of 12% of total members (see Table 3). This average shows that most companies in Indonesia have yet to fully consider female directors for board membership. This is because the decision to have female members on the board of directors is not mandatory, as there are no targets for women on boards of directors in Indonesia (IBCWE, 2022). Table 5 shows in more detail that only 14 companies have female board members. This low proportion also reflects the persistence of the glass ceiling phenomenon, which refers to the real barriers and limitations that prevent women from reaching top positions in companies (Broadnax, 2018), mainly because these leadership positions are dominated by men. This condition may reflect the lack of inclusivity for women as they are part of a minority, resulting in low influence, limited voice, and weakened ability in strategic decision-making (Manita et al., 2018). In addition, the harsh nature of the manufacturing industry and its demand for rapid innovation are considered more suitable for masculine boards, while women's more cautious nature and tendency to avoid risk are often seen as weaknesses in company development (Widhiastuti et al., 2020). Thus, some sectors still rarely or never consider women because of these characteristics.

Table 5. Women in Manufacturing Industry by Enterprise Sector

Sector	Number of Companies	Number of Companies with Female Directors	%
Basic Material	7	2	28.57
Consumer Cyclicals	4	2	50.00
Consumer Non-Cyclicals	11	5	45.45
Energy	2	1	50.00

Healthcare	4	3	75.00
Industrial	5	1	20.00
Technology	1	0	0.00
Total	**34**	**14**	**-**

The basic materials sector is one that does not consider women on the board of directors. This sector includes many mining companies that are associated with masculinity so that men dominate, while women are considered less suitable because of stereotypes of femininity that cast doubt on physical strength, courage, and resilience (Sudaryat et al., 2024). This sector has a very low number of female employees across all roles because it is still dominated by men (Baker et al., 2019). Despite various obstacles, some women have managed to achieve leadership positions in male-dominated industries. The success of women is determined not only by professional skills but also by the combination of professional and interpersonal skills they possess (Esser et al., 2018).

Table 3 shows variations in the academic background of board members in different companies. Table 6 supports the findings by showing that the majority of board members hold university degrees, especially in companies with smaller boards. For example, a company with 3 board members has 75% of its members who only have a bachelor's degree. In contrast, companies with a higher number of boards have a higher proportion of members with master's degrees.

Table 6. Board of Directors Education Level

Numbers of Boards of Directors	**Bachelor's Degree**		**Master's Degree**		**Doctoral Degree**	
	N	**%**	**N**	**%**	**N**	**%**
2	5	50	4	40	1	10
3	9	75	2	17	0	0
4	15	47	12	38	1	3
5	12	34	18	51	0	0
6	12	33	20	56	3	8
7	1	14	5	71	0	0
11	7	64	3	27	0	0
15	9	60	6	40	0	0
Total	70	-	70	-	5	-

The presence of board members with a doctorate remains low in all categories with the highest percentage being only 10% in enterprises with 2 board members and 8% in enterprises with 6 members (see Table 6). Despite the importance of higher education, doctorates have not been the primary standard in the composition of the board of directors. Companies tend to have board members with a minimum level of undergraduate education and as the number of board members increases, the proportion of members with master's degrees increases. Such variations in the proportion of directors may indicate the company's policy of recruiting members of the board of directors. Some companies may place more emphasis on recruiting individuals according to the skills required (Mori & Charles, 2019), but there are also those that are based on their academic competencies. In addition, directors with doctorates have higher salaries compared to master's degrees magister (Marini & Henseke, 2023) so that salary burden can be taken into consideration in recruitment.

The average tenure of the board of directors is 2.11 years (see Table 3). The short tenure suggests that the company is trying to reduce the risk of over-attachment of board members to CEOs (Li & Wahid, 2017). In terms of age, the board of directors is on average 52.2 years old, thus indicating that there is a greater proportion of older directors. This average can indicate a company's preference for choosing directors who have the ability to make more mature and strategic decisions because age is often associated with experience and maturity (Fernandes et al., 2019). In terms of profitability, the companies in the sample had a variety of financial conditions. This considerable variation shows differences in financial performance among the companies studied.

Table 7 shows a significant F test so that such regression models can be used to explain the relationship of board characteristics to CSR disclosure in X. The coefficient of determination (R2) of Model 2 has a higher value than that of Model 1 indicating that Model 2 is better at predicting CSR disclosure in X than Model 1. Table 7 also shows

that the level of education of the board of directors has a positive effect on CSR disclosure on social media, but independent boards and female directors have no effect.

Table 7. Regression Analysis Results

Variables	Model 1	Model 2
X_1(Independent Board)	0.508	0.435
X_2 (Female Directors)	-0.087	-0.012
X_3 (Board of Directors Education Level)	0.028*	0.031*
C_1 (Tenure of Directors)		-0.012
C_2 (Age of Directors)		0.008
C_3 (Profitability)		0.212
Constant	-0.187	-0.587
Uji F	0.017*	0.036*
R^2	0.214	0.233

Note: *significant at $p < 0.05$

Regarding control variables, all variables had no effect on CSR disclosure on social media. The short tenure of the board of directors, namely 2.11 years, can be the reason for the absence of influence. The director gained a deeper understanding of the company as tenure increased (Sun & Bhuiyan, 2020). However, directors with short average tenures may not have enough time to understand and implement effective CSR disclosure strategies in X. The age of the board of directors which has an average score of 52 also has no effect so that most members of the board of directors are old and a small proportion of younger members. The smaller proportion of younger members results in less enthusiasm to support innovation and include/disclose more CSR activities on social media (Fahad & Rahman, 2020). Profitability also shows no influence. This finding could be because companies with higher profits tend to invest in exploration and production technology innovations (Nylund et al., 2020) so they do not prioritize allocating resources for CSR disclosure on social media.

The Effect of Board Independence on CSR Disclosure on Social Media

Results showed that independent boards had no effect on CSR disclosure on social media, and thus, hypothesis 1 was rejected. Previous research has suggested that independent boards will make the monitoring role even more effective as they are not affected by internal corporate interests and thus support the disclosure of CSR information (Ebaid, 2022). The independent board encourages corporate involvement in social activities (Arayssi et al., 2020), supports the dissemination of environmental information to enhance accountability (Gerged, 2021), and uses social media to build corporate image and transparency (Amin et al., 2021). However, the findings of this study differ, possibly due to contextual factors. In the Indonesian context, the effectiveness of independent boards may be limited, as board independence is often more symbolic than substantive. As a result, independent directors may play a relatively passive role in influencing strategic decisions, including CSR disclosure on social media, which is consistent with prior findings (Orazalin, 2019).

The findings of the study showed that the majority of the companies (n=88.2%) had only a proportion between 30%-50% of independent boards without showing a tendency to add more independent members. In fact, only 5.9% of companies have a proportion of more than 50%. This suggests that firms tend to maintain a certain number of independent boards within certain limits. While previous research suggested that more independent boards could increase transparency (Buertey & Pae, 2021), these results suggest that simply maintaining the number of independent boards within a certain limit is insufficient to encourage CSR disclosure on social media.

This finding is consistent with research indicating that independent boards may serve as a formality in certain contexts and are not directly involved in controlling and supervising companies (Purbawangsa et al., 2020). As a result, while independent boards play a role in overseeing and ensuring stakeholder interests are taken into account, their effectiveness in promoting information transparency is limited. Furthermore, the presence of an independent board may not be a major factor in stakeholder-related decision-making or CSR disclosure (Rao & Tilt, 2016). On the other hand, CEOs can play a greater role in influencing decisions regarding CSR disclosure because they are responsible for the quality and efficiency of decisions in implementing the strategy (Chouaibi et al., 2023). Therefore, CEOs can play a greater role in promoting the openness and transparency of CSR information on social media than

board members, who ensure that social media strategies and policies are implemented to support transparency and information disclosure (Chaher & Spellman, 2012).

Based on stakeholders theory, board decisions should take into account various stakeholders (Freeman, 1984), including ensuring corporate transparency through CSR disclosure. If the company maintains only a certain number of independent boards within a certain limit and without playing a proactive role, the effectiveness of the boards in carrying out supervisory functions and promoting information disclosure is limited. Thus, companies that have independent boards but only meet minimum limits have not been able to sufficiently encourage CSR disclosure on social media.

The Influence of Women on the Board of Directors on CSR Disclosure on Social Media

The results also showed that women on the board of directors had no effect on CSR disclosure on social media, and thus, hypothesis 2 was rejected. These results are different from previous research, which showed that female directors strengthened the board's attention to stakeholder groups, making the CSR strategic decision-making process more comprehensive (Peng et al., 2021). Women are more open in disclosing information because they see social media as a useful platform (Mouakket & Sun, 2020), and female directors tend to promote CSR activities through broad and accessible media (Amin et al., 2021). However, in this study the proportion of women was still small, so the influence on corporate decision making was limited. As with previous research results, female directors have small or negligible roles (Liu et al., 2020).

The presence of women on the board of directors has not been able to contribute to CSR disclosure. When there is only one woman on the board of directors, her role is often limited and poorly recognized, so her influence in decision-making is weak, her voice is marginalized, and her contribution to CSR disclosure is ineffective (Manita et al., 2018). Research findings show that the proportion of women on boards of directors is still low in most sectors, especially in the technology (0%), industrial (20%), and basic materials (28.57%) sectors. This underrepresentation of women reinforces the argument that women on boards often face limitations in roles and influence that could undermine their contributions to CSR disclosure. Data also shows that in 42% of companies in Indonesia, there are absolutely no women in leadership, and only 19% of women have functional roles (IBCWE, 2022).

Regarding CSR disclosure on social media, the low proportion of women on boards can reduce the variety of viewpoints needed to encourage innovation in CSR communication (Manita et al., 2018). Women on the board tend to be more active in asking questions and discussing boardroom issues (Wiersema & Mors, 2024). Women are also more sensitive to the detrimental effects that some business decisions can have on the environment (Burkhardt et al., 2020), which can encourage companies to pay more attention to sustainability aspects in their communications policies. Thus, female directors can contribute to the promotion of proactive environmental strategies (Xie et al., 2020), including promoting CSR activities and disclosure through broad and accessible media such as social media (Amin et al., 2021). However, the impact of being on the board is more visible when women have greater influence in decision-making (Liu et al., 2020). Conversely, if there are limited numbers of women on the board, then the director tends to have limitations in influencing the company's overall strategy, including in CSR communications policies. As a result, the role of women directors in supporting CSR disclosure on social media can be less effective.

Based on a stakeholder theory perspective, companies are expected to meet the interests of various stakeholders (Freeman, 1984). Fulfillment of these stakeholders can include openness and transparency in CSR disclosure. However, if women on the board do not have sufficient influence in the decision-making process and are not given equal space in the strategic decision-making process, then the director cannot effectively influence CSR communication to the public. Therefore, companies that have women on the board without assigning more substantial roles will not affect CSR disclosure decisions on social media. Women's impact on CSR will be evident when they have greater power in strategic decision-making and when there is strong motivation for companies to commit to CSR (Liu et al., 2020).

The Effect of the Board of Directors' Education Level on CSR Disclosure on Social Media

The level of education of the board of directors positively CSR influences the disclosure in X; hence, hypothesis 3 cannot be rejected. These results show that the board's education plays a role in increasing awareness and understanding of corporate social responsibility so that it can influence companies to be more active in disclosing CSR at X. Previous research also emphasized the role of board education in CSR decision making, especially in

increasing process effectiveness and understanding of stakeholder interests (Peng et al., 2021). Education not only improves cognitive skills, knowledge, and expertise (Bennouri et al., 2018; Hartmann & Carmenate, 2021), but also broadens understanding of the needs of various stakeholder groups regarding transparency, thereby improving CSR disclosure (Issa et al., 2022). Therefore, directors with higher levels of education may be more likely to support the use of social media as an effective channel for CSR disclosure to increase public trust.

These findings align with previous evidence showing that directors who have higher education with a postgraduate degree or international academic experience influence corporate innovation (Tang et al., 2021). In the research results, the majority of board members have bachelor's and master's degrees. Directors with higher education can be more open to innovation and tend to see social media as a strategic tool for conveying company information, including regarding CSR.

In the context of stakeholder theory, boards of directors who have higher levels of education are likely to have a stronger awareness of the importance of considering the interests of various stakeholders. The knowledge and insight gained through higher education can improve the board's ability to make strategic decisions regarding CSR (Peng et al., 2021). Through social media, the role of stakeholders is increasing because CSR posts can encourage active involvement from stakeholders (Nasr et al., 2024), thereby influencing public perceptions of companies in the mass media based on the information expressed. In this situation, a highly educated board of directors needs to respond to these dynamics by ensuring that online CSR communication strategies are prepared to maintain positive stakeholder relationships (Nasr et al., 2024).

The company decided to use social media to disclose its CSR as part of a broader communications strategy to build a positive corporate image and increase interaction with stakeholders (Basuony et al., 2018). A director with higher education can be associated with better cognitive and decision-making abilities (Papadimitri et al., 2020), thereby supporting the choice of CSR disclosure on social media to build a positive image and maintain relationships with stakeholders (Nasr et al., 2024). A higher level of education can increase innovation activities (Hakovirta et al., 2020), creativity, and expertise in monitoring, thereby leading to effective decision-making regarding CSR disclosure (Katmon et al., 2019). With a broader understanding of stakeholder needs and expectations, highly educated boards can be more proactive in promoting more open disclosure of CSR on social media as a form of accountability and transparency.

CONCLUSION

This research aims to determine the influence of company board characteristics on CSR disclosure on social media in manufacturing companies in Indonesia in 2023. The results showed that the board of directors' level of education had a positive effect on CSR disclosure on social media. This shows that the board of directors' level of education plays a role in encouraging information disclosure on social media. However, the independence of the board of commissioners and women on the board of directors had no effect on CSR disclosure on social media. Fulfilling the minimum number of independent boards within the company has not been sufficient enough to encourage CSR disclosure on social media. The low proportion of women on the board of directors means that the roles and suggestions offered tend to be limited or even ignored in supporting transparency in disclosure through broader media, such as social media.

The board's level of education positively influences CSR disclosure by enhancing understanding of the role of academics in driving corporate transparency on social media. These results highlight that individual aspects, such as the educational background of the board, also play a role in determining the extent to which companies utilize digital platforms as a means of information disclosure. Conversely, the absence of an influence of board independence and women on the board of directors on CSR disclosure provides new insight that internal corporate factors do not always impact corporate transparency practices

The results of this research provide companies with a perspective on preparing a board of directors composition that effectively encourages transparency in CSR disclosures. Companies need to pay attention to the education level of board members because boards with higher levels of education tend to better understand the importance of open information and the use of social media as a means of communication with stakeholders. While board independence and gender diversity have no effect on social media CSR disclosure, companies can still optimize the board's role.

From a policy perspective, these findings suggest that regulators such as the Financial Services Authority (OJK) may need to strengthen requirements about CSR disclosure, particularly regarding digital and social media platforms. The absence of a significant role for independent boards in this study indicates that conventional governance structures may be inadequate to ensure transparency, highlighting the need for more robust governance enforcement and monitoring mechanisms.

In terms of corporate governance, the findings imply that improving the quality of board competencies, including educational background and digital literacy, is essential to enhance transparency practices. This suggests that governance frameworks should not only emphasize structural aspects, such as independence and diversity, but also focus on board members' capabilities and effectiveness in responding to evolving communication channels.

While companies can optimize the role of boards in CSR disclosure on social media, the study faced technical constraints at the data coding stage. Some tweets could not be downloaded automatically. Hence, the researchers downloaded the data manually to complete the analysis unit. These technical issues could compromise the completeness and consistency of the analyzed data, prolonging the research process. Therefore, further research is recommended to employ more reliable methods or implement an automated verification system using machine learning before the analysis is carried out. This is done to minimize the risk of data loss and ensure accuracy in the tweet collection process.

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