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# CORPORATE GOVERNANCE AND CORPORATE SOCIAL RESPONSIBILITY: A STUDY OF EMERGING MARKET LISTED FIRMS

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## Abstract

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The main purpose of this paper is to examine the impact of corporate governance (CG) on corporate social responsibility (CSR) of Indonesian listed firms. Estimations via simultaneous equation models with ordinary least squares (OLS) and two-stage least squares (2SLS) were employed for 84 firms with a total of 924 observations over the period of 2007-2017. The results showed that a lack of CG in monitoring and supervisory mechanisms, as well as a high concentration of managerial ownership, can significantly contribute to low levels of CSR. There are data limitations as a number of firms were omitted due to the application of the CSR criteria utilised in this study. The research has implications for Indonesian listed firms with respect to aligning CSR initiatives to firm objectives. The paper provides recommendations for future research in this area. The paper provides one of the few studies to analyse CG on CSR via a comprehensive measurement of CSR. Further, it adds to the empirical academic literature from a developing country context.

**Keywords:** Corporate Governance, Corporate Social Responsibility, Indonesia, OLS, 2SLS

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## 1. INTRODUCTION

Emerging economies in the Asian region typically designed their corporate control mechanisms primarily based on the systems of the west (Aguilera & Crespi-Cladera, 2016). Due to the outcome of certain crises such as Enron, Worldcom, Maxwell, and Parmalat, corporate governance (CG) has attracted considerable attention in Indonesia (Kaihatu, 2006; Herdijiono & Sari, 2017). Poor CG

practices by individual firms in developing Asian countries led to internally driven reform such as that which occurred in Indonesia (Kaihatu, 2006; Herdijiono & Sari, 2017). In 1999 the Indonesian government established a National Committee on Corporate Governance aimed at strengthening, disseminating, and promoting good corporate governance (GCG) principles, the findings of which formed the basis for developing the national code of CG. However, the outcome of CG implementation in Indonesia failed to achieve the standards set (ACGA,

2018), and as a result, the Indonesian government has continued to introduce reforms to help improve GCG practices with the aim of reducing corruption, improving the business environment, and supporting economic growth.

The nature of, and the factors influencing the practices of CG, vary across countries. Factors such as weak institutional environments and legal rights can be an issue in developing countries (Claessens, 2006; Khanna & Palepu, 2011). Formal ties generally bring the form of common ownership by group affiliation structures (La Porta, Lopez-de-Silanes, & Shleifer, 1999) that can impact legal and regulatory infrastructures (Claessens, 2006; Khanna & Palepu, 2011). The oft-cited principal-agent conflict can be usurped by insider-controlled or closely held firm ownership issues instead (La Porta et al., 1999), where wealthy, powerful families exert ownership control of firms (Claessens, Djankov, & Lang, 2000; Abdallah & Ismail, 2017). In these countries, of which Indonesia is one, the agent and principal conflicts are likely to focus on controlling versus minority shareholders compared to management versus owners. Hence, for CG, internal CG mechanisms such as board control and ownership structures are equally as important as external CG mechanisms in determining control regarding agent priorities (Weir, Laing, & McKnight, 2002).

As Jo and Harjoto (2012) point out, corporate social responsibility (CSR) has been viewed as an extension of a firm's effort to encourage CG effectiveness and increase firm sustainability through accountability and transparency. In Indonesia, both CSR and effective CG practices are important business strategies as shareholders and other stakeholders become more critical and conscious of their rights and powers to impact firm behavior. Although this cannot replace the role of respective governments in providing public service and infrastructure, CSR activities can provide significant contributions to economic growth through listed firms employing effective CG mechanisms (Urip, 2010; Aagaard, 2016).

Despite the recognition of the important roles played by CG and CSR in supporting listed firms and contributing to economic development, the implementation of CG and CSR frameworks in Indonesia is not as effective as they are in neighboring developing countries (S&P Global & RobecoSAM, 2020). Although the synergy between CG and CSR have been recognised with effective CG enhancing CSR (Tang, Yang, & Yang, 2020) and CSR having a positive impact on firm value (Jo & Harjoto, 2011; Servaes & Tamayo, 2013; Harjoto & Jo, 2015), there continues to be a lack of awareness and understanding about the important role that CG can have on CSR of Indonesian listed firms. One major contributing factor to this outcome is the myopic view of their benefits focusing solely on the financial elements and ignoring the wider benefits (Haniffa & Cooke, 2005; Fauzi & Idris, 2009). Consequently, the present study defines CSR as the system in which firm managers analyse CSR-related activities and use the knowledge acquired from these kind activities for economic benefits (Arevalo & Aravind, 2015).

Previous studies that have consistently cited CG and CSR as essential aspects for economic

development were undertaken primarily in developed countries, with limited studies on developing countries, especially Indonesia (Claessens, 2006; Dam & Scholtens, 2012; Arli & Tjiptono, 2014; Kabir & Thai, 2017). There are also limited studies that assist managers of firms in evaluating CSR (Weber, 2008; Shen, Govindan, & Shankar, 2015). In Indonesia, several studies have shown improvements in CG and CSR through firm financial disclosure, minority shareholder protection, anti-corruption programs, and closer adherence to CG and CSR guidelines (Achda, 2006; Rudyanto & Siregar, 2016). However, the implementation of CG and CSR has failed to provide adequate satisfaction to stakeholders due to a lack of integration between the two concepts (Waagstein, 2011; ACGA, 2018). For this reason, the Indonesian government has continued to introduce reforms to help improve GC and CSR practices, with the aim of reducing corruption levels, improving the business environment, and supporting economic growth.

This has resulted in a significant gap between foundation theories and practical applicability in relation to CG and CSR issues. Specifically, the integration of the relationship between CG and CSR in a developing country such as Indonesia has not been addressed in the literature. To achieve this, the specific research question for this paper is: *Do CG mechanisms impact the level of CSR?*

The framework adopted to address this question specifies CG mechanisms as being influenced by board size, independent directors, and ownership structure (i.e., managerial ownership, public ownership, and institutional ownership). To reflect a broader conceptualisation of CSR, CSR is not only measured using CSR disclosure index (CDI)<sup>1</sup> but also using key performance indicators (KPIs) and CSR value added (CVA) as proposed by Weber (2008). These relationships are supported in the literature but have not been adopted previously in this context and constitute a contribution to the literature.

The roles of CG and CSR are identified as challenges faced by developing countries. Hence, research related to resolving them has great importance (Visser, 2008; Virakul, 2015). The new insights derived from this study will help foster greater awareness and understanding of the relationship between CG and CSR for the study population. In addition, a study in the Indonesian context is important as Indonesia is the fourth most populous nation in the world and the largest country in the Southeast Asian continent with 270 million people (Population Reference Bureau, 2019). Furthermore, although the Indonesian economy has been able to attract foreign direct investment, Indonesia still faces major challenges such as tax evasion, bribery/corruption, nepotism, cronyism, and lack of transparency (Arli & Tjiptono, 2014). These issues represent an obstacle in encouraging firms to adopt fiduciary and moral responsibilities toward stakeholders based on transparency, accountability, fairness, and honesty (Van den Berghe & Louche, 2005).

<sup>1</sup> The measure for the CSR disclosure (CDI) is adopted from Hackston and Milne (1996), who present an exhaustive list of information with social and environmental importance. Their study has been widely used in measuring the indices of CSR disclosure.

The results of this study demonstrated that a lack of CG in monitoring and supervisory mechanisms and a high concentration of managerial ownership significantly contributed to low levels of CSR. Independent directors with limited social and environmental expertise were identified as a possible key obstruction to the implementation of CSR. The adoption of a comprehensive CSR measurement by KPIs, CVA, and CDI facilitated the detection of more meaningful contributions to CSR in the context of a developing country, Indonesia. The identification of these critical factors is a contribution to the literature.

The rest of the paper proceeds as follows. Section 2 reviews the relevant literature which leads to the development of the conceptual framework and a set of hypotheses for the present study. In Section 3 the methods employed are explained and in Section 4 the analysis and results are presented and discussed. Finally, in Section 5 conclusions are drawn in light of the study's limitations with avenues for future research highlighted.

## 2. LITERATURE REVIEW, CONCEPTUAL FRAMEWORK, AND HYPOTHESES

Although many firms have adopted good CSR practices, some ignore their responsibility to society and the environment (Campbell, 2007). This raises a question related to CSR, which is: "... under what conditions are firms more likely to act in socially responsible ways than not?" (Campbell, 2007, p. 947). In response to this question, many governments have been proactive in adopting legislation to protect societal rights. In the context of Indonesia, laws such as the 2007 Corporate Law No. 40 and the 2007 Investment Law No. 25 were introduced to make firms more socially responsible by making CSR a mandatory requirement<sup>2</sup>. As a result of these two sets of laws, CSR programs have been implemented by individual firms in cooperation with the government and non-governmental organisations (NGOs). Although these steps have encouraged firms to be more active in CSR practices, Indonesia's firms have failed to achieve their intended targets which have resulted in stakeholder dissatisfaction. This failure to meet intended targets arose mainly because of a lack of effective reporting standards tempered by issues such as politics, differences in cultural understandings, and lack of expertise in CSR (Waagstein, 2011).

### 2.1. CG mechanisms impact on CSR

Although an array of definitions of CG exists in the literature (Du Plessis, Hargovan, & Harris, 2018; Mülbart, 2009), there is no generally accepted definition. The definitions are typically influenced by the aims of the studies involved. The definition of CG for this study incorporates the entire scope of formal and informal relations involving the firms and their impact on society (Keasey, Thompson, & Wright, 1997). It covers two main focus areas: 1) maximising shareholder value and protecting

shareholder interests; and 2) firm systems accountability (Farrar, 2008; Rezaee, 2009).

As with CG, definitions of CSR abound. Dahlsrud (2008) cited at least 37 different definitions employed in the CSR literature. Although this has led to some confusion, it does not mean that CSR is a vague and meaningless concept. Crane, McWilliams, Matten, Moon, and Siegel (2008) maintain that a universal definition is not necessary, given the concept's subjective nature. With this understanding, CSR is defined as a concept whereby firms need to go above and beyond legal requirements and firms' interests to serve communities and the natural environment while honoring ethical values (Cui, Jo, & Na, 2018).

Although some studies have posited that the relationship between CG and CSR is largely incompatible (Farooq, Ullah, & Mikani, 2015), the majority of the literature and empirical studies have shown that they are not only compatible but typically exhibit a significantly positive relationship (Jamali, Safieddine, & Rabbath, 2008; Jo & Harjoto, 2012). Bhimani and Soonawalla (2005) argue that the relationship between CSR and CG are two sides of the same coin, with a mutually strengthening effect (i.e., good CSR means good CG). Jamali et al. (2008) claim that there is a discernible overlap between CG and CSR, with GCG having a responsibility to serve and meet all stakeholder interests. This overlap may be the result of the CG-CSR one-way relationship since strong CG practices would encourage CSR (El Gammal, Yassine, Fakh, & El-Kassar, 2018).

Many studies employing a range of frameworks, such as agency theory, stakeholder theory, and resource dependency theory have found a positive association between CG and CSR (Bear, Rahman, & Post, 2010; Harjoto & Jo, 2015). Deconstructing this relationship further, given the critical function of monitoring the management on behalf of shareholders, board structure has been found to have a significant impact on CSR performance (Hillman & Dalziel, 2003), and studies have identified these characteristics.

Given the diverse nature of boards, the size of the board is an important factor determining the management of critical resources and the challenges of globalization in business, and its ability to function effectively (Booth & Deli, 1996). However, as Jensen (1993) argued, firms should carefully reconsider their board size when communication and coordination become a problem. He pointed out that smaller board sizes are more cohesive, more productive, and can monitor management behavior effectively, while larger board sizes have more difficulty achieving this level of effectiveness due, in part, to social loafing and high coordination costs. In the context of Indonesia, despite this criticism, a large board size may better represent a firm's ability to have good networks with various stakeholders and meet their stakeholder needs through disclosing CSR reports (De Andres, Azofra, & Lopez, 2005). As Frias-Aceituno, Rodriguez-Ariza, and Garcia-Sanchez (2013) argue, such disclosures will be more aligned with investor demands and provide more accurate non-financial information to stakeholders.

Effective boards include sufficient independent directors to contribute outsiders' views, and if properly constructed, to contribute expert views and

<sup>2</sup> The Indonesian government further established the 2012 Government Regulation No. 47 on social and environmental responsibility of Indonesian listed firms.

direction (Liu & Wang, 2019). In this way, executive managers can be deterred from actively seeking benefits from their position by sacrificing shareholder interests (Yunos, Smith, & Ismail, 2010). In the context of Indonesia, however, firms do not follow a uniform set of procedures in the selection of board of directors (BoDs). Indonesian organisational culture is typically identified as being highly group-oriented, possessing weak uncertainty-avoidance, male-dominated, and exhibiting hierarchical practices (Gupta, Surie, Javidan, & Chhokar, 2002; Irawanto, 2011). Hierarchical practices are identified as the natural way to order social and power relations (Blunt & Jones, 1997), where the major factor is superior 'character and ability' to persuade and influence the process of decision-making in an organisation (Gupta et al., 2002). The type of hierarchy practices based on seniority, trust, and loyalty have been adopted in hiring BoD members in the Indonesian board system. It is common practice for founders, their family members, and friends to hold membership of boards in perpetuity. This denies the shareholders and consequently the firms to benefit from diverse views. Thus, the independence of directors in Indonesian firms may be compromised or impaired when monitoring their manager's actions. This observation was made by Gilson and Kraakman (1991), who argued that it is vital for boards to not only be independent but also to be accountable to the shareholders for effective governance.

The involvement of CG mechanisms in managing and taking a decision in CSR issues, especially board and ownership structures, could be crucial determinants (Haniffa & Cooke, 2005; Cho & Chun, 2016). Given the board's critical function of monitoring management on behalf of a shareholder (Petra, 2005), independent directors can impact CSR performance (Khan, Muttakin, & Siddiqui, 2013). Studies from Barnea and Rubin (2010) and Harjoto and Jo (2011) show that a higher proportion of independent directors is associated with better CSR performance. Thus, striking a balance between executive and independent directors is important to construct an effective board (Westphal & Khanna, 2003).

With respect to ownership structure and CSR, it has been found that the level of CSR is weak in entities where the majority ownership lies in the hands of the founder and his/her family members. Managerial ownership firms, which consists partly of founding family firms, focused on stronger financial benefits because there are no perceived benefits of pursuing common interests (Claessens et al., 2000; Oh, Chang, & Martynov, 2011). A few studies found that managerial ownership is associated with lower levels of CSR (Ghazali, 2007; Oh et al., 2011). However, Lee (2006) argued that the long-term presence of founding families within firms can stimulate competitive advantages. For instance, founding families may view their firms as an asset that can be passed on to successive generations, hence the ability of the firm to succeed is extremely important. Thus, as Davis (1983) states, managerial ownership via the founding family tends to encourage and facilitate good employee performance by maintaining a strong relationship with its employees. In the case of dispersed ownership, their level of CSR is at a higher level (Chau & Gray, 2002).

Here, public ownership in Indonesia has begun to consider how Indonesian firms can act more responsibly in terms of social and environmental issues. Therefore, public ownership could facilitate the role of the state as a 'steward' for Indonesian listed firms that are dominated by weak strategic investors (Backx, Carney, & Gedajlovic, 2002; Wei, Varela, & Hassan, 2002). Furthermore, since institutional investors invest funds on others' behalf, they are likely to be supportive of CSR that provides long-term wealth to shareholders (Oh et al., 2017). Institutional shareholders tend to be more actively involved in the managerial decision process than non-institutional shareholders (Brickley, Lease, & Smith, 1988) since they often own a significant proportion of the firm's total shares and cannot easily sell their shares. Thus, the incorporation of institutional ownership is an effective way to monitor firm operations by top management (Oh et al., 2011).

The majority of Indonesian studies adopt a non-accounting proxy of CSR (e.g., CSR disclosure index (CDI)) to measure the implementation of CSR (Oeyono, Samy, & Bampton, 2011; Gantowati & Agustine, 2017). Studies using a CDI tend to comprise summary indicators of particular CSR stakeholder interests. This method has been widely used in CSR studies in developing countries (Khan, 2010; Abu Qa'dan & Suwaidan, 2019). Given the focus on the economic benefits of CSR, this study adopts a measurement of CSR engagement that incorporates both accounting and non-accounting proxies, similar to Weber (2008) and Hackston and Milne (1996). The CSR measures consist of: 1) three key performance indicators (KPIs); 2) CSR value-added (CVA); and 3) CSR disclosure index (CDI).

The first KPI focuses on customer attraction and retention. Here, firms actively engaged with CSR can lead to higher levels of customer attraction and retention. This can result in improved market share (MS) and increased firm value (Du, Bhattacharya, & Sen, 2007; Brammer & Millington, 2008). Thus, this study will use MS as a proxy measure for customer attraction and retention based on Rust and Zahorik (1993) and Weber (2008). The second KPI focuses on employer attractiveness where prior studies by Turban and Greening (1997) demonstrate a role between a firm's CSR activities and employee recruitment. In keeping with Waldman, Kelly, Aurora, and Smith (2004) and O'Brien-Pallas et al. (2006), the present research will adopt the variable cost per hire (CPH) to measure employer attractiveness. Here, the CPH measurement calculates the costs associated with the recruiting, sourcing, and staffing activities borne by an employer to fill an open position in the firm. Thus, a high CPH reflects higher internal costs due to the employer attractiveness of a CSR engaged firm as demonstrated via larger numbers of job applicants who apply for an employment vacancy. The third KPI focuses on employee motivation and retention given its demonstrated link with CSR in prior studies as stated by Navickas and Kontautiene (2012). This study employs the ETO indicator as used by Weber (2008) who showed that unsatisfied employees are less motivated and more likely to leave their firm.

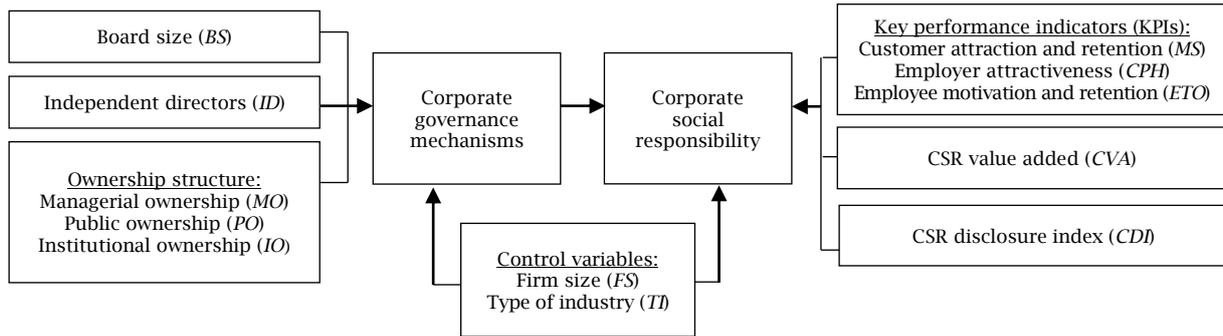
The second main component of the CSR measure is CVA. The use of CVA reflects the perspective that "to increase shareholder value,

a company must address the needs of its stakeholders more efficiently and effectively than the company against which it competes” (Birchard, 1995, p. 49). This measure has been used by Hsieh, Dye, and Ouyang (2008) as well as Keca, Keca, and Pantic (2012) and is also employed in this study. The third, and final, component of the CSR measure is CDI. The term CSR is inherently about disclosure. The dimensions of CSR disclosure have been widely used in Indonesian studies (Gunardi, Febrian, & Herwany, 2016; Gantjowati & Agustine, 2017) and

are thus also employed in this study. Furthermore, firm size and type of industry are employed as control variables.

Based on the extant literature, a conceptual framework utilising a multi-theoretic approach based on agency theory, stakeholder theory, and resource dependency theory was developed to encompass the associations between CG mechanisms and CSR of Indonesian listed firms. The framework serves as the foundation for this study and is presented in Figure 1 below.

Figure 1. Conceptual framework for the study



As the conceptual framework illustrates, the value of CSR is measured using KPIs: 1) customer attraction and retention via market share (MS); 2) employer attractiveness via cost per hire (CPH); and 3) employee motivation and retention via ETO, CVA, and the CDI. The value of CG mechanisms is measured using board size (BS), independent

directors (ID), managerial ownership (MO), public ownership (PO), and institutional ownership (IO). Furthermore, firm size (FS) and type of industry (TI) are employed as control variables. Based on the literature, a set of hypotheses were developed to achieve the objectives of the study. These are presented in Tables 1 and 2.

Table 1. Proposed hypotheses for the relationship between CG mechanisms and CSR

Dependent variable*	Positive impact	Negative impact
Market share (MS)	Board size (H1a) Independent directors (H2a) Public ownership (H4a) Institutional ownership (H5a)	Managerial ownership (H3a)
Cost per hire (CPH)	Board size (H1b) Independent directors (H2b) Public ownership (H4b) Institutional ownership (H5b)	Managerial ownership (H3b)
Employee turnover (ETO)	Board size (H1c) Independent directors (H2c) Public ownership (H4c) Institutional ownership (H5c)	Managerial ownership (H3c)
CSR value added (CVA)	Board size (H1d) Independent directors (H2d) Public ownership (H4d) Institutional ownership (H5d)	Managerial ownership (H3d)
CSR disclosure index (CDI)	Board size (H1e) Independent directors (H2e) Public ownership (H4e) Institutional ownership (H5e)	Managerial ownership (H3e)

Note: \* market share variable represents the KPI: customer attraction and retention; cost per hire represents the KPI: employer attractiveness; and employee turnover represents the KPI: employee motivation and retention.

Table 2. Proposed hypotheses for 2SLS estimates of the relationship between CG mechanisms and CSR

Dependent variable*	Positive impact	Negative impact
Market share (MS)	Independent directors (H7a) Public ownership (H9a)	
Cost per hire (CPH)	Board size (H6a) Public ownership (H9b)	
Employee turnover (ETO)	Board size (H6b)	Managerial ownership (H8a)
CSR value added (CVA)	Independent directors (H7b)	Managerial ownership (H8b)
CSR disclosure index (CDI)	Independent directors (H7c)	Managerial ownership (H8c)

Note: \* market share variable represents the KPI: customer attraction and retention; cost per hire represents the KPI: employer attractiveness; and employee turnover represents the KPI: employee motivation and retention.

### 3. RESEARCH METHOD

#### 3.1. Data

This study used secondary data from the sources of annual financial reports; the Indonesian Stock Exchange (IDX) Fact Book; Indonesian Capital Market Directory (ICMD), Orbis-Bureau van Dijk; and Datastream database. A few studies have used a similar approach to use multiple data sources in CG and CSR (Hong, Li, & Minor, 2016; Alshbili, Elamer, & Beddewela, 2019). The study sample included Indonesian listed firms in the IDX for the study period of 2007-2017. The selected firms in the study sample had to meet initial three-pronged criteria: 1) provide CSR information or disclosures from 2007 to 2017 (Indonesian firms that were identified as being CSR active over the sample period, and thus included in the study sample, was determined via The Indonesian Program for Pollution Control, Evaluating and Rating (PROPER) introduced starting in June 1995 in cooperation between the Environmental Impact and Management Agency (BAPEDAL) and the World Bank), since the national code of CG was created in 2001, and later revised in October 2006 (Ghofar & Islam, 2014), prior to the establishment in 2007 of a law that made CSR a mandatory requirement (Waagstein, 2011); 2) possess complete data for the study period; and 3) be classified into a non-quaternary sector. The quaternary sector was excluded since this sector was subject to different CG requirements in Indonesia as evidenced by the 2006 regulation No. 8/14/PBI/2006 regarding good CG practices for the Indonesian banking industry. Furthermore, this sector significantly differs in its accounting and reporting practices (Gelb & Strawser, 2001) which hinders comparison. Based on these criteria, the number of firms was reduced from 607 to 126. From there, an additional 37 firms were omitted from the study sample since they contained outliers. Finally, since this study adopts the translog linear function, and the variables in the study need to be measured as their natural logs, a further five firms were omitted because they included negative values. The final sample size of the study was 84 firms with a total of 924 observations. The observation period will enable this study to adequately review the implementation effects of the latest CG code and CSR law.

#### 3.2. Study estimations

Corporate governance constructs need to reflect independence from behavioural factors such as

$$MS_t = \alpha_1 + \alpha_{11}BS_t + \alpha_{12}ID_t + \alpha_{13}MO_t + \alpha_{14}PO_t + \alpha_{15}IO_t + \alpha_{16}FS_t + \alpha_{17}TI_t + \varepsilon_{11} \quad (2)$$

$$CPH_t = \alpha_2 + \alpha_{21}BS_t + \alpha_{22}ID_t + \alpha_{23}MO_t + \alpha_{24}PO_t + \alpha_{25}IO_t + \alpha_{26}FS_t + \alpha_{27}TI_t + \varepsilon_{21} \quad (3)$$

$$ETO_t = \alpha_3 + \alpha_{31}BS_t + \alpha_{32}ID_t + \alpha_{33}MO_t + \alpha_{34}PO_t + \alpha_{35}IO_t + \alpha_{36}FS_t + \alpha_{37}TI_t + \varepsilon_{31} \quad (4)$$

$$CVA_t = \alpha_4 + \alpha_{41}BS_t + \alpha_{42}ID_t + \alpha_{43}MO_t + \alpha_{44}PO_t + \alpha_{45}IO_t + \alpha_{46}FS_t + \alpha_{47}TI_t + \varepsilon_{41} \quad (5)$$

$$CDI_t = \alpha_5 + \alpha_{51}BS_t + \alpha_{52}ID_t + \alpha_{53}MO_t + \alpha_{54}PO_t + \alpha_{55}IO_t + \alpha_{56}FS_t + \alpha_{57}TI_t + \varepsilon_{51} \quad (6)$$

The CG mechanisms consist of two crucial aspects: board control and ownership (Huang, 2010). Here, effective boards include board size ( $BS_t$ ) and

a manager's motivation in decision-making along with the interrelations between different CG mechanisms (Chowdhury, Othman, Khan, & Sulaiman, 2020). To achieve this, Donker and Zahir (2008) stated that it would be preferable to employ simultaneous equations to assess the CG construct. Previous studies in this research area have employed simultaneous equation models (Agrawal & Knoeber, 1996; Wagner, Van Phu, Azomahou, & Wehrmeyer, 2002; Wang, Lee, & Chuang, 2015). Consequently, the present study will develop and estimate simultaneous equation models in order to address the research question.

The study employed simultaneous equation models with ordinary least squares (OLS) and two-stage least squares (2SLS) estimate approaches. The 2SLS was included to capture the interdependence, if any, of CG mechanisms and CSR, and the two estimates are employed in a complementary manner (Dreher & Vaubel, 2004). The use of both OLS and 2SLS has been used in previous studies (Al-Tuwaijri, Christensen, & Hughes, 2004; Black, Jang, & Kim, 2006; Bhagat & Bolton, 2008). This approach accounts for potential endogeneity which has been an issue with CG and CSR studies (Harjoto & Jo, 2011). Not accounting for endogeneity increases the possibility that the relationship between CG and CSR could be overstated (Harjoto & Jo, 2011). In addition, using both estimates enable this study to facilitate comparison with past studies (Berger, Ofek, & Yermack, 1997; Beiner, Drobetz, Schmid, & Zimmermann, 2006).

As the conceptual framework illustrates, the value of CSR is measured using KPIs, CVA, and the *CDI*, whereas the value of CG mechanisms is based on board size, independent directors, and ownership structure (i.e., managerial ownership, public ownership, and institutional ownership). Furthermore, firm size and type of industry are employed as control variables. Using a system of simultaneous equation models with OLS and 2SLS estimates the relationship between these variables was estimated with the following:

$$CSR_t = f_1(BS_t, ID_t, MO_t, PO_t, IO_t, FS_t, TI_t), \quad (1)$$

The following simultaneous equation models were employed to test the hypotheses. There are five variables of CSR: market share (*MS*), cost per hire (*CPH*), employee turnover (*ETO*), CSR value added (*CVA*), and CSR disclosure index (*CDI*).

independent board of directors ( $ID_t$ ), since boards are identified as large decision-making groups that impact the effectiveness of a firm's decision-making

process (Dwivedi & Jain, 2005; Arora & Sharma, 2016). Firm ownership structure also plays a crucial role in the CG mechanism due to its strong impact on firm decision-making and staff motivation, including managerial ownership ( $MO_t$ ), public ownership ( $PO_t$ ) and institutional ownership ( $IO_t$ ) (Cheng & Wall, 2005; Buchanan, Cao, & Chen, 2017). In addition, the control variables, firm size ( $FS_t$ ) and type industry ( $TI_t$ ) are also included to avoid misspecification.

## 4. EMPIRICAL RESULTS

### 4.1. Descriptive statistics

The relevant descriptive statistics for all variables in Table 3 are calculated based on a sample size of 84 firms. The table contains the variables that comprise the following subsets: 1) CG mechanisms;

2) firm characteristics; and 3) CSR. With respect to CG mechanisms, all firms in the sample meet the statutory minimum requirement of two directors on the board. The Indonesian Stock Exchange regulated a minimum of 30% of BoD members of listed firms to be independent directors. In the sample, 87% of firms had complied with this requirement. With respect to managerial ownership, about 11% of the firms in the sample are characterised by concentrated shareholdings (5% or more shareholding). Interestingly, the high CV and Kurtosis (5.00 and 60.61, respectively) suggest that there is a wide range of managerial ownership structures across Indonesian firms. For public ownership, the mean and median figures were both 34%, whereas institutional ownership consists of 63% foreign institutions and 37% domestic institutions.

**Table 3.** Descriptive statistics

<i>Data subset</i>	<i>Mean</i>	<i>Median</i>	<i>SD</i>	<i>CV</i>	<i>Kurtosis</i>	<i>Skewness</i>	<i>Min</i>	<i>Max</i>
<b>1) CG mechanisms</b>								
Board size (the number of members) (BS)	6.00	5.00	2.00	0.34	0.14	0.61	2.00	12.00
Independent director (ID)	42%	40%	12%	0.29	3.19	1.37	0%	100%
Managerial ownership (MO)	1%	0%	5%	5.00	60.61	6.43	0%	71%
Public ownership (PO)	34%	34%	21%	0.62	-0.34	0.52	0.20%	95%
Institutional ownership (IO)	25%	13%	28%	1.12	-0.59	0.82	0%	99%
<b>2) Firm characteristics</b>								
Firm size (FS)	17,407	7,956	22,483	1.30	30.29	4.70	331	295,646
<b>3) CSR</b>								
Customer attraction and retention (MS)	6%	3%	9%	1.59	18.35	3.88	0.01%	66%
Employer attractiveness (CPH)	137	44	308	2.25	49.09	6.14	0.02	3,689
Employee motivation and retention (ETO)	2,658	637	7,838	2.95	48.17	6.63	49	65,509
CSR value added (CVA)	8,680	3,946	15,503	1.79	25.31	4.46	26	115,143
CSR disclosure index (CDI)	0.56	0.57	0.17	0.30	-0.33	-0.23	0.04	0.94

Note: SD = standard deviation, CV = coefficient of variation, Min = Minimum, Max = Maximum.

The CSR descriptive statistics show that the mean market share was 6%, ranging from a minimum of 0.01% to a maximum of 66%. The median value was 3% with the majority of firms (96%) having less than a 30% average market share. The results of employer attractiveness show that the mean of its proxy cost per hire is IDR 137 billion. The standard deviation of cost per hire and the CV value is relatively high at IDR 308 billion<sup>3</sup> and 2.25, respectively. This indicates that notable disparities in cost per hire exist across the Indonesian firms involved in CSR. The results of employee motivation and retention show that the mean employee turnover was 2,658. The CV value is relatively high at 2.95, which indicates wide disparities in employee turnover across Indonesian firms involved in CSR. The high CV value for CSR value added is 1.79, which indicates that there is a wide CSR value added disparities across the sample. The CSR disclosure index had a mean of 0.56, ranging from a minimum of 0.04 to a maximum of 0.94. The CV figure of 0.30 suggests

that there are various levels of CSR disclosures occurring across the study sample, albeit fairly consistent. A test for reliability was conducted via the Cronbach Alpha test using SPSS. The results showed that CDI had a high internal consistency (0.96) indicating that the CDI measure was reliable.

### 4.2. Overview of results of OLS estimates

This study of the relationship between CG mechanisms and CSR was estimated in non-linear Cobb-Douglas type functions, in order to capture the non-linear impacts. The functional form was estimated under two methods: 1) OLS; and 2) 2SLS, producing a set of two results. The results of the OLS estimate of the relationship of CG mechanisms and CSR is reported in Table 4, and the results of the 2SLS estimate are reported in Table 5. The result of the estimates would suggest that the relationship of CG mechanisms and CSR, all have diminishing marginal returns (DMR) properties.

<sup>3</sup> IDR = Indonesian Rupiah, the Indonesian currency; US\$ 1 in 2007: IDR 9,419; US\$ 1 in 2008: IDR 10,950; US\$ 1 in 2009: IDR 9,400; US\$ 1 in 2010: IDR 8,991; US\$ 1 in 2011: IDR 9,068; US\$ 1 in 2012: IDR 9,670; US\$ 1 in 2013: IDR 12,189 (source: Bank Indonesia).

**Table 4.** The OLS estimates for the impact of CG mechanisms on CSR

Variable	Key performance indicators (KPI)			CSR value added (CVA)	CSR disclosure index (CDI)
	Market share (MS)	Cost per hire (CPH)	Employee turnover (ETO)		
Constant	-16.1617*** (0.42780)	-3.6210*** (0.68883)	-1.79515*** (0.65667)	1.43166*** (0.54492)	-2.13379*** (0.16902)
Log board size ( $LBS_t$ )	0.49097*** (0.11981)	0.61134*** (0.19291)	0.97362*** (0.18390)	0.34467** (0.15260)	0.08207* (0.04734)
Log independent director ( $LID_t$ )	-0.32132*** (0.09123)	0.06391 (0.14689)	0.56023*** (0.14003)	-0.39139*** (0.11620)	-0.03652 (0.03604)
Log managerial ownership ( $LMO_t$ )	-0.01315** (0.00556)	-0.00503 (0.00896)	-0.01851** (0.00854)	-0.03329*** (0.00709)	-0.00113 (0.00220)
Log public ownership ( $LPO_t$ )	-0.16312*** (0.03166)	-0.23691*** (0.05098)	0.08401* (0.48597)	-0.24790*** (0.04033)	-0.01212 (0.01251)
Log institutional ownership ( $LIO_t$ )	0.04181*** (0.01072)	0.00426 (0.01726)	0.03738** (0.01646)	0.06898*** (0.01366)	0.01149*** (0.00424)
Log firm size ( $LFS_t$ )	0.76600*** (0.02546)	0.84902*** (0.04099)	0.50540*** (0.03908)	0.79820*** (0.03243)	0.09857*** (0.01006)
Log type of industry ( $LTI_t$ )	-0.63424*** (0.07811)	0.19881 (0.12576)	0.64397*** (0.11989)	-0.04934 (0.09949)	-0.22895*** (0.03086)
F-statistic	212.843	87.8621	55.2598	131.568	34.7941
Adj R <sup>2</sup>	0.61636	0.39714	0.29154	0.49754	0.20401
Likelihood ratio-statistic	45.9046	12.1972	1.22702	37.4669	274.130
Prob (LR)	0.99980	1.00000	1.00000	1.00000	0.00000

Note: This table reports the coefficient of the OLS estimates from the model explaining the impact of CG mechanisms on the level of CSR with standard errors in parenthesis. The dependent variable is CSR: KPI performances (MS, CPH, and ETO), CVA, and CDI. The usual diagnostic test of the likelihood ratio statistic is adjusted for robust heteroskedasticity. Table A.1 (see Appendix) provides variable definitions. Table A.2 (see Appendix) comprises the correlation matrix for the study. \*\*\*, \*\*, \* statistically significant at the 1%, 5% and 10% levels, respectively.

#### 4.3. Discussion of OLS estimates between CG mechanisms and CSR

This study produced mixed results regarding the relationship between the five CG mechanisms and the five CSR proxies highlighting the complex relationship between CG mechanisms and CSR in Indonesia. The significant and positive relationship found between board size and the five CSR proxies in Indonesia indicates that a large board size can better represent a firm's ability to have good networks with various stakeholders. It also represents a greater diversity of skills and knowledge, which can be associated with a greater acceptance of integrating CSR elements such as disclosures. Since each stakeholder presents different interests and impacts how a firm behaves (Clarkson, 1995), CSR disclosure can meet investors' needs and provide proper non-financial information to various stakeholders (Frias-Aceituno et al., 2013). Thus, a firm with a larger board size might be more prone to include investments to support CSR activities.

The study reported a significant and positive relationship between independent directors and one proxy of CSR, employee turnover. This suggests that independent directors may increase the willingness of firms owned by founding families to provide employees with higher salaries, greater benefits packages, and good work environments to enhance employee motivation and retention (Chen & Hsu, 2009). Founding families may view their firms as an asset that can be passed on to successive generations, hence the ability of the firm to develop a capable and royal set of qualified employees to help this transition is extremely important (Davis, 1983; Miller & Le Breton-Miller, 2005). The study also found a significant and negative relationship between independent directors and two proxies of CSR, market share, and CSR value added indicating that the independence of directors in Indonesian listed firms may be compromised or impaired when

monitoring their manager's actions. According to Gilson and Kraakman (1991), it is crucial for boards to have aspects of independence and accountability to the shareholders for effective governance. The reason for the negative and significant relationship could be that the time and the cost spent on CSR can distract from the firm's main priority of maximising shareholder value (Haniffa & Cooke, 2005; Prado-Lorenzo & Garcia-Sanchez, 2010) and consequently, destroy their professional reputation (García-Sánchez & Martínez-Ferrero, 2017).

With respect to independent directors, the IDX has endorsed a regulation requiring that listed firms appoint independent directors in BoDs. This is to enhance director independence with regard to their monitoring and supervisory role of firm managers since Indonesian family-businesses, or controlled groups, significantly influence the recruitment and function of independent directors (Zainal & Muhamad, 2014). Although the IDX has regulated a minimum proportion of independent directors (30% of all members of BoDs), no standard mechanism exists on how Indonesian firms recruit independent directors (Dewi, Mukhtaruddin, & Apriany, 2014). Typically, the majority of independent directors recruited by Indonesian firms are based on their expertise in evaluating historically available financial information rather than on deliberating about uncertain strategic information, which CSR falls within (Handajani, Sutrisno, & Chandrarin, 2009). These issues may explain why the present study found that the representation of independent directors was not significantly associated with CSR.

The results showed a significant and negative relationship between managerial ownership and three of the CSR proxies, market share, employee turnover and CSR value added. A possible reason for both market share and CSR value added is that family-controlled firms that have privileged access to strategy and resource, can influence

the management's decision to not engage in CSR programs that do not show a clear return on investment, although they may be socially optimal (Song, Gianiodis, & Li, 2016). In the context of Indonesia, customers are still more likely to consider the traditional criteria of price and quality when making purchases rather than the need to support CSR programs undertaken by firms. Regarding the negative relationship between managerial ownership and employee turnover, which was used to represent employee motivation and retention, the results suggest that employees in firms owned by managers have high levels of motivation which could lead to higher employment retention rates via lower employee turnover. This supports Lee (2006) and Davis (1983) where managerial ownership, via the founding family, tends to develop good employee performance by maintaining a strong relationship with its employees.

The results also demonstrated a significant and negative relationship between public ownership and three of the CSR proxies, market share, cost per hire and CSR value added as well as a positive relationship between public ownership and CSR, as measured by employee turnover. The latter result suggests that CSR can be used as an effective strategy for firms with a dispersed ownership structure to enhance employee commitment and retention. For instance, CSR activities can generate a positive perception by outsiders about their firms (Kim, Lee, Lee, & Kim, 2010) such as the recent example of Permata Bank employees helping disadvantaged societies that have struggled against the impact of the COVID-19 pandemic. Thus, as Backx et al. (2002) and Wei et al. (2002) concluded, public ownership can provide a good CG mechanism for Indonesian listed firms that are characterized by weak strategy investors.

The negative relationship between public ownership and CSR, as measured by cost per hire, suggests that potential employees are not attracted to firms with a dispersed ownership structure based on their CSR. Within the Indonesian context, a firm that has a public ownership structure is more likely to be associated with having a relatively poor interest in the firm's sustainable strategies or CSR. Hence, future skilled employees who are motivated, in part, by an association with CSR outcomes would be less willing to join these firms (Strandberg, 2009). The negative relationship between public ownership and CSR, as measured by market share and CSR value added, suggests that public investors are likely to be less interested in the firm's CSR strategy than monetary benefits such as dividend received and capital gains. This could be due to the relatively large costs faced by investors with small shareholdings of acquiring information and processing it (Van Der Burg & Prinz, 2006; Dam & Scholtens, 2012). Consequently, in the Indonesian

context, CSR investment is still viewed as a niche market for public ownership listed firms.

The results did show a significant and positive relationship between institutional ownership and four of the CSR proxies, market share, employee turnover, CSR value added, and CSR disclosure index. The positive relationship between institutional ownership and CSR suggests that firms with institutional ownership have strong motivation to monitor controlled ownership by managers, especially by promoting CSR to strengthen the value of their investments (Oh et al., 2011). Therefore, since institutional ownership is generally active in monitoring (Brickley et al., 1988; Oh et al., 2011), it may be instrumental in generating the level of CSR in Indonesian listed firms.

With respect to the control variables, this study identified a strong association between firm size and CSR as evidenced by the significant relationship between firm size and all five CSR proxies. A significant positive relationship between firm size and CSR indicates that larger firms with greater visibility engage in more and better CSR performance initiatives (Sembiring, 2005), whereas smaller firms with lower visibility are less engaged (Rindova, Pollock, & Hayward, 2006). This study produced mixed results regarding the relationship between the type of industry and CSR. Specifically, this study found a significant relationship between the type of industry and three CSR proxies of market share, employee turnover, and CSR disclosure index, while an insignificant relationship was identified for the two CSR proxies of cost per hire and CSR value added. This implies that the level of CSR depends, to some extent, on the type of industry. This observation concurs with the past studies such as Gallo and Christensen (2011) and Melo and Garrido-Morgado (2012), although further studies are needed to establish the actual nature of this relationship between the type of industry and CSR within the Indonesian context.

#### 4.4. Overview of results of 2SLS estimates

The result of the 2SLS estimates suggests that the relationship between CG mechanisms and CSR has DMR (see Table 5 below). For the 2SLS, a hold-out approach is adopted to provide the best econometric model of the CG-CSR relationship. This approach combines one variable with the others into the model specification in order to ensure the extent to which each of these variables demonstrates the significant coefficient of 2SLS estimates and their aggregate effects. The 2SLS estimate is more suitable when error terms of the dependent variable are correlated with the independent variables.

**Table 5.** The two SLS estimates for the impact of CG mechanisms on the level of CSR

Variable	Key performance indicators (KPI)			CSR value added (CVA)	CSR disclosure index (CDI)
	Market share (MS)	Cost per hire (CPH)	Employee turnover (ETO)		
Constant	-19.5044*** (0.91730)	-3.86063*** (1.39392)	-4.29546*** (0.95496)	-0.45392 (1.17570)	-2.67051*** (0.32451)
Log board size ( $LBS_t$ )	-	0.29011 (0.98588)	-0.93738 (0.94779)	-	-
Log independent director ( $LID_t$ )	-2.04576*** (0.86779)	-	-	-1.94710*** (0.73631)	-0.38195* (0.20324)
Log managerial ownership ( $LMO_t$ )	-	-	-0.12451** (0.05837)	0.04081 (0.04785)	-0.00811 (0.01321)
Log public ownership ( $LPO_t$ )	-0.27643 (0.24036)	-0.20815 (0.26433)	-	-	-
Log firm size ( $LFS_t$ )	0.87888*** (0.03528)	0.87282*** (0.09712)	0.69149*** (0.08325)	0.85205*** (0.03913)	0.11586*** (0.01080)
Log type of industry ( $LTI_t$ )	-0.51707*** (0.13109)	0.18812 (0.14631)	0.43105*** (0.15108)	0.15201 (0.14781)	-0.21214*** (0.04080)
F-statistic	334.966	139.338	83.4164	181.657	57.6939
Adj R <sup>2</sup>	0.45498	0.39653	0.08916	0.29220	0.11210

Note: This table reports the coefficient of the OLS estimates from the model explaining the impact of CG mechanisms on the level of CSR with standard errors in parenthesis. The dependent variable is CSR: KPI performances (MS, CPH, and ETO), CVA, and CDI. Table A.1 (see Appendix) provides variable definitions. \*\*\*, \*\*, \* statistically significant at the 1%, 5% and 10% levels, respectively.

#### 4.5. Discussion of 2SLS estimates between CG mechanisms and CSR

Except for institutional ownerships, every other variable had some impact on the dimensions of CSR. Specifically, the 2SLS estimates did not provide support for the impact of board size on the three CSR proxies employed in the estimation: cost per hire, employee turnover, and CSR disclosure index. The benefit of a large board usually arises from its diversity in the term of occupational attributes of directors (Hillman, Canella, & Paetzold, 2000) than simply from large numbers. This finding of lack of influence of board size of Indonesian firms on the level of CSR could be an indication that these boards are not sufficiently diverse. Further, as predicted by organisational behavior research, large groups tend to be less effective than small groups in the decision-making process (Hackman, 1990).

The 2SLS estimates demonstrated a significant negative impact of independent directors on three of the CSR proxies, market share, CSR value added, and CDI disclosure index. A reason for this could be the cost and time spent on CSR can distract from the firm's main priority of maximising shareholder value (Haniffa & Cooke, 2005; Esa & Ghazali, 2012). In addition, since independent directors are generally minority shareholders, they tend not to support projects that may fail because the potential benefit might not justify the possible reputation risks associated with certain investments (Masulis & Mobbs, 2014).

The 2SLS estimates did not provide support for the impact of public ownership on two of the CSR proxies, market share and cost per hire, which confirms the passive nature of public ownership in Indonesia. This could be due to the relatively large costs faced by investors with small shareholdings of acquiring information and processing it (Dam & Scholtens, 2012). This seems to reinforce prior studies that found insignificant relationships between investments and CSR (Galema, Plantinga, & Scholtens, 2008; Barnea & Rubin, 2010).

The 2SLS estimates showed that the impact of managerial ownership on employee turnover was negative and significant, while its impact on the two CSR proxies was insignificant. The findings suggest

that the aspect of managerial ownership is confined to employee turnover, which was used to represent employee motivation and retention. This suggests that employees in managerial owned firms have high levels of motivation which could lead to higher employment retention rates via lower employee turnover and supports the finding by Lee (2006).

#### 5. CONCLUSION

Corporate governance and CSR, which incorporate notions of transparency, accountability, and fairness, are important dimensions of a firm's responsibilities toward its stakeholders. Although it has been established that these two dimensions make significant contributions towards increasing firm value in developed countries, limited studies have been conducted in developing countries.

Grounded in a multi-theoretic approach, the present study seeks to understand the effect of corporate governance on CSR engagement. The OLS results suggest that careful consideration needs to be given to hiring more independent directors with the appropriate expertise to positively contribute to CSR. In addition, the link between larger board sizes and greater CSR disclosures was demonstrated. Since a majority of listed firms in the sample had a low distribution of concentrated managerial ownership, the negative findings for CSR suggest that CG reforms need to address the excessive control exerted by a family business or controlled groups. One possible way to address this is for the government to implement a policy ensuring that listed firms hire a minimum of one independent director on board who is a social and environmental expert to give more support to CSR.

With respect to ownership structure, the OLS and 2SLS estimate results showed that publicly owned firms were not likely to reap the internal benefits associated with the attraction of new employees with good skills and qualifications. The OLS and 2SLS estimate demonstrated that ownership by management positively influenced employee motivation and retention. This suggests that firms owned by managers, which consists partly of founding family firms, tend to maintain a strong relationship with its employees as the firm is an asset that can be passed on to successive

generations. In addition, the OLS estimates showed institutional ownership via CSR may reduce business risk in the Indonesian market.

The results of the study provide some important managerial and theoretical implications for listed firms in Indonesia. For instance, due to the low level of awareness of CSR in purchasing decisions, Indonesian listed firms need to carefully consider CSR product strategies in order to attain a favourable customer response. For example, programs that donate to charity as product purchase incentives have shown a positive firm value impact on companies. An important theoretical implication that involves the most appropriate measurement approach is the comprehensive CSR measurement that incorporates both accounting and non-accounting proxies. Although the proposed CSR comprehensive measure is not definitive, the approach undertaken in this study can act as a foundation for future research.

There are limitations regarding the use of data in the model. For example, although this study justified the inclusion of three KPIs (market share, cost per hire, and employee turnover), two other KPIs (brand value and firm reputation) were omitted from the analysis due to a lack of data availability. A further limitation of the study is that the number of listed firms chosen was restricted to a sample size of 84 firms, which is approximately 14% of

the population. Many firms were eliminated from the final study sample due to the application of various criteria which were in keeping with the CSR definition utilised in this study which also incorporates the establishment of CSR mandatory requirements in 2007. In addition, benefits of CSR, such as reduced corruption, bribery, and collusion, could not be included due to the difficulty in appropriately measuring these benefits based on existing data sources.

Suggestions for further research, from an Indonesian perspective, include those focusing on the relationship between CG mechanisms and CSR that concentrate on the influencing factors of board compositions based on occupational attributes of directors (skill qualification, director background, information, and the potential linkages to various stakeholders). This would allow for a more comprehensive analysis of the CG mechanisms impacting CSR. In addition, addressing other ownership types such as states and foreign ownerships could also advance the literature on the relationship between CG mechanisms and CSR. To incorporate a greater representation of KPIs, future studies might consider adopting a mixed methods approach (primary and secondary data sources) to incorporate all five KPIs as proposed by Weber (2008) in examining the value of CSR in an Indonesian context.

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## APPENDIX

Table A.1. Variable definitions and measures

Construct	Variable		Unit	Variable definitions	
Corporate governance (CG)	Board size (BS)		Decimal	The logarithm (log) of the number of board of directors.	
	Independent directors (ID)		Percentage	The proportion of independent of directors divided by the total number of directors on the board.	
	Managerial ownership (MO)		Percentage	The percentage of shares held by the firm's management (BoDs and/or managerial members).	
	Public ownership (PO)		Percentage	The percentage of shares held by outsider shareholders (i.e., individuals or firms who are non-controlling shareholders and have less than 5 % ownership).	
	Institutional ownership (IO)		Percentage	The percentage of shares held by institutional investors (i.e., banks, pension and mutual funds, insurance firms, and endowment foundations).	
Corporate social responsibility (CSR) engagement	Key Performance Indicators (KPIs)	Customer attractiveness and retention	Market share (MS)	Percentage	Market share is formulated by the proportion of the total sales of products or services achieved by the firm divided by total sales in that specific industry.
		Employer attractiveness	Cost per hire (CPH)	IDR billions	$Cost\ per\ hire\ (IDR) = internal\ costs + external\ costs + company\ visit\ expenses + direct\ fees$ where: <ul style="list-style-type: none"> <li>- internal costs are employment or recruiting office salaries and benefits;</li> <li>- external costs are third party agency - fees and consultants;</li> <li>- company visit expenses are interviewing costs, candidate travel, lodging and meals;</li> <li>- direct fees are advertising costs, job fairs, agency search fees, cost awarded for employee referrals, and college recruiting.</li> </ul>
		Employee motivation and retention	Employee turnover (ETO)	Decimal	Employee turnover is formulated by the standard deviation of the total number of employees.
	CSR value added (CVA)			IDR billions	$CVA = \sum_{n=1}^{n=\infty} (B_n^{CSR} - C_n^{CSR}) \times \frac{1}{(1+i)^n}$ where: <ul style="list-style-type: none"> <li>- <math>B^{CSR}</math> is CSR benefits;</li> <li>- <math>C^{CSR}</math> is CSR costs;</li> <li>- <math>n</math> is the number of years observation;</li> <li>- <math>i</math> is the discount rate.</li> </ul>
	CSR disclosure index (CDI)			Decimal	CSR disclosure index.

Table A.2. Correlation matrix of variable interests in the typical linear function

	BS	ID	MO	PO	IO	MS	CPH	CVA	CDI
BS	1.000000	-0.139039	0.015793	-0.048678	0.120073	0.411430	0.322026	0.343932	0.230318
ID	-0.139039	1.000000	-0.040417	-0.004376	-0.010914	-0.034969	0.060650	-0.024535	-0.028292
MO	0.015793	-0.040417	1.000000	-0.117387	-0.104356	-0.022274	0.001784	-0.096711	0.000844
PO	-0.048678	-0.004376	-0.117387	1.000000	-0.092925	0.031171	-0.010779	-0.020985	0.038556
IO	0.120073	-0.010914	-0.104356	-0.092925	1.000000	0.217950	0.116800	0.250883	0.150218
MS	0.411430	-0.034969	-0.022274	0.031171	0.217950	1.000000	0.645850	0.791900	0.204980
CPH	0.322026	0.060650	0.001784	-0.010779	0.116800	0.645850	1.000000	0.591158	0.200257
CVA	0.343932	-0.024535	-0.096711	-0.020985	0.250883	0.791900	0.591158	1.000000	0.160662
CDI	0.230318	-0.028292	0.000844	0.038556	0.150218	0.204980	0.200257	0.160662	1.000000

Note: BS = Board size; ID = Independent board of directors; MO = Managerial ownership; PO = Public ownership; IO = Institutional ownership; MS = Market share; CPH = Cost per hire; ETO = Employee turnover; CVA = CSR value added; CDI = CSR disclosure index; FS = Firm size; TI = Type of industry.