



The Influence of Corporate Governance on Corporate Social Responsibility: Evidence from an Emerging Market

Eswaran Velayutham

*School of Business, University of Southern Queensland,
Queensland, Australia.*

Eswaran.Velayutham@usq.edu.au

Abstract

The study aims to investigate further the nexus between corporate governance and corporate social responsibility practice using a sample of Sri Lankan public listed firms during the period 2012-2017. Corporate social responsibility reporting practices are affected by institutional mechanisms and firm-level corporate governance factors. Studying the relationship between corporate governance and corporate social responsibility practice in an emerging market is imperative because emerging market settings are characterised by institutional voids. This study adopts two econometric methods developed by Beck and Katz (1995) and Driscoll and Kraay (1998) to tackle the potential problems of heteroscedasticity, cross-sectional dependence, and autocorrelation that might be present in the panel data set. This study finds that the larger size of the audit committee is a significant determinant of corporate social responsibility and fails to find evidence of the rest of the studied corporate governance variables in Sri Lanka. Instead, firms operating in Sri Lanka may engage in CSR to fill the institutional voids.

Keywords: Corporate governance, Corporate social responsibility, Institutional theory, Institutional voids, Panel data techniques, Emerging market, Sri Lanka

Introduction

Firm-level corporate governance mechanisms and external institutional infrastructures in a country are two factors, which influence firms to engage in corporate social responsibility (CSR) practice (Aguilera et al., 2007; Ferri et al., 2022; Filatotchev and Nakajima, 2014; Ioannou and Serafeim, 2012; Jo and Harjoto, 2012; Mair and Marti, 2009). Corporate governance-CSR nexus literature provides evidence that good corporate governance mechanisms lead to better CSR in the most developed markets (Harjoto and Jo, 2011; Jo and Harjoto, 2012; Zhang, 2013), where the institutions are well-functioning. However, the corporate governance-CSR nexus is not clear in emerging markets (Haj, 2012; Khan et al., 2013; Lau et al., 2016), where institutional infrastructures in the capital, labour, product, and service markets are absent or functioning poorly (Khanna et al., 2010; Su et al., 2016).

The institutional voids refer to situations where the formal rules and the game that enables market activities in which firms operating are absent or weak (Khanna et al., 2010; Khanna et al., 2005) and are often outside the firm's control (Chakrabarty and Bass, 2014). Khanna and Palepu (2000) suggest that financial markets categorised in emerging markets are weak corporate governance, lack of disclosure practice, and weak securities regulations. These factors create uncertainty in emerging economies due to institutional voids (Blank and Groselj, 2014; Saeed et al., 2022). While institutional voids create difficulties or obstacles for firms in an emerging market to do business, these firms adopt different approaches to overcome the problems presented by the institutional voids. Although corporate governance and CSR practice have been well-researched in developed markets, relatively less attention has been paid to emerging markets where primarily institutional voids existed, which is the motivation of this study.

This research argues that institutional voids in emerging markets provides two competing views about the relationship between firm-level corporate governance and CSR. First, suppose a firm adopts effective corporate governance mechanisms and use CSR disclosure as tools to fill the institutional voids. In that cases CSR disclosure as tools to fill the institutional voids, the effective corporate governance variables may impact CSR. Second, as the presence of institutional voids in emerging markets hurdles the effective adaptation of corporate governance mechanisms, firm-level corporate governance mechanisms may not have much effect on influencing CSR practice. Therefore, corporate governance variables fail to have an impact on CSR. Nevertheless, companies may voluntarily engage in CSR practice as a strategy to fill the institutional voids. This study contributes to the existing literature by examining the impact of corporate governance mechanisms on CSR in an emerging market, Sri Lanka. First, this study finds that the larger size of the audit committee is a significant determinant of CSR and fails to find evidence of the rest of the corporate governance variables in Sri Lanka. Second, firms may adopt CSR practice as a strategy to work around and fill the

institutional voids when corporate governance mechanisms are not related to CSR practice.

The rest of the paper is organised as follows. Section 2 reports a literature review and the theoretical background of the study. Section 3 presents the development of the hypothesis. Section 4 provides the research methodology. Section 5 reports the empirical results and interpretation. Finally, the conclusion and recommendations are provided in Section 6.

Literature review

This study reviews the four strands of the literature that are relevant to this study. The first strand of part presents an institutional theory. The second strand focuses on the relationship between corporate governance and institutional voids. The third strand relates to CSR and institutional voids. The final strand of the literature describes the impact of corporate governance variables on CSR practice in the presence of institutional voids.

Institutional theory

Prior research on the impact of corporate governance on CSR adopts different theories such as legitimacy theory, stakeholder theory, agency theory, and resource dependence theory to explain the associations (Harjoto and Jo, 2011; Jo and Harjoto, 2012; Khan et al., 2013). However, since the institutional infrastructure of a country plays a vital role in the relationship between corporate governance, ownership variables, and CSR practice at the firm level, the institutional theory or neo-institutional theory is valuable lens to investigate the relationship.

Institutions in society are the rules of the game that govern the interactions, behaviors, and activities of organisations (Li et al., 2009; North, 1990). Institutional theory predicts that if firms receive adequate institutional infrastructure facilities from a country, they are more likely to perform efficiently. When institutional infrastructure is robust, institutional theory suggests that institutional pressures force firms to compete not only for critical resources but also for organisational legitimacy (DiMaggio and Powell, 1983; Powell and DiMaggio, 1991). When institutional infrastructure is poorly functioning, institutional theory predicts that the absence or weak and ineffectiveness of external institutions may impede the effective functioning of firms' operations (Chakrabarty and Bass, 2014). The institutional theory explains in the context of institutional voids how the absence of adequate institutional infrastructures impacts the effective functioning of board ability. Two significant arguments arise at the firm level when presence or absence of a practical institutional setting in a country. Firstly, firms will be forced to seek legitimacy when effective institutional infrastructure prevails in a country (Beddewela and Fairbrass, 2016; Chakrabarty and Bass, 2014). Secondly, firms

will use different strategies to fill or workaround institutional voids when effective institutions are not functioning effectively (Khanna et al., 2005; Su et al., 2016).

Corporate governance and institutional voids

Klapper and Love (2004) argue that two possibilities may arise about the relationship between the country-level legal infrastructure and firm-level corporate governance mechanisms. Firstly, firms in an emerging market with poor legal infrastructure would adopt better firm-level corporate governance mechanisms to offset the institutional voids. Secondly, firm-level corporate governance mechanisms would be constrained by institutional voids. They find that in the presence of institutional voids, firms may not have much flexibility to improve their investor protection; as a result, they may have lower corporate governance quality. In this line of research, Chakrabarty and Bass (2014) argue that effective corporate governance mechanisms of firms could be one possible way to work around the institutional voids. They claimed that weak institutions tend to aggravate the institutional voids, making it harder for corporate governance to guide microfinance institutions to work around them.

CSR and institutional voids

Khanna and Palepu (1997) claimed that in developed markets, well-developed institutional mechanisms enable investors to have a free flow of mainly precise information about firms, whereas, in emerging markets, the absent or ineffective institutional mechanisms create little information about firms. In this context, firms operating in emerging markets may adopt some strategies to fill these institutional voids to differentiate themselves. Some examples of firms operating in emerging markets adopt new mechanisms and strategies to overcome institutional voids. Firstly, microfinance institutions in emerging economies have become an essential tool by providing small and low-interest rate loans to low-income entrepreneurs to form small businesses (Chakrabarty and Bass, 2013; Liang et al., 2014; Sun and Im, 2015). Secondly, firms in emerging markets attempt more innovation, use professional management consultancy firms to fill the institutional voids, and drive companies to try more innovation (Back et al., 2014). Thirdly, the CSR adaptive mechanisms and strategies act as an institutional buffer, which enables firms to successfully engage in responsible practice in the presence of an institutional void in emerging economies (Amaeshi et al., 2016).

Firms in emerging markets lack institutional infrastructure and difficulty communicating about firm quality with their stakeholders. Firms adopting CSR practices serve as mechanisms to fill institutional voids and demonstrate their capabilities to go beyond narrow economic and legal requirements (Su et al., 2016). Moreover, they argue that firms that engage in CSR convey a signal to investors that distinguish their numerous competitors. As a result, firms with CSR practices are more valued by investors and

provide evidence that firms in emerging markets can differentiate the quality of firms by adopting CSR practices to signal their high capability as a strategy in the presence of institutional voids.

Scherer and Palazzo (2011, p. 899) postulate that many firms have already started engaging in CSR beyond legal requirements and filling regulatory vacuum in global governance. Gradl et al. (2011) argue that many larger firms from an emerging market, particularly multinational firms have been improving CSR compared with their developed market peers. Naomi (2014) shows that firms from the emerging market are less likely to engage in CSR because they may believe that their small scale is likely to impact their investment. Jamali and Neville (2011) show that engaging CSR of firms in emerging countries is not only a response to global institutional pressures but also national institutional pressures. Do (2022) find that the effect of CSR on the likelihood of default is more prominent in countries with institutional voids and provides evidence supporting the role of CSR in filling institutional voids.

CSR and corporate governance

Prior studies have investigated how corporate governance influences CSR practice in the developed market. A limited number of studies have examined how board characteristics and ownership structure affect CSR practice in emerging markets. Khan et al. (2013) studied the impact of corporate governance variables on CSR reporting in the annual reports using manufacturing Bangladeshi firms. They provide evidence that ownership structures such as managerial share ownership, public holding, and foreign ownership impact on CSR. Lau et al. (2016) examine the relationship between corporate governance variables, namely board size, board independence, board gender diversity, the proportion of foreigners on the board, board members having foreign experience, state ownership and ownership concentration, and CSR reporting in an emerging market using Chinese firms. They find that firms with a larger board, international experience, and state ownership impact CSR and fail to find evidence of the rest of the corporate governance variables. Esa and Ghazali (2012) investigate the effect of corporate governance on CSR in Malaysian government-linked firms. They use only two corporate governance variables, board size and board independence, and find that larger boards are more likely to disclose CSR practices. However, they fail to locate the relationship between board independence and CSR disclosure. Said et al. (2009) investigate the relationship between corporate governance variables: board size, board independence, CEO duality, audit committee, ten largest shareholdings, managerial share ownership, foreign ownership, and government ownership. They find that state ownership and audit committee are the two variables only positively impact CSR.

Corporate governance, institutional voids, and CSR

Amashehi et al. (2016) find that firms operating in emerging markets use CSR as a tool to fill institutional voids. In line with this finding, Su et al. (2016) provided evidence that CSR reporting fills the institutional voids and displays its capabilities. Klapper and Love (2004) find that firms may have poor corporate governance quality in institutional voids. Beddewela and Fairbrass (2016) examine how institutional pressures influence CSR practices among MNEs based in Sri Lanka and how they seek legitimacy using CSR practice. They show that CSR activities can be an essential tool by which companies implement strategic responses to manage external institutional pressures and ultimately gain legitimacy.

The Hypothesis development

Institutional void contexts provide an interesting setting to analyse the relationship between corporate governance and CSR. Previous literature on the relationship between corporate governance variables in emerging markets does not provide clear evidence about the above relationship. For example, most of the previous studies in the emerging market found that corporate ownership structures play a vital role in influencing CSR practice. However, they fail to find crucial corporate governance variables such as board independence, gender diversity, and board sub-committees characteristics. This study examines the associations between corporate governance and CSR practice in an emerging market. Specifically, this study investigates how CSR practices are affected by board size, board gender diversity, board independence, executive chairman, audit size, director ownership, and institutional ownership under institutional voids.

Board size

The board's primary objective is to formulate business strategies, which are implemented by the top management team. The board size is defined by Wang and Hussainey (2013, p. 30) as that "the total number of executive and non-executive directors on the board of directors at the date of the annual meeting in each fiscal year." There are two confronting views existing in the literature about the link between the board size and CSR practice. The first view is related to a positive association between board size and CSR practice. Ntim and Soobaroyen (2013) argue that the larger boards are associated with greater diversity regarding experience, expertise, and stakeholder representation which can enhance corporate image and reputation; the bigger board can be expected to disclose more CSR practices. The second view relates to the larger boards having communication and coordination-related problems, which lead to ineffective monitoring of firms' managers (Wang and Hussainey, 2013). Therefore, there is a greater risk of large boards being dominated by powerful managers, which can negatively impact CSR

practice (Ntim and Soobaroyen, 2013). The association between board size and CSR practice is limited, but empirical evidence is mixed. Mackenzie (2007) and Wang and Hussainey (2013) show a positive relationship between board size and CSR practice. In an emerging market setting, Lau et al. (2016) and Esa and Ghazali (2012) find a positive association between CSR and board but Said et al. (2009) find no evidence.

Hypothesis 1: There is an association between board size and the CSR index.

Board gender diversity

Post et al. (2011) argue that women and men on the board of directors have different incentives for CSR practice. Boulouta (2013) suggests that women on the boards are more likely to be socially responsible because they have empathic and caring qualities. Fernandez-Feijoo et al. (2012) find that women directors on the board are more likely to engage in CSR. Amran et al. (2014) show that CSR reporting quality found no relationship in the Asia-Pacific region. Lau et al. (2016) find no evidence between CSR and board gender diversity in an emerging market, China.

Hypothesis 2: There is a positive association between board gender diversity and the CSR index.

Board independence

The board of directors contains the executive as well as non-executive directors. An independent director is a non-executive director who is less aligned with management and is free of any business or other relationship that could materially interfere with the independent exercise of his/her judgment. More independent directors on the board increase effectiveness of board monitoring and are more likely to provide more transparent and quality information to stakeholders. Board independence is measured as the proportion of independent directors to the number of directors on the board. Many studies examine the association between board independence and CSR practice and suggest that a higher proportion of independent directors on the board tend to be more socially responsible, thereby increasing the level of CSR practice (Harjoto and Jo, 2011; Jo and Harjoto, 2012; Ntim and Soobaroyen, 2013). In the emerging markets context, Khan et al. (2013) find a positive association between board independence and CSR for Bangladeshi firms whereas Lau et al. (2016), Esa and Ghazali (2012) Said et al. (2009), and Aboud and Yang (2022) find no evidence for emerging economies.

Hypothesis 3: There is a positive association between board independence and the CSR index.

Executive chairman/CEO duality

CEO duality exists when the same person has double roles as the chairperson of the board of directors and the firm's chief executive officer (CEO) at the same time

(Subramaniam et al., 2009). Effective corporate governance mechanisms do not allow an individual to serve as CEO and chair of the board of directors. Firms with CEO duality offer more power to the CEO, which may enable him/her to make decisions without considering the stakeholders' interests (Khan et al., 2013). The role of the CEO duality has advantages as well as disadvantages.

The benefits of having CEO duality in a firm are quick and timely decision-making and effective board monitoring. The problems of CEO duality are the dominance of power, ineffective board monitoring, and engagement in managerial rent-seeking. Khan et al. (2013) and Said et al. (2009) report no relation between the role of CEO duality and CSR. Jizi et al. (2014) find a positive relation between CSR and CEO duality.

Hypothesis 4: There is a negative association between the executive chairman and the CSR index.

Audit committee size

Good corporate governance mechanisms always require that the audit committee should be chaired by an independent director and the majority of directors on the committee will be independent. Two competing views existing in the literature about CSR and the size of the audit committee. The first view is that larger audit committees may carry out responsibilities more effectively, making them more likely to provide more CSR information. Pucheta-Martínez and De Fuentes (2007) and Felo et al. (2003) argue that larger audit committees tend to spend adequate time and effort; they pressure management to disclose quality information. They found a positive association between the size of the audit committee and financial reporting quality. The second view is that the larger audit committee spends time on unnecessary matters and is not functioning efficiently. Karamanou and Vafeas (2005) argue that larger audit committees are more likely to suffer from diffusion responsibility. Lin et al. (2008) argue that larger audit committees spend their time and effort arguing about trivial matters. This may lead to ineffective decisions-making which impacts on disclosure quality.

Hypothesis 5: There is a positive association between audit committee size and the CSR index.

Director ownership

The association between director ownership and CSR practice can be explained using management enrichment and agency theories (Wang and Hussainey, 2013). There is a negative association between director ownership and CSR practice based on management enrichment theory because it predicts that managers are more likely to maximise their benefit than the firm's long-term value. Agency theory argues that concentrated director ownership may serve to align the directors' interests with those of other shareholders (Jensen and Meckling, 1976).

As a result, firms with more director ownership are likely to provide more CSR information in annual reports. Wang and Hussainey (2013) provide evidence that management enrichment theory is more influential than agency theory about the relationship between director ownership and voluntary disclosure. Consistent with previous empirical evidence, this study expects that a more significant portion of director ownership in a firm is more likely to provide less CSR information in the annual report.

Hypothesis 6: There is a positive association between director ownership and the CSR index.

Institutional ownership

Firms with a high concentration of institutional ownership are highly motivated to disclose information voluntarily to maintain investor confidence (Wang and Hussainey, 2013). Since institutional investors have a substantial ownership stake, knowledge, financial, and information advantage over small shareholders, they have the incentive to monitor CSR practices (Ntim and Soobaroyen, 2013). However, empirical evidence on the association between institutional ownership and CSR practice is mixed. Harjoto and Jo (2011), Jo and Harjoto (2012), and Oh et al. 2001 find a positive association between institutional ownership and CSR practice. On the other hand, Barnea and Rubin (2010) and Ntim and Soobaroyen (2013) find a negative relation between the two variables.

Hypothesis 7: There is a positive association between institutional ownership and the CSR index.

Research Methodology

Research context

The Extant research highlighted that many countries from emerging economies are presented with institutional voids (Chakrabarty and Bass, 2014; Khanna et al., 2005; Mair and Marti, 2009). Most of the listed companies in Sri Lanka are characterised by concentrated ownership and family ownership (Manawaduge, 2012; Senaratne and Gunaratne, 2008; Senaratne and Gunaratne, 2007). Required institutional arrangements for functioning effective corporate governance lack in Sri Lanka due to concentrated corporate ownership (Senaratne and Gunaratne, 2008). The Institute of Chartered Accountants of Sri Lanka and the Sri Lankan Securities and Exchange Commission jointly published the code of best practices on corporate governance in 2008, and a revised code was launched in 2013 and 2017 (Manawaduge, 2012; Nuskiya et al., 2021). The CSE provides the second version of guidance on the CSR disclosure that companies listed on the CSE should consider and disclose. This is a voluntary CSR disclosure arrangement, not a mandatory sustainability performance.

Sample Selection and data

This study uses a sample of 190 non-financial firms on the Colombo Stock Exchange (CSE). Following prior studies by Deng et al. (2013) and Soobaroyen et al. (2022), sixty-two firms belonging to banking, finance, and insurance were excluded from the total sample. Another thirty-three firms are excluded from the entire sample due to the unavailability of corporate governance, financial, and stock market data. Therefore, the final sample of 190 individual firms from 17 non-financial industries for the period from 2012 to 2017 represents 1,140 firm-year observations (Please refer Table 1).

Corporate governance characteristics such as number of directors on board, female director/s on board, independent directors on board, executive chairman of the board, number of directors on the audit committee, director ownership and institutional ownership were hand collected from annual reports which are available at the CSE database, company's website. Control variables are collected using DataStream, Orbis database, and annual reports. Industry classification is collected from the CSE website.

Measurement of variables

CSR disclosure measure: This study implements content analysis to measure CSR practice (Chan et al., 2014; Khan et al., 2013; Ntim and Soobaroyen, 2013; Velayutham and Ratnam, 2022). This study uses a checklist of 24 items under five information sub-categories: community involvement, environmental, employee information, product and service information, and diversity information to construct a CSR index for the Sri Lankan context (Velayutham and Ratnam, 2022). The author gave one if a firm's annual report covers the checklist and zero if the firm's annual report does not contain the information. This decision can be made after reading the annual report (Khan et al., 2013; Velayutham and Ratnam, 2022). The equally weighted index is used to measure the CSR index as all items of information were considered equally important and considered whether a firm discloses an item of CSR information in its annual report. The CSR index is the ratio of the total score for a firm awarded to the maximum score attainable by that firm. This study uses Cronbach's coefficient alpha (Cronbach, 1951) to assess the internal consistency of this study's CSR index. Cronbach's coefficient alpha for the five information categories in this CSR index is 0.852.

Empirical results

Descriptive Statistic Correlation matrix

Table 2 provides the mean and median value of firm characteristics of entire sample firms as well as for two main groups: firms with a score higher than the median and those with a score lower than the median. This table also provides a basic non-

parametric univariate Mann-Whitney (MW) test for the difference in median values across two sub-groups.

Table 1: Sample Selection

Industry	firm-year observations	Percent
Beverage Food and Tobacco	126	11.05
Chemicals and pharmaceuticals	54	4.74
Construction and engineering	24	2.11
Diversified holdings	102	8.95
Footwear and textile	18	1.58
Health care	36	3.16
Hotel and travel	204	17.89
Information Technology	06	0.53
Manufacturing	216	18.95
Motors	36	3.16
Oil palms	30	2.63
Plantation	108	9.47
Power and Energy	48	4.21
Services	48	4.21
Stores supply	24	2.11
Telecommunication	12	1.05
Trading	48	4.21
Total	1,140	100

The average mean board size for the entire sample firms is 7.99 and for the firms with a CSR index higher than the median and firms with a CSR index lower than the median are 8.37 and 7.62 respectively, and the non-parametric test statistics indicate that the difference is significant at the 1% level. It is significantly different between these groups suggesting that the firms with a CSR index higher than the median have larger boards than those with a CSR index lower than the median.

Firms with a score higher than the median have a larger audit committee size suggesting that a more extensive audit committee influences CSR disclosure. Board gender diversity, board independence, and Executive Chairman are not shown any significance between the two groups. As far as ownership is concerned, director ownership appeared to show any difference between the two groups, but institutional ownership shows a significant difference between the groups. Turing to control variables, firm size, profitability, book-to-market ratio, firm age, and firm stock return volatility is

shown a significant difference between the two groups. On the other hand, leverage is not statistically different between the two groups.

Overall, bigger firms with larger board of directors and audit committee, which face lower idiosyncratic risk, more likely to disclose more CSR information in their annual reports.

Table 3 presents the correlation matrix among dependent, independent, and control variables. CSR index is positively correlated with corporate governance factors namely, the board size, board independence, and audit size. On the other hand, board gender diversity and executive chairman are not significantly associated with CSR.

The other variables, directors' ownership is not significantly correlated with CSR but institutional ownership is positively and significantly correlated with CSR reporting.

With regards to controlling variables, firm size, profitability and leverage are positively but significantly correlated with CSR practice, whereas idiosyncratic risk is negatively correlated with the CSR index. The other control variable, book-to-market ratio and firm age are not significantly.

Multivariate regression analysis

This study uses the following panel data regression model:

$$CSR_{it} = \alpha_i + \sum_{j=1}^n \beta_{ji} CGV + \sum_{j=1}^n \beta_{ji} Controls + \varepsilon_{it} \quad (1)$$

Where CSR is the CSR index proxy for CSR disclosure, CGV refers to corporate governance and ownership variables, including board size, board gender diversity, board independence, executive chairman, audit committee size, director ownership, and institutional ownership; controls indicate control variables such as firm size, profitability, leverage, book-to-market ratio, firm age, and stock return volatility and ε refers to the error term.

Pooled OLS, Fixed effect, and random effect

This study begins with estimating the pooled ordinary least squares (OLS) model. Table 4 reports the results of the pooled OLS, fixed effect, and random effect estimators. The board size, executive chairman, and audit size are corporate governance variables that drive the CSR disclosure in the OLS estimator. Since the pooled OLS model ignores all types of specifications, the results obtained by the pooled OLS model may lead to an inaccurate inference. Therefore, this study uses panel data models of fixed and random effects. The F-test is conducted to select the pooled OLS and fixed-effect models.

Table 2: Descriptive Statistics

		All	CSR > Median	CSR < median	MW test
Board size	Mean	7.985	8.373	7.624	5.755***
	Median	8.000	8.000	7.000	
Board gender diversity	Mean	0.067	0.065	0.069	0.905
	Median	0.000	0.000	0.000	
Board independence	Mean	0.379	0.382	0.377	0.249
	Median	0.375	0.375	0.333	
Executive Chairman	Mean	0.487	0.482	0.492	0.743
	Median	0.000	0.000	0.000	
Audit size	Mean	3.028	3.151	2.914	5.521***
	Median	3.000	3.000	3.000	
Director ownership	Mean	0.098	0.094	0.101	0.302
	Median	0.004	0.004	0.003	
Institutional ownership	Mean	0.741	0.761	0.723	4.005***
	Median	0.835	0.857	0.807	
Firm size	Mean	6.586	6.838	6.351	11.225** *
	Median	6.633	6.773	6.394	
Profitability	Mean	0.063	0.087	0.041	7.214***
	Median	0.059	0.070	0.043	
Leverage	Mean	0.077	0.077	0.0778	1.154
	Median	0.034	0.038	0.029	
Book-to-market ratio	Mean	1.019	0.977	1.058	2.100**
	Median	0.999	0.985	1.001	
Firm age	Mean	38.995	42.678	35.561	4.180***
	Median	33.000	35.000	28.000	
Idiosyncratic risk	Mean	0.033	0.029	0.036	9.472***
	Median	0.031	0.026	0.034	

The result of the F-test rejects the null hypothesis indicating that the fixed effect model is far better than the pooled OLS model. In addition, this study conducts the Breusch-Pagan LM test to select between the pooled OLS and random effect models. The result of the Breusch-Pagan LM test rejects the null hypothesis demonstrating that the random effect model is a considerably better model than the pooled OLS model. Finally, this study uses the Hausman test to select between fixed and random effect models. The null hypothesis of the Hausman test is rejected, implying that the fixed effect estimator is a more acceptable estimator among the three estimators.

Table 3: Correlation Matrix

***, **, * correlation is significant at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 CSR index	1.000													
2 Board size	0.187***	1.000												
3 Board gender diversity	-0.048	-0.066**	1.000											
4 Board independence	0.101***	-0.072**	-0.003	1.000										
5 Executive Chairman	-0.002	0.024	0.084***	-0.094***	1.000									
6 Audit size	0.184***	0.315***	-0.062*	0.185***	-0.213***	1.000								
7 Director ownership	-0.043	0.041	0.044	-0.005	0.219***	-0.064**	1.000							
8 Institutional ownership	0.094***	0.050*	-0.147***	0.031	-0.177***	0.178***	-0.575***	1.000						
9 Firm size	0.444***	0.236***	-0.007	0.127***	-0.061**	0.250***	-0.041	0.197***	1.000					
10 Profitability	0.216***	-0.042	-0.009	0.011	-0.130***	0.032	-0.058*	0.065**	0.149***	1.000				
11 Leverage	0.073*	0.083***	-0.052*	0.061**	-0.037	0.150***	-0.012	-0.014	0.194***	-0.249***	1.000			
12 Book-to-market ratio	-0.037	0.027	0.096***	-0.032	0.046	0.059**	0.008	0.091***	0.197***	-0.190***	0.028	1.000		
13 Firm age	0.014	0.025	-0.098**	-0.056*	-0.028	0.021	-0.006	0.063**	0.053*	0.059**	-0.112***	-0.140***	1.000	
14 Idiosyncratic risk	-0.397***	-0.120***	0.004	-0.118***	0.059**	-0.182***	0.006	-0.088***	-0.544***	-0.281***	-0.076**	-0.014	-0.024	1.000

Table 4: Determinants of CSR: Pooled OLS, Fixed effect, and Random effect

	Pooled OLS	Fixed Effect	Random Effect
Constant	-0.213** (0.098)	0.066 (0.224)	-0.763*** (0.199)
Board Size	0.011*** (0.004)	-0.002 (0.003)	0.001 (0.005)
Diversity	-0.095 (0.071)	-0.011 (0.062)	0.010 (0.109)
Independent director	0.082 (0.059)	-0.015 (0.039)	0.011 (0.054)
Executive Chairman	0.036** (0.014)	-0.017 (0.015)	-0.003 (0.026)
Audit Size	0.020* (0.011)	0.015** (0.006)	0.0200* (0.011)
Managerial Ownership	-0.0600 (0.044)	0.069** -0.034	0.046 (0.068)
Institutional Ownership	-0.014 (0.034)	0.023 (0.034)	0.042 (0.032)
Firm Size	0.116*** (0.012)	-0.011 (0.028)	0.128*** (0.031)
Profitability	0.286*** -0.071	0.002 (0.038)	0.018 (0.044)
Leverage	0.026 (0.074)	0.135*** (0.043)	0.132 (0.093)
Book-to-market ratio	-0.052*** (0.017)	-0.006 (0.011)	-0.002 (0.013)
Firm Age	-0.010 (0.010)	0.143*** (0.034)	0.108*** (0.032)
Volatility	-3.484*** (0.626)	-0.317 (0.312)	-0.666* (0.388)
R2	0.269	0.223	0.154
F/Wald chi2	31.860	14.880	78.830
F-test (OLS vs FE)		48.960***	
Breusch-Pagan LM test			2049.230***
Hausman test		63.480***	
N	1140	1140	1140

variables are defined in Appendix 1. Robust standard errors are in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% levels respectively.

Diagnosis tests for panel data

Panel data has repetitive observations over time. The results obtained from the fixed effect are accurate if the estimator is found valid, effective, and usable. The panel data presented with autocorrelation, cross-sectional dependencies, and heteroscedasticity have serious problems for econometric analysis. This study checks different diagnostic tests to see the fixed effect estimator's validity. Table 5 reports the results of the diagnostic tests. The results of the heteroscedasticity, cross-sectional independence, and auto-correlations indicate the presence of heteroscedasticity, cross-sectional independence, and autocorrelations in this panel data set. Though the F-test and Hausman test suggest the fixed effect model is the preferred estimator, the inferences obtained from the fixed effect model are not valid and useable.

Parks (1967) introduces Feasible Generalized Least Squares (FGLS), which efficiently overcome group-wise heteroscedasticity, time-invariant cross-sectional correlation, and serial correlations. Beck and Katz (1995) propose a panel-corrected standard error (PCSE) method to deal with the panel nature of the data. Therefore, FGLS and PCSE effectively correct the problems of heteroscedasticity, serial correlations, and cross-sectional dependencies in the panel data set. However, the FGLS cannot be used in the panel's time dimension is smaller than its cross-sectional dimension (Rodríguez-García and Budría, 2019). Since this study has 6-year periods and 190 cross-sectional firms, the FGLS estimator cannot be used in this study.

Table 5: Diagnostic Tests

Test	Test statistic	P-value	Decision
Modified Wald test for GroupWise heteroskedasticity	1700000***	0.000	There is heteroscedasticity in the panel
Pesaran's test of cross-sectional independence	23.691***	0.000	The cross-sectional dependence exists in the panel.
Wooldridge test for autocorrelation in panel data	344.733***	0.000	The autocorrelation is present in the panel.

***, **, * indicate significance at the 1%, 5% and 10% levels respectively.

In addition to PCSE, this study applies Hoechle's (2007) procedure that produces Driscoll and Kraay's (1998) standard error technique for linear panel models, which are consistent for heteroskedasticity and robust to general forms of cross-sectional dependence. The PCSE and Driscoll and Kraay's estimators account for auto-correlation, cross-sectional dependencies, and heteroscedasticity. Table 6 reports regressions coefficients that explain corporate governance variables impact on CSR disclosure in an emerging market, Sri Lanka.

The dependent variable is the CSR disclosure index calculated using annual reports. Key explanatory variables are firm-level corporate governance variables such as board size, board gender diversity, board independence, CEO duality, audit committee size, director ownership, and institutional ownership.

The size of the audit committee is statistically significant in the PCSE estimator. On the other hand, executive chairman, audit committee size, and managerial ownership drive the CSR disclosure in Driscoll and Kraay's estimators. These results suggest that board size, diversity, independent directors, and institutional shareholding do not affect CSR practice in Sri Lanka in both models.

In line with prior work, this study includes control variables such as firm size, profitability, leverage, book-to-market ratio, firm age, and stock return volatility in our model. This study finds that firm size has a statistically significant positive impact on the CSR disclosure index in both models suggesting that larger firms are more likely to provide CSR information to gain organisational legitimacy.

These results are consistent with the results of Khan et al. (2013) and Lau et al. (2016). On the hand, this analysis documents a negative and statistically significant impact of share price return volatility on CSR, indicating that firm risks are less likely to provide CSR information. In addition, leverage and firm age are statically significant in Driscoll and Kraay's estimators.

The link between corporate governance and CSR reporting firms in Sri Lanka may be affected by prevailing institutional voids. Prior literature suggests that institutional voids are an essential driver of CSR practice (Amaeshi et al., 2016; Jackson and Apostolakou, 2010; Scherer and Palazzo, 2011; Su et al., 2016).

Conclusions and Policy Implications

This study investigates the impact of corporate governance on CSR in an emerging market, Sri Lanka. Institutional theory predicts that the institutional voids impact the effective functioning of board ability; therefore, firms operating under this context would be using different strategies to fill the institutional voids. This study finds that the size of the audit committee is a significant driver of CSR in non-financial companies listed on the CSE and fails to find evidence of the rest of the corporate governance variables, such as board size, board gender diversity, and independent directors.

The main contribution of this study shows that most of the corporate governance variables are not influencing CSR in non-financial listed Sri Lankan firms except the size of the audit committee. Instead, firms operating in this context may engage in CSR to fill the institutional voids. One of the reasons for this is that external institutional mechanisms might fail to support the firms operating in this market. The findings have important implications for corporate regulators, managers, and

polymakers. Since evidence of this study suggests that most of the corporate governance variables fail to influence CSR disclosure, this evidence provides them to reform corporate governance jointly with CSR practice in Sri Lanka.

Table 6: Determinants of CSR: PCSE and Driscoll-Kraay Estimator

	PCSE	Driscoll-Kraay estimator
Constant	-0.434*** (0.099)	-0.8808*** (0.173)
Board Size	0.004 (0.003)	-0.0004 (0.001)
Diversity	-0.043 (0.064)	0.0064 (0.027)
Independent director	0.034 (0.033)	-0.0159 (0.023)
Executive Chairman	0.012 (0.013)	-0.0221*** (0.007)
Audit Size	0.015** (0.007)	0.0163*** (0.002)
Managerial Ownership	0.005 (0.030)	0.0536*** (0.014)
Institutional Ownership	0.015 (0.025)	0.0355 (0.025)
Firm Size	0.140*** (0.011)	0.0650*** (0.015)
Profitability	0.022 (0.058)	0.0021 (0.030)
Leverage	-0.007 (0.064)	0.1276*** (0.044)
Book-to-market ratio	-0.025* (0.013)	0.0033 (0.006)
Firm Age	0.001 (0.014)	0.2718*** (0.040)
Volatility	-0.848* (0.463)	-0.4163*** (0.135)
R2	0.401	0.1853
F/Wald chi2	610.520	50.040
Prob>F	0.000	0.000
N	1140	1140

Further research would be worthwhile to conduct a similar study among Sri Lankan private firms. This study excludes financial firms listed on the CSE for the studied periods; therefore, further research may concentrate on financial firms that could provide different findings in this context. This study may be subject to some limitations.

The CSR index is mainly collected from the company's annual report. A checklist of 24 CSR disclosure attributes is considered to measure the CSR in this study, but other CSR disclosure attributes are available in the existing literature that is ignored in this study. This study uses content analysis to measure the CSR index, which heavily dependent on the researcher's judgment associated with the coding process that may impact the results.

Dr. Eswaran Velayutham is working at the School of Business, University of Southern Queensland, Australia. His research interests include corporate social responsibility, carbon finance, corporate governance, earnings management, corruption risks, capital market liquidity, asset pricing, and renewable energy. He has published a significant number of research papers in outlets such as Pacific-Basin Finance Journal, Journal of Contemporary Accounting and Economics, Australian Journal of Management, International Review of Economics & Finance, Singapore Economic Review, International Journal of Accounting and Business Finance, Social Responsibility Journal, Renewable Energy, BMC Public Health, Energy Report, Sustainability, Energy Strategy Reviews and PLoS ONE.

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Appendix I: Variable definition

Variable	Definition
<i>CSR index</i>	CSR is a corporate social responsibility index measured as an index.
<i>Board Size</i>	Board size is the number of directors on the board.
<i>Diversity</i>	Board gender diversity is the percentage of woman directors on the board.
<i>Independent director</i>	Board independence is measured as the proportion of independent directors on the board.
<i>Executive Chairman</i>	The executive chairman is an indicator variable that equals one if the chairman of the board is an executive director.
<i>Audit Size</i>	Audit size is calculated as the number of directors on an audit committee of a firm.
<i>Managerial Ownership</i>	Director ownership is the proportion of shares held by the directors.
<i>Institutional Ownership</i>	Institutional ownership is the proportion of shares owned by institutional investors.
<i>Firm Size</i>	Firm size is the logarithm of total assets
<i>Profitability</i>	Profitability is measured as net profit for the firm divided by total assets.
<i>Leverage</i>	Leverage is the sum of long-term debts divided by total assets.
<i>Book-to-market ratio</i>	The book-to-market ratio is defined as the book value of total assets to the market value of total assets.
<i>Firm Age</i>	Firm age is the logarithm of firm age from its listing date.
<i>Volatility</i>	The standard deviation of share return.