

RESEARCH ARTICLE

Determinants of environmental, social and governance disclosures of top 100 Standard and Poor's Bombay Stock Exchange firms listed in India

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Abstract: Corporate sustainability practices have become a proxy for a better management culture and good governance. As a result, environmental, social, and governance (ESG) disclosures are considered significant factors in the value creation procedures of the organisations. However, definitive guidelines on ESG reporting are still missing. Motivated by this research gap, the present study explores the types of industry-specific and firm-specific characteristics that motivate organisations to report on their ESG activities by utilizing a sample of top 100 Indian Standard and Poor's Bombay stock exchange, (S&P BSE) firms for the period 2015-2019. Based on the multivariate-regression analysis, the findings of this examination indicate that the size of the firm, cross border listing, and the industry play a crucial role in defining a firm reporting on ESG parameters. However, the current study did not find any evidence to support that a firm's book to market Value (BTMV), leverage, growth, age, Returns on the Capital Employed (ROCE), and ownership affect the ESG disclosures. But the Indian firms started emphasising the process of replacing their profit-maximising goals with sustainable ESG goals.

Keywords: Environmental, social and governance, corporate sustainability, reporting, India, S&P BSE 100

INTRODUCTION

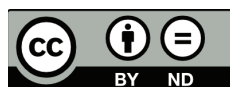
Corporate sustainability disclosures have emerged as a major trend over the last few years (Galbreath, 2013; Brooks & Oikonomou, 2018) as part of management culture and behaviour focused on good governance. It reveals the tone from the top through the Board and management team. A terminology represents a series

of concepts such as socially responsible investment (Statman, 2008; Abramson & Chung, 2000), ethical investment (Mackenzie & Lewis, 1999; Schwartz, 2003), social investment (Cox *et al.*, 2007), responsible investment (Dembinski *et al.*, 2003; Thamotheram & Wildsmith, 2007; Viviers *et al.*, 2009), and sustainable investment (Koellner *et al.*, 2007; Weber, 2005) to illustrate corporate sustainability in management literature.

Sustainability practices are generally meant to focus on how organisations handle their ESG dangers, which is especially significant for developing markets such as India (Economic Times, 2019). Moreover, firms throughout the world are facing national and international pressure from their stakeholders to disclose their sustainability activities (Luo *et al.*, 2013; Dang *et al.*, 2018; Kumar & Firoz, 2019b). As a result, the firms are shifting their profits maximising goals to sustainable ESG goals for their long-term survival in the market (Zhao *et al.*, 2018). So, corporate sustainability disclosures are increasingly becoming significant in the worth creation procedures of the organisations, but we do not have any definitive guidelines as to how to disclose and report our ESG practices.

Further, the impact of the corporate sustainability of a firm on its performance may remain a matter of threat to certain stakeholders (Al-Tuwaijri *et al.*, 2004; Clarkson *et al.*, 2008; Saka & Oshika, 2014; Kumar & Firoz, 2018c). Consequently, investors need to depend on

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voluntary reporting, to produce high-accuracy analyses of the ESG activities of a business (Bauer & Hann, 2010; Orens *et al.*, 2010; Chaklader & Gulati, 2015; Kumar & Firoz, 2020). Apart from their stakeholders' pressure, companies throughout the world are themselves becoming increasingly concerned about their ESG disclosures. Some of the buzzwords at the international management and trade forums become more popular with the emergence of ESG reporting such as corporate social responsibility, sustainability, occupational health, sustainable supply chain, environmental impact assessment, energy efficiency, employee safety, and ethical labour practices. With this particular foundation, this article is endeavouring to investigate the possible determinants of an environmental, social and governance (ESG) disclosure model.

The previous ESG literature from developed nations provides reasons for a firm's willingness to unveil its ESG disclosures intentionally. However, relatively, only a little research has been done about rising economies (Röhrbein, 2012). So, the social, political, biological, and financial conditions of India are the critical factors that compel us to contemplate the determinants of ESG reporting. Apart from the previous literature, we focus on India, one of the fastest emerging economies today, which does not have any definitive guidelines as to how to disclose and report its ESG practices within its financial statements (Kumar & Firoz, 2018d). However, in the course of recent decades, a large body of research has seen an expansion in the demand for the disclosure of the ESG activities of the organisations, along with their potential inability to conform to ecological, social and administrative guidelines and their potential obligation to satisfy ESG remediation requirements (Kumar & Firoz, 2018b). So, to achieve some fruitful insights into the possibility of integrating relevant ESG practices into the financial statements, the next frontier for thinking about how the industry-specific and firm-specific characteristics motivate firms to disclose their ESG activities voluntarily, we extended the previous social and environmental accounting literature on 100 Indian S&P BSE firms. Finally, the study provides managers and other stakeholders with important ESG implications concerned with the long-term survival of an enterprise.

The present investigation embraces a sample of 100 top Indian S&P BSE firms for the period 2015-2019. The ESG disclosure score provided by the Bloomberg database is used as a proxy for the extent of their ESG disclosures. The results of the multivariate-regression analysis indicate that the size, the cross-border listing, and the industry of a firm play a crucial role in defining

its choice of an ESG reporting policy. However, the current study does not present any proof that a firm's BTMV, leverage, growth, age, ROCE and ownership affect its voluntary choice to report on its ESG activities voluntarily. Moreover, the findings of this investigation also revealed that the firms concerned are shifting their profits maximising goals to sustainable ESG goals for their long-term survival in the market.

The article proceeds as follows: the literature review section covers the recent studies on ESG, the research methodology section explains the procedure followed to test our hypotheses. Our empirical findings are discussed in the data analysis section, and the conclusion consists of recommendations for future consideration.

THEORETICAL BACKGROUND AND LITERATURE REVIEW

At both national and international levels, ESG reporting in many firms is still at an infant stage (Giannarakis *et al.*, 2014). Therefore, this study uses the agency theory (Ross, 1973 and Jensen & Meckling, 1976 cited by Abeywardana and Panditharathna 2016) developed in formulating a working hypothesis of why firms ought to unveil information. As per the agency hypothesis, timely divulgence of such information by the organisations will reduce the information asymmetry between the external stakeholders and the management (Easley & O'hara, 2004), in general. The management acts as an agent for the investors and is expected to act in the best interest of the investors. It should inform the investors of the ESG situation through legitimate divulgements, otherwise, the shortfall of which would build excessive organisation costs and auditing costs (Charumathi & Ramesh, 2015). In this way, it is hypothesised that most unnecessary agency costs depend on imperfect information accessibility that dissatisfies the investors and prevents them from making appropriate choices. Therefore, strength deliberate divulgence is considered to diminish the overall agency cost. Thus, the agency hypothesis is used here, to build a theoretical basis for this study.

However, Velde *et al.* (2005) argue that high sustainability-based stocks have superior corporate financial performance (CFP) than low-rated stocks. Similarly, Fatemi *et al.*, (2018) report that sustainability exposures are directly connected with a firm's worth. Consequently, the organisations are forced to implement sound ESG disclosures for natural and social cost estimation to enhance a firm's value (Petcharat & Mula, 2012). Even the previous environmental disclosure

studies have given several explanations for a firm's willingness to report its ESG practices voluntarily. For instance, Pedwell *et al.* (1994) based on an analysis of the annual reports 1982-1991 of 33 Canadian public companies reveal that, except for the debt-equity ratio, criticism from regulators and environmentalists are significantly associated with profit, social attention, corporate social disclosure, size, and environmental disclosure levels.

In a later study, Brammer & Millington (2008) explore various factors that encourage companies to voluntarily disclose their climatic actions and measure their impact on the quality of the disclosures made by 450 UK firms listed on the Financial Times Stock Exchange Group (FTSE) All-Share Index in the year 2000. This analysis finds that the large firms with dispersed ownership and low debt are bound to unveil and that quality reporting is significantly and positively correlated to a firm's size and environmental performance. In the same manner, Hossain *et al.* (2006) attempt to measure the level of social and environmental disclosure of the organisations listed on the Dhaka Stock Exchange (DSE) in Bangladesh. Their investigation indicates that the corporate social and ecological divulgence levels are positively associated with the nature of the industry, the presence of debenture, and the net profit margin. Moreover, Reid & Toffel (2009) investigate 524 organisations from 2006 to 2007. Their findings recommend that the shareholder resolution directly or indirectly (spillover effect) affects the disclosure practices followed by a firm. This study also strongly advocates that the jurisdiction of the state in which the firm is situated has a great influence on its disclosure practices disregarding the stature of the regulation targeted at a specific industry.

In the same vein, the study carried out by Tang & Lan (2013) that covered 2,045 large firms from 15 countries reveals that in developing countries, the carbon disclosure propensity is significantly and positively correlated with resource availability proxy. Further, Chatterjee *et al.* (2008) point out after a study of the top 100 A-share-issuing companies, that the nature and size of the industrial sector concerned are significantly related to greenhouse gas reporting but other variables like profitability and overseas listing are insignificant in predicting the reporting levels. They also reveal that government-owned companies provide lesser greenhouse gas information than their counterparts in the private sector. In the same manner, Singhania & Gandhi's (2015) investigation of 41 financial and non-financial companies from the Nifty 50 index for the year 2011-12, reveals that location, number of lines of the business, sales turnover

and administrative expenses, firm age, leverage, and employee cost are significantly affected by the social and environmental disclosure. Subsequently, Yunus *et al.* (2016) analyse 200 Australian organisations indexed on the Australian Stock Exchange for 2008-2012 and find that the firms with environmental management system (EMS), environmental committee (EC), bigger Board sizes, greater Board independence, larger firms and leveraged firms are more inclined to adopt sustainability management strategies.

Nurhayati *et al.* (2016), using a sample of 100 Indian textile and apparel (TA) firms from the Bombay Stock Exchange (BSE) list 2010, depict the organisations' size, audit panel, and branding significantly affect the social and environmental disclosure. Most importantly, Tarmuji *et al.* (2016), who studied 35 Malaysian and 45 Singaporean companies over the period 2010-2014, report that environmental performance similarly influences the economic performance of the companies in both countries, but the social and governance criteria positively and significantly affect the economic performance in Malaysia only.

Moreover, Kumar & Firoz (2022) confirm that better ESG disclosure practices positively and significantly affect CFP and that there is a positive relationship between the ESG disclosure scores and CFP as well as the individual ESG factor scores except for social disclosures. Better ESG disclosures, thus help the companies to improve their CFP and create a good image, credibility, and promote corporate ethical practices. Moreover, all eight regression models used in this study help establish that statistically speaking, an organisations leverage and growth is positively and significantly linked with the CFP.

Based on the above discussions, it is therefore, hypothesised that:

H1: The organisations' size is positively connected with ESG disclosures.

H2: The organisations' Book to Market Value (BTMV) is positively connected with ESG disclosures.

H3: The organisations' cross-border listing is positively connected with ESG disclosures.

H4: The organisations' leverage is positively connected with ESG disclosures.

H5: The organisations' growth is positively connected with ESG disclosures.

H6: The organisations’ age is positively connected with ESG disclosures.

H7: The organisations’ industry sector is positively connected with ESG disclosures.

H8: The organisations’ ownership is positively connected with ESG disclosures.

H9: The organisations’ ROCE is positively connected with ESG disclosures.

MODEL SPECIFICATION AND RESEARCH METHODOLOGY

Research objectives

Corporate sustainability practices have now become a proxy for management culture and good governance. As a result, environmental, social and governance (ESG) disclosures are increasingly attracting significance in the worth creation procedures of the organisations, but

there are no definitive guidelines as to how to disclose and report ESG practices. The current study attempted therefore to discover the types of industry-specific and firm-specific characteristics that motivate firms to report on their ESG activities.

Sources of data collection and sample

Initially, the sample used in this study covered 100 top S&P BSE Indian firms, but later 23 firms were excluded from financial ventures because their administrative requirements or strategic approaches and listing prerequisites vary from other industries (Hossain *et al.*, 1995; Schultz *et al.*, 2010; Nguyen *et al.*, 2014). Finally, 77 corporations were chosen for analysis (Appendix I) for the period 2015-2019. We selected this period on two grounds: the Indian corporations commenced reporting ESG information on the Bloomberg Terminal database in 2015; the ESG disclosure scores were available only up to 2019. It is important to note that the 77 sample firms belong to 27 sub-activity sectors (sample industry composition) reported in Figure 1.

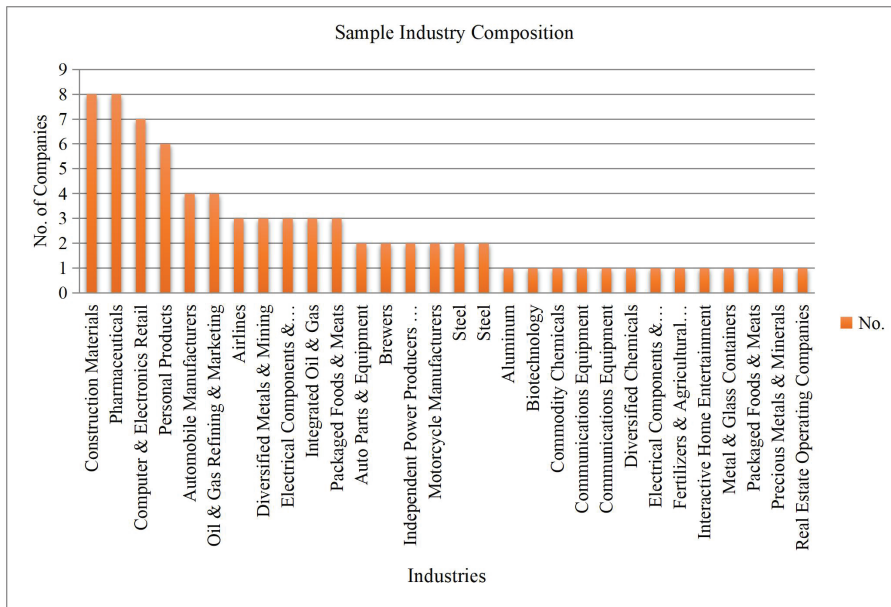


Figure 1: Sample industry composition

We collected the financial data related to the variables used under this analysis from the Prowess Centre for Monitoring Indian Economy (PCMIE) and Capitaline database (Table 1). Moreover, the scores related to ESG disclosure were fetched from the Bloomberg terminal.

$$\begin{aligned} & \alpha_3 \text{CROSS BORDER LISTING}_{ti} + \alpha_4 \text{LEVERAGE}_{ti} \\ & + \alpha_5 \text{GROWTH}_{ti} + \\ & \alpha_6 \text{AGE}_{ti} + \alpha_7 \text{INDUSTRY}_{ti} + \alpha_8 \text{OWNERSHIP}_{ti} + \\ & \alpha_9 \text{ROCE}_{ti} + \epsilon_t \end{aligned} \quad (1)$$

Econometric model and the variables under study

The current study was conducted using the multivariate-regression analysis, to develop an econometric model to assess the determinants of ESG. The general type of the multivariate model used here is as follows:

$$\text{ESGDISCLOSURE}_{ti} = \alpha_0 \text{INTERCEPT}_{ti} + \alpha_1 \text{SIZE}_{ti} + \alpha_2 \text{BTMV}_{ti} +$$

where, ESG disclosure is a dependent variable, the Bloomberg Terminal database assigns the overall scores to each sample company. The five-year average ESG scores of each sample firm are also reported in Figure 2. In addition, Figure 1 depicts the sample industrial composition and the rest of the control variables are explained in Table 2.

Table 1: Secondary databases

Database	Description	Website
Bloomberg	Bloomberg terminal is a financial database of Bloomberg L.P. It provides real-time market data of trading, news articles, share prices <i>etc.</i>	https://www.bloomberg.com/professional/
Prowess	It stores business information that is useful for different stakeholders. It is India’s largest database which stores household incomes, the pattern of spending and savings <i>etc.</i>	https://prowessiq.cmie.com/
Capitaline	Capitaline covers financial and non-financial data, such as stock price of around 9500 firms updated every day guaranteeing the most recent financial information.	https://www.capitaline.com/SiteFrame.aspx?id=1

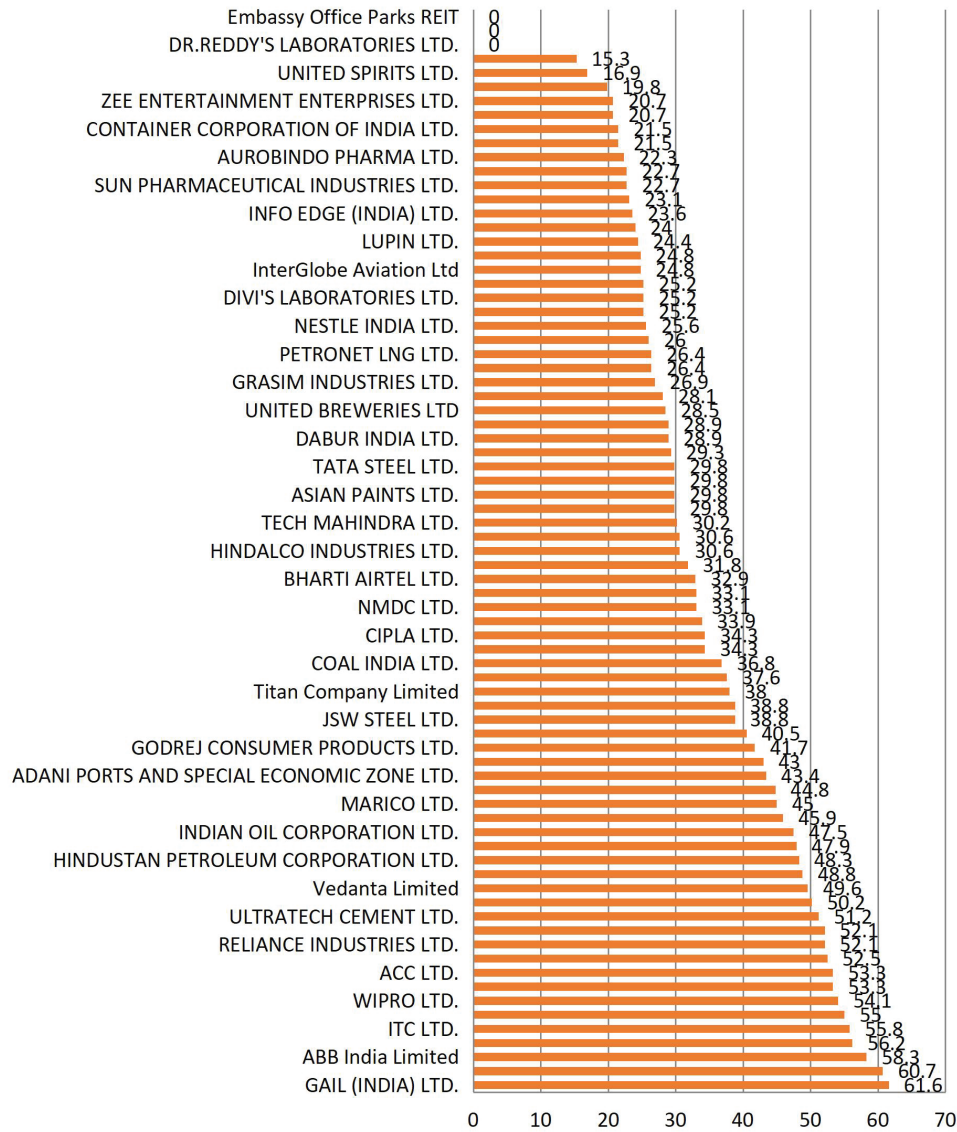


Figure 2: ESG Scores of sample firms

DATA ANALYSIS AND INTERPRETATIONS

The sample organisations' description

The descriptive measurements of the organisations concerned are depicted in Table 4. The ESG disclosure scores provided by the Bloomberg database are used as a proxy for determining the extent of the ESG disclosures, which is used as a dependent variable under this study. The mean value of ESG is 35.76, which indicates that voluntary ESG disclosure during the sample period is

moderate. These findings portray that the ESG disclosure mechanism in India is still at an early stage (Giannarakis *et al.*, 2014).

The lowest estimation of the ESG is 15.30 which shows that a couple of organisation report very low ESG data. Moreover, the highest disclosure score is 61.60, which shows that some organisations give sensible ESG data. The table further shows that the standard deviation estimation of the ESG is 12.28, which means a low scattering in ESG perceptions.

Table 2: Description of variables under study

Variables	Expected sign	Descriptions
ESG disclosers	Dependent variables	Actual ESG scores (Kumar & Firoz, 2022).
Size	+	The proxy for the size of a firm is obtained by taking the natural logarithm of its total assets (Demsetz & Lehn, 1985; Gulati, 1995; Hackston & Milne, 1996; McWilliams & Siegel, 2001; Black <i>et al.</i> , 2006; El Ghouli <i>et al.</i> , 2011; Ioannou & Serafeim 2012; Matsumura <i>et al.</i> , 2014; Kumar & Firoz, 2017b).
Leverage	-	Leverage is estimated by total obligations separated by total resources (Myers & Majluf, 1984; Waddock & Graves, 1997; Orlitzky <i>et al.</i> , 2003; Black <i>et al.</i> , 2006; Ioannou & Serafeim, 2012; Kumar & Firoz, 2018a).
BTMV	+	The BTMV is used to control the firm's growth, which is estimated as the organisation's book value over its market worth (Li <i>et al.</i> , 2014; Kumar & Firoz, 2018b).
Cross Border Listing	+	It shows the listing of a company in the stock exchanges of foreign capital markets. It is used as a dummy variable (Kumar & Firoz, 2019b).
Age	+	The age of a firm is used to control for the effect of a company's lifecycle on firm value (Drobtz, Schillhofer & Zimmermann, 2004; Black <i>et al.</i> , 2006; Mishra, 2017; Kumar & Firoz, 2019b).
Growth	+	It is estimated by the percentage of changes in the sales level from year t-1 to year t (Wasiuzzaman, 2019).
Ownership	+	This shows whether the sample company is public or private. It is used as a dummy variable (Kumar & Firoz, 2018b).
Industry sector	+	An industry is categorised according to the 8-digit code of the global industry classification standard (GICS, Table 3) (Noh, 2017; Kumar & Firoz, 2018b).
ROCE	+	ROCE measures the amount of profit generated by a firm on the total amount of shareholder's equity (Hart & Ahuja, 1996; Haniffa & Cooke, 2005; Wagner <i>et al.</i> , 2002; Russo & Fouts, 1997; Shen & Chang, 2009; Kumar & Firoz, 2019b).
ϵ_t	?	Error Term

Source: Noh, 2017; Kumar & Firoz, 2018b

The mean of ROCE is 25.22 per cent shows that the organisations are profitable and have a decent return for their capital, though the standard deviation of ROCE is 18.20 per cent. The greatest and the lowest estimations of ROCE are 96.65 per cent and 1.15 per cent respectively, which is significantly different from each other. These measurements demonstrate that the organisations under analysis comprise certain organisations with excellent financial performance and some yet to produce a satisfactory profit for their capital.

The mean size 863995.7 demonstrates that the organisations covered under this examination are enormous. The mean of the leverage portrayed in Table 4 is 0.32, which is moderate and portrays that the organisations covered in the examination use lower levels of debt in their capital structure. The maximum value of age is 191 years, which shows that India is having a long corporate history. More specifically, the descriptive insights for independent variables show that the organisations covered in this examination are huge and have growth opportunities and fewer risks.

Table 3: GICS Classification of Industries

Industry	Code	Number of companies
Airlines	20302010	3
Aluminium	15104010	1
Auto Parts & Equipment	25101010	2
Automobile Manufacturers	25102010	4
Biotechnology	35201010	1
Brewers	30201010	2
Commodity Chemicals	15101010	1
Communication Equipment	45201020	1
Computer & Electronics Retail	25504020	7
Construction Materials	15102010	8
Diversified Chemicals	15101020	1
Diversified Metals & Mining	15104020	3
Electrical Components & Equipment	20104010	3
Electrical Components & Equipment	20104010	1
Fertilizers & Agricultural Chemicals	15101030	1
Independent Power Producers & Energy	55105010	2
Integrated Oil & Gas	10102010	3
Interactive Home Entertainment	50202020	1
Metal & Glass Containers	15103010	1
Motorcycle Manufacturers	25102020	2
Oil & Gas Refining & Marketing	10102030	4
Packaged Foods & Meats	30202030	3
Personal Products	30302010	6
Pharmaceuticals	35202010	8
Precious Metals & Minerals	15104040	1
Real Estate Operating Companies	60102020	1
Steel	15104050	2
Others	40201020	4
Total		77

Table 4: Descriptive measurements

Variables	N	Minimum	Maximum	Mean	Std. Deviation
ESG Disclosure	385	15.30	61.60	35.76	12.28
ROCE	385	1.15	96.65	25.22	18.20
Size	385	27.85	863995.7	95514.67	134534.9
Leverage	385	0.00	2.56	0.32	0.52
BTMV	385	0.00	0.08	0.01	0.01
Age	385	10	191	47.79	29.29
Growth	385	-4.10	136.08	17.76	17.79
Cross Boarder Listing	385	0	1	0.1683	0.3744
Ownership	385	0	1	0.1400	0.35

Correlation analysis

An earlier condition to apply multivariate regression is to check the multicollinearity among independent variables (Gujarati & Porter, 2009). The correlation grid among the variables of the examination is introduced in Table 5. Severe multicollinearity may create misdirecting coefficients. The past studies recommend various

ESG disclosure model

Table 6 depicts that the ANOVA value is significant at the one per cent level, which indicates that the regression model predicts the dependent variable statistically well. Here, *p* value = 0.000, which is less than 0.05 and shows that, overall, the regression equation statistically significantly predicts the ESG disclosures.

Table 5: Correlation lattice

Variables	1	2	3	4	5	6	7	8	9
ESG	1	.299*	-0.002	-0.096	-.239*	-0.031	-.251*	0.162	-.384**
Size		1	0.085	-.272*	-.358**	-0.165	-0.118	0.138	-0.068
Leverage			1	.306**	-.378**	-0.177	.305**	.238*	0.046
BTMV				1	0.007	-0.066	.590**	-0.139	-0.038
ROCE					1	0.155	0.086	-0.07	0.04
Age						1	-0.152	-0.035	-0.133
Growth							1	-.246*	0.029
Ownership								1	-0.157
Industry									1

measures to deal with the issue of multicollinearity. Hair *et al.* (1998) propose that relationship coefficients underneath 0.9 may not cause genuine multicollinearity issues, while Kennedy (2003) contends the value underneath 0.8 shows no serious multicollinearity. The correlation lattice (Table 5) depicts that the correlation coefficient values are beneath this value, so there is no issue of multicollinearity.

Further, Table 6 gives the findings of the ESG Model. Along with some earlier work (Espinosa & Trombetta, 2007; Chithambo & Tauringana, 2014; Lee, 2017), the coefficient for the size is positively and significantly related to ESG (*p*-value < 1 per cent). These discoveries demonstrate that bigger firms are more likely to report their ESG exercises than smaller firms. These discoveries are consistent with our H1. However, the coefficient of

Table 6: ESG disclosures model

Variables	Coefficients	<i>p</i> -value
Intercept	-22.0598	0.29
Size	13.1669	0.00*
BTMV	151.4004	0.21
Cross Border Listing	7.8003	0.02**
Leverage	-1.9038	0.59
Growth	0.0315	0.80
Age	0.0145	0.78
Industry	-2.4504	0.04**
Ownership	5.3482	0.18
ROCE	-0.1494	0.14
Adjusted R Square	0.3253	

The significance levels are given by: * = *p* < 0.01, ** = *p* < 0.05, *** = *p* < 0.10.

the BTMV is positive but not statistically significantly related to the ESG (p -value > 5 per cent). These findings rejected our H2 that there is a positive linkage between BTMV and ESG disclosures. Further, the results of the ESG model reveal that Cross Border Listing (CBL) is fundamentally and significantly associated with the ESG at the 5 per cent level (p -value < 5 per cent). These findings confirm our H3, that firms listed abroad tend to voluntarily report more on their ESG activities than domestic firms.

The coefficient of ownership is also not statistically significantly related to the ESG (p -value > 5 per cent). In line with the earlier investigations (Brammer & Millington, 2008; Reid & Toffel, 2009; Hrasky, 2012; Chapple *et al.*, 2013), Table 6 gives evidence of factually significant outcomes (p -value < 5 per cent) of industry in the inclination to make ESG disclosures. These outcomes confirm our H7 that the industry in which a firm is operating has a significant impact on the ESG reporting. However, the current examination did not find any evidence to support that a firm's leverage, growth, age and profitability affect ESG reporting.

CONCLUSION

This paper examines the determinants of social, corporate and governance (ESG) reporting. The present investigation was conducted using a sample of the top 100 Indian S&P BSE firms for the period 2015-2019. The results of the multivariate-regression analysis indicate that a firm's size, the cross-border listing and the industry play a crucial role in defining a firm's choice of ESG reporting policy. However, the current study did not discover any proof to support that a firm's BTMV, leverage, growth, age, ROCE and ownership affect their choice to voluntarily report on ESG activities. Moreover, the findings of this investigation by study also revealed that the firms are shifting their profit maximising goals to sustainable ESG goals for their long-term survival in the market.

This examination shows that the voluntary ESG disclosure during the sample period is moderate. These findings portray that ESG disclosure is still at an early stage (Giannarakis *et al.*, 2014; Kumar & Firoz, 2019a). However, ESG disclosures are increasingly becoming significant in the worth creation procedures of the organisations, but we do not have any definitive guidelines as to how to disclose and report ESG practices (Kumar & Firoz, 2017a). Consequently, the investors need to depend on voluntary reporting to better the analysis of the businesses' ESG activities. As a result, the organisations are forced to implement sound ESG

disclosures for environmental, natural and social cost estimation to enhance firms' value (Petcharat & Mula, 2012; Kumar & Firoz, 2019b).

At long last, we propose that the ESG reporting ought to be encouraged by the relevant Indian organisations to maintain a strategic distance from the potential danger of information deviation regarding all investors (Easley & O'Hara, 2004). This will likewise assist the organisations by improving their monetary execution and make a decent picture of credibility, and promoting corporate ethical exercises (Kumar & Firoz, 2019a). In this way, further research is needed to acquire knowledge about the issues discovered in by this study. Another exploration covering foreign nations can be embraced.

REFERENCES

- Abeywardana, N. & Panditharathna, K. (2016) The extent and determinants of voluntary disclosures in annual reports: evidence from banking and finance companies in Sri Lanka. *Accounting and Finance Research*, 5(4), p.147-162. DOI: <https://doi.org/10.5430/afr.v5n4p147>
- Abramson, L. & Chung, D. (2000) Socially responsible investing: Viable for value investors? *The Journal of Investing*, 9(3), p.73-80. DOI:10.3905/joi.2000.319381
- Al-Tuwaijri, S.A., Christensen, T.E. & Hughes, Ii, K.E. (2004) The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equations approach. *Accounting, Organisations and Society*, 29(5-6), p.447-471. DOI: [https://doi.org/10.1016/S0361-3682\(03\)00032-1](https://doi.org/10.1016/S0361-3682(03)00032-1)
- Bauer, R. & Hann, D. (2010) Corporate environmental management and credit risk. *Available at SSRN 1660470*.
- Black, B.S., Jang, H. & Kim, W. (2006) Does corporate governance predict firms' market values? Evidence from Korea. *The Journal of Law, Economics, and Organisation*, 22(2), p.366-413. DOI:10.1093/jleo/ewj018
- Brammer, S. & Millington, A. (2008) Does it pay to be different? An analysis of the relationship between corporate social and financial performance. *Strategic Management Journal*, 29(12), p.1325-1343. DOI:10.1002/smj.714
- Brooks, C. & Oikonomou, I. (2018) The effects of environmental, social and governance disclosures and performance on firm value: A review of the literature in accounting and finance. *The British Accounting Review*, 50(1), p.1-15. DOI: <https://doi.org/10.1016/j.bar.2017.11.005>
- Chaklader, B. & Gulati, P.A. (2015) A study of corporate environmental disclosure practices of companies doing business in India. *Global Business Review*, 16(2), p.321-335. DOI: <https://doi.org/10.1177/0972150914564430>

- Chapple, L., Clarkson, P.M. & Gold, D.L. (2013) The cost of carbon: Capital market effects of the proposed emission trading scheme (ETS). *Abacus*, 49(1), p. 1-33.
DOI: <https://doi.org/10.1111/abac.12006>
- Chatterjee, B., Mir, M.Z. & Al Farooque, O. (2008) The current status of related party disclosure in India: A longitudinal analysis. *Accounting in Emerging Economics*, 9, p.287-319.
DOI:10.1108/S1479-3563(2009)0000009013
- Chithambo, L. & Tauringana, V. (2014) Company specific determinants of greenhouse gases disclosures. *Journal of Applied Accounting Research*. 15(3), p. 323-338. DOI: 10.1108/JAAR-11-2013-0087
- Charumathi, B. & Ramesh, L. (2015) On the determinants of voluntary disclosure by Indian companies. *Asia-Pacific Journal of Management Research and Innovation*, 11(2), p.108-116.
DOI:1177/2319510X15576179
- Clarkson, P.M., Li, Y., Richardson, G.D. & Vasvari, F.P. (2008) Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organisations and Society*, 33(4-5), p.303-327.
DOI: <https://doi.org/10.1016/j.aos.2007.05.003>
- Cox, P., Brammer, S. & Millington, A. (2007) Pension fund manager tournaments and attitudes towards corporate characteristics. *Journal of Business Finance & Accounting*, 34(7-8), p.1307-1326.
DOI: <https://doi.org/10.1111/j.1468-5957.2007.02037.x>
- Dang, R., Bruna, M.G., Houanti, H. & Manita, R. (2018) *Board gender diversity and ESG disclosure: Evidence from the US* (No. hal-01847924).
DOI:<https://doi.org/10.1108/JAAR-01-2017-0024>
- Dembinski, P.H., Bonvin, J.M., Dommen, E. & Monnet, F.M. (2003) The ethical foundations of responsible investment. *Journal of Business Ethics*, 48(2), p.203-213.
DOI:10.1023/B:BUSI.0000004598.89426.d8
- Demsetz, H. & Lehn, K. (1985) The structure of corporate ownership: Causes and consequences. *Journal of Political Economy*, 93(6), p. 1155-1177.
DOI: <https://doi.org/10.1086/261354>
- Easley, D. & O'hara, M. (2004) Information and the cost of capital. *The Journal of Finance*, 59(4), p.1553-1583.
DOI:<https://doi.org/10.1111/j.1540-6261.2004.00672.x>
- Economic Times, Feb 11, 2019. Why India is turning into ESG funding hotspot. Available from: <https://EconomicTimes.Indiatimes.Com/Markets/Stocks/News/Why-India-Is-Turning-Into-Esg-Funding-Hotspot/Articleshow/67938722.Cms>
- El Ghoul, S., Guedhami, O., Kwok, C.C. & Mishra, D.R. (2011) Does corporate social responsibility affect the cost of capital?. *Journal of Banking & Finance*, 35(9), p.2388-2406.
DOI: <https://doi.org/10.1016/j.jbankfin.2011.02.007>
- Espinosa, M. & Trombetta, M. (2007) Disclosure interactions and the cost of equity capital: evidence from the Spanish continuous market. *Journal of Business Finance & Accounting*, 34(9-10), p.1371-1392.
DOI: <https://doi.org/10.1111/j.1468-5957.2007.02064.x>
- Fatemi, A., Glaum, M. & Kaiser, S. (2018) ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal*, 38, p.45-64.
DOI: <https://doi.org/10.1016/j.gfj.2017.03.001>
- Galbreath, J. (2013) ESG in focus: The Australian evidence. *Journal of Business Ethics*, 118(3), p.529-541.
DOI: 10.1007/s10551-012-1607-9
- Giannarakis, G., Konteos, G. & Sariannidis, N. (2014) Financial, governance and environmental determinants of corporate social responsible disclosure. *Management Decision*.
DOI: <https://doi.org/10.1108/MD-05-2014-0296>
- Gujarati, D.N. & Porter, D. (2009) *Basic Econometrics* Mc Graw-Hill International Edition.
- Gulati, R. (1995) Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances. *Academy of Management Journal*, 38(1), p.85-112.
DOI: [org/10.2307/256729](https://doi.org/10.2307/256729)
- Hackston, D. & Milne, M.J. (1996) Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, Auditing & Accountability Journal*. 9(1), p.77-108.
DOI: <https://doi.org/10.1108/09513579610109987>
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998) *Multivariate Data Analysis*, 5(3), p.207-219.
- Haniffa, R.M. & Cooke, T.E. (2005) The impact of culture and governance on corporate social reporting. *Journal of Accounting and Public Policy*, 24(5), p.391-430.
DOI: <https://doi.org/10.1016/j.jaccpubpol.2005.06.001>
- Hart, S.L. & Ahuja, G. (1996) Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business Strategy and the Environment*, 5(1), p.30-37.
DOI: <https://doi.org/10.1002>
- Hossain, M., Islam, K. & Andrew, J. (2006) Corporate social and environmental disclosure in developing countries: Evidence from Bangladesh. [Online]. Available from: <http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1194&context=commpapers>. Last accessed on 20 October 2021.

- Hossain, M., Perera, M.H.B. & Rahman, A.R. (1995) Voluntary disclosure in the annual reports of New Zealand companies. *Journal of International Financial Management & Accounting*, 6(1), p.69-87.
DOI: <https://doi.org/10.1111/j.1467-646X.1995.tb00050.x>
- Hrasky, S. (2012) Carbon footprints and legitimization strategies: symbolism or action?. *Accounting, Auditing & Accountability Journal*, 25(1), p.174-198.
DOI: <https://doi.org/10.1108/09513571211191798>
- Ioannou, I. & Serafeim, G. (2012) What drives corporate social performance? The role of nation-level institutions. *Journal of International Business Studies*, 43(9), p.834-864.
DOI: <https://doi.org/10.1057/jibs.2012.26>
- Kennedy, P. (2003) A guide to econometrics. MIT press.
- Kumar, P. & Firoz, M. (2022) Does Accounting-based Financial Performance Value Environmental, Social and Governance (ESG) Disclosures? A detailed note on a corporate sustainability perspective. *Australasian Accounting, Business and Finance Journal*, 16(1), p.1-33.
DOI: [10.14453/aabfj.v16i1.4](https://doi.org/10.14453/aabfj.v16i1.4)
- Kumar, P. & Firoz, M. (2020) Accounting for Certified Emission Reductions (CERs) in India: An analysis of the disclosure and reporting practices within the financial statements. *Meditari Accountancy Research*, 28(2), p.365-389.
DOI: <https://doi.org/10.1108/MEDAR-01-2019-0428>
- Kumar, P. & Firoz, M. (2019a) How does capital market respond to Certified Emission Reductions (CERs) announcements in India: An event study methodology. *Managerial Finance*, 45(7), p.950-965.
DOI: <https://doi.org/10.1108/MF-12-2018-0635>
- Kumar, P. & Firoz, M. (2019b) What drives the voluntary environmental reporting (VER): an examination of CDP India firms. *Journal of Environmental Accounting and Management*, 7(1), p.45-58.
DOI: [10.5890/JEAM.2019.03.004](https://doi.org/10.5890/JEAM.2019.03.004)
- Kumar, P. & Firoz, M. (2018a) Impact of carbon emissions on cost of debt-evidence from India. *Managerial Finance*, 44(12), p.1401-1417.
DOI: <https://doi.org/10.1108/MF-03-2018-0108>
- Kumar, P. & Firoz, M. (2018b) Corporate Carbon Intensity Matter: Predicting Firms' Financial Performance. *SCMS Journal of Indian Management*. [Online]. 15(4), p.74-84. Available from: <https://search.proquest.com/openview/a6e9964f1a8fd8551b2a938d3f009e4/1?pq-origsite=gscholar&cbl=546310>. Last accessed on 15 November 2021.
- Kumar, P. & Firoz, M. (2018c) Impact of climate change disclosure on financial performance: an analysis of Indian firms. *Journal of Environmental Accounting and Management*, 6(3), p.185-197.
DOI: [10.5890/JEAM.2018.09.001](https://doi.org/10.5890/JEAM.2018.09.001)
- Kumar, P. & Kumar, A. (2018d) Corporate Social Responsibility Disclosure and Financial Performance: Further Evidence from NIFTY 50 Firms. *International Journal of Business Insights & Transformation*. [Online]. 11(2), p.62-69. Available from: <http://eds.b.ebscohost.com/eds/detail/detail?vid=0&sid=b9b65d35-21-4259-9993-28f2a881dd5d%40sessionmgr101&bdata=JnNpdGU9ZWRzLWxpdmU%3d#AN=132446975&db=bsx>. Last accessed on 9 July 2021.
- Kumar, P. & Firoz, M. (2017a) Carbon Emission Reductions (CERs) Accounting with Special Reference to IFRS. *International Journal of Business Insights & Transformation*. [Online]. 10(2), p.4-9. Available from: <http://eds.b.ebscohost.com/eds/detail/detail?vid=0&sid=102914dc-26f5-4479-9471-c4bdba5f7b1a%40pdv-v-sessmgr02&bdata=JnNpdGU9ZWRzLWxpdmU%3d#AN=126523799&db=bsx>. Last accessed on 3 September 2021.
- Kumar, P. & Firoz, M. (2017b) The Impact of Voluntary Environmental Disclosure on Cost of Equity Capital - Evidence from Indian Firms. *Journal of Contemporary Management Research*. [Online]. 11(1), p.1-26. Available from: <https://search.proquest.com/openview/eb39336845f4c3603415216d8eb0f988/1?pq-origsite=gscholar&cbl=2039847>. Last accessed on 21 September 2021.
- Koellner, T., Suh, S., Weber, O., Moser, C. & Scholz, R.W. (2007) Environmental impacts of conventional and sustainable investment funds compared using input-output life-cycle assessment. *Journal of Industrial Ecology*, 11(3), p.41-60.
DOI: <https://doi.org/10.1162/jiec.2007.1147>
- Lee, K.H. (2017) Does size matter? Evaluating corporate environmental disclosure in the Australian mining and metal industry: A combined approach of quantity and quality measurement. *Business Strategy and the Environment*, 26(2), p.209-223.
DOI: [10.1002/bse.1910](https://doi.org/10.1002/bse.1910)
- Li, Y., Eddie, I. & Liu, J. (2014) Carbon emissions and the cost of capital: Australian evidence. *Review of Accounting and Finance*, 13(4), p.400.
DOI: <https://doi.org/10.1108/RAF-08-2012-0074>
- Luo, L., Tang, Q. & Lan, Y.C. (2013) Comparison of propensity for carbon disclosure between developing and developed countries: A resource constraint perspective. *Accounting Research Journal*, 26(1), p.6-34.
DOI: [10.1108/ARJ-04-2012-0024](https://doi.org/10.1108/ARJ-04-2012-0024)
- Mackenzie, C. & Lewis, A. (1999) Morals and markets: the case of ethical investing. *Business Ethics Quarterly*, 9(3), p.439-452.
DOI: <https://doi.org/10.2307/3857511>
- Matsumura, E.M., Prakash, R. & Vera-Munoz, S.C. (2014) Firm-value effects of carbon emissions and carbon disclosures. *The*

Accounting Review, 89(2), p.695-724.

DOI:10.2308/accr-50629

McWilliams, A. & Siegel, D. (2001) Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review*, 26(1), p.117-127.

DOI: 10.5465/AMR.2001.4011987

Mishra, D.R. (2017) Post-innovation CSR performance and firm value. *Journal of Business Ethics*, 140(2), p.285-306.

DOI: 10.1007/s10551-015-2676-3

Myers, S.C. & Majluf, N.S. (1984) Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), p.187-221.

DOI:10.3386/w1396

Nguyen, T., Locke, S. & Reddy, K. (2014) A dynamic estimation of governance structures and financial performance for Singaporean companies. *Economic Modelling*, 40, p.1-11.

DOI: 10.1016/j.econmod.2014.03.013

Nina Röhrbein, November (2012) Integrating ESG issues with executive pay. [Online]. Available from: <https://www.ipe.com/integrating-esg-issues-with-executive-pay/10003603.article>. Last accessed on 17 June 2021.

Noh, J.H. (2017) The impact of climate change risks on firm value: Evidence from the Korea. *Global Business & Finance Review (GBFR)*, 22(3), p.110-127.

DOI: 10.17549/gbfr.2017.22.3.110

Nurhayati, R., Taylor, G., Rusmin, R., Tower, G. & Chatterjee, B. (2016) Factors determining social and environmental reporting by Indian textile and apparel firms: a test of legitimacy theory. *Social Responsibility Journal*, 12(1), p.167-189.

DOI: 10.1108/SRJ-06-2013-0074

Orens, R., Aerts, W. & Cormier, D. (2010) Web-based non-financial disclosure and cost of finance. *Journal of Business Finance & Accounting*, 37(9-10), p.1057-1093.

DOI: 10.1111/j.1468-5957.2010.02212.x

Orlitzky, M., Schmidt, F.L. & Rynes, S.L. (2003) Corporate social and financial performance: A meta-analysis. *Organization Studies*, 24(3), p.403-441.

DOI: 10.1177/0170840603024003910

Pedwell, K., Warsame, H. & Neu, D. (1994) The accuracy of Canadian and New Zealand earnings forecasts: A comparison of voluntary versus compulsory disclosures. *Journal of International Accounting, Auditing and Taxation*, 3(2), p.221-236. DOI: [https://doi.org/10.1016/1061-9518\(94\)90018-3](https://doi.org/10.1016/1061-9518(94)90018-3)

Petcharat, N.N. & Mula, J.M. (2012) Towards a conceptual design for environmental and social cost identification and

measurement system. *Journal of Financial Reporting and Accounting*, 10(1), p.34-54.

DOI: 10.1108/19852511211237435

Reid, E.M. & Toffel, M.W. (2009) Responding to public and private politics: Corporate disclosure of climate change strategies. *Strategic Management Journal*, 30(11), p.1157-1178.

DOI: <https://doi.org/10.1002/smj.796>

Russo, M.V. & Fouts, P.A. (1997) A resource-based perspective on corporate environmental performance and profitability. *Academy of management Journal*, 40(3), p.534-559.

DOI: 10.2307/257052

Saka, C. & Oshika, T. (2014) Disclosure effects, carbon emissions and corporate value. *Sustainability Accounting, Management and Policy Journal*, 5(1), p.22-45.

DOI: 10.1108/SAMPJ-09-2012-0030

Schultz, E.L., Tan, D.T. & Walsh, K.D. (2010) Endogeneity and the corporate governance-performance relation. *Australian Journal of Management*, 35(2), p.145-163.

DOI: 10.1177/0312896210370079

Schwartz, M.S. (2003) The ethics of ethical investing. *Journal of Business Ethics*, 43(3), p.195-213.

DOI: 10.1023/A:1022933912939

Shen, C.H. & Chang, Y. (2009) Ambition versus conscience, does corporate social responsibility pay off? The application of matching methods. *Journal of Business Ethics*, 88(1), p.133-153.

DOI: 10.1007/s10551-008-9826-9

Singhania, M. & Gandhi, G. (2015) Social and environmental disclosure index: Perspectives from Indian corporate sector. *Journal of Advances in Management Research*, 12(2), p.192-208.

DOI: 10.1108/JAMR-12-2013-0069

Statman, M. (2008) Quiet conversations: The expressive nature of socially responsible investors. *Journal of Financial Planning*, 21(2), p.40-46. Available from: <https://www.financialplanningassociation.org/article/journal/FEB08-quiet-conversations-expressive-nature-socially-responsible-investors>

Tarmuji, I., Maelah, R. & Tarmuji, N.H. (2016) The impact of environmental, social and governance practices (ESG) on economic performance: Evidence from ESG score. *International Journal of Trade, Economics and Finance*, 7(3), p.67.

DOI: 10.18178/ijtef.2016.7.3.501

Thamotheram, R. & Wildsmith, H. (2007) Increasing Long-Term Market Returns: realising the potential of collective

- pension fund action. *Corporate Governance: An International Review*, 15(3), p.438-454.
DOI: 10.1111/j.1467-8683.2007.00577.x
- Van de Velde, E., Vermeir, W. & Corten, F. (2005) Corporate social responsibility and financial performance. *Corporate Governance: The International Journal of Business in Society*, 5(3), p.129-138.
DOI: 10.1108/14720700510604760
- Viviers, S., Bosch, J.K., Smit, E. & Buijs, A. (2009) Responsible investing in South Africa. *Investment Analysts Journal*, 38(69), p.3-16.
DOI: 10.1080/10293523.2009.11082505
- Waddock, S.A. & Graves, S.B. (1997) The corporate social performance–financial performance link. *Strategic management journal*, 18(4), p.303-319.
DOI: <https://doi.org/10.1002>
- Wagner, M., Van Phu, N., Azomahou, T. & Wehrmeyer, W. (2002) The relationship between the environmental and economic performance of firms: an empirical analysis of the European paper industry. *Corporate Social Responsibility and Environmental Management*, 9(3), p.133-146.
DOI: 10.1002/csr.22
- Wasiuzzaman, S. (2019) Impact of environmental, social and governance (ESG) disclosure on executive compensation: evidence from Malaysia. *International Journal of Auditing and Accounting Studies*, 1(1), p.27-40.
- Weber, O. (2005) Sustainability benchmarking of European banks and financial service organizations. *Corporate Social Responsibility and Environmental Management*, 12(2), p.73-87.
DOI: 10.1002/csr.77
- Yunus, S., Elijido-Ten, E. & Abhayawansa, S. (2016) Determinants of carbon management strategy adoption: Evidence from Australia's top 200 publicly listed firms. *Managerial Auditing Journal*, 31(2), p.156-179.
DOI: 10.1108/MAJ-09-2014-1087
- Zhao, C., Guo, Y., Yuan, J., Wu, M., Li, D., Zhou, Y. & Kang, J. (2018) ESG and corporate financial performance: Empirical evidence from China's listed power generation companies. *Sustainability*, 10(8), p.2607.
DOI: 10.3390/su10082607

Appendix I : List of companies under the study

Company	Company
ABB India Ltd.	Interglobe Aviation Ltd.
ACC Ltd.	ITC Ltd.
Adani Ports & Special Economic Zone Ltd.	JSW Steel Ltd.
Ambuja Cements Ltd.	Kansai Nerolac Paints Ltd.
Asian Paints Ltd.	Larsen & Toubro Infotech Ltd.
Aurobindo Pharma Ltd.	Larsen & Toubro Ltd.
Avenue Supermarts Ltd.	Lupin Ltd.
Bajaj Auto Ltd.	Mahindra & Mahindra Ltd.
Berger Paints India Ltd.	Marico Ltd.
Bharat Petroleum Corporation Ltd.	Maruti Suzuki India Ltd.
Bharti Airtel Ltd.	MotherSumi Systems Ltd.
BhartiInfratel Ltd.	Nestle India Ltd.
Biocon Ltd.	NMDC Ltd.
Bosch Ltd.	NTPC Ltd.
Britannia Industries Ltd.	Oil And Natural Gas Corporation Ltd.
Cipla Ltd.	Oracle Financial Services Software Ltd.
Coal India Ltd.	Petronet Lng Ltd.
Colgate-Palmolive (India) Ltd.	Pidilite Industries Ltd.
Container Corporation Of India Ltd.	Piramal Enterprises Ltd.
Dabur India Ltd.	Power Grid Corporation Of India Ltd.
Divi's Laboratories Ltd.	Procter & Gamble Hygiene & Health Care
DLF Ltd.	Reliance Industries Ltd.
Dr Reddy's Laboratories Ltd.	Shree Cement Ltd.
Eicher Motors Ltd.	Siemens Ltd.
Embassy Office Parks Reit Ltd.	Sun Pharmaceutical Industries Ltd.
GAIL (India) Ltd.	Tata Consultancy Services Ltd.
GlaxoSmithKline Consumer Healthcare	Tata Motors Ltd.
Godrej Consumer Products Ltd.	Tata Steel Ltd.
Grasim Industries Ltd.	Tech Mahindra Ltd.
Havells India Ltd.	Titan Company Ltd.
HCL Technologies Ltd.	Torrent Pharmaceuticals Ltd.
Hero Motocorp Ltd.	Ultratech Cement Ltd.
Hindalco Industries Ltd.	United Breweries Ltd.
Hindustan Petroleum Corporation Ltd.	United Spirits Ltd.
Hindustan Unilever Ltd.	UPL Ltd.
Hindustan Zinc Ltd.	Vedanta Ltd.
Indian Oil Corporation Ltd.	Wipro Ltd.
Info Edge (India) Ltd.	Zee Entertainment Enterprises Ltd.
Infosys Ltd.	

Source: S&P BSE 100