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The Value Relevance of Corporate Sustainability Performance (CSP)

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Abstract: There are two opposite views about corporate sustainability in the existing literature. Sustainability activities are considered as a source of long-term value creation for the shareholders' interest whereas they also occupy scarce corporate resources and become an extra burden at the expense of shareholders. To examine these contradictory views, this study investigated the value relevance of CSP using a sample of 113 firms belonging to twelve (12) highly sustainable economies as ranked by the Global Sustainability Competiveness Index for the period 2015–2020. The CSP was measured through a Sustainability Index (SI) developed in this study using the GRI framework which takes into account all the three dimensions of sustainability, i.e., economic, environmental, and social. The results of the study showed that CSP significantly explains the variation in stock market prices and hence is value relevant in supporting the shareholders' value-enhancing role of corporate sustainability. The results are useful for practitioners and policy makers in the field of corporate sustainability.

Keywords: corporate sustainability performance; value relevance; GRI framework

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1. Introduction

Corporate sustainability is the process of balancing economic, ecological, and social concerns by firms [1]. It shows the impact of an organization's value chain activities on society, the natural environment, and the economy. To be successful, business organizations have to address societal needs and not just the traditional economic needs [2], and therefore have to focus on the sustainable growth (i.e., creation of the sustainable value) which encompasses both the creation of shareholders' value as well as the societal values while reducing pollution and environmental impacts [3,4]. Corporate sustainability is gauged through the corporate sustainability performance (CSP) of firms, which indicates the tridimensional performance of a business organization, i.e., the environmental, social, and the economic performance [5]. CSP shows the commitment of a firm to the achievement of sustainable development's objectives [6].

Business organizations publish standalone sustainability reports along with their annual financial reports to communicate sustainability activities of the firm during the year to their stakeholders, such as stock market participants (including investors and analysts), regulators, employees, suppliers, and customers, etc. The stock market investors are considered as the most important stakeholders of a firm because they provide the necessary capital for survival of the business [7]. Therefore, management research scholars are interested in the impact of CSP on the investment decision making of stock market investors and how it influences the stock market price. This phenomenon is called the value relevance of CSP. Value relevance is the ability of a performance measure to explain variation in contemporaneous stock returns. It is the estimate of the performance measure's usefulness in an equity investor's decision making [8].

Corporate sustainability is a complex problem and there is no universal approach to study and value it [5,9,10]. Therefore, the most important challenge in this stream of research is to measure the CSP of firms [11]. Existing studies have used different rankings,

ratings, and indices as a proxy for CSP; however, such rankings, ratings, and indices usually follow inconsistent measurement criteria and are based on unreliable data, i.e., surveys and company self-reported data and mostly focus on a single aspect of sustainability [12]. The current study addressed deficiencies in existing proxies of CSP by developing and constructing a more comprehensive index for measuring corporate sustainability.

Scholars in the field of management and finance have carried out many studies to examine the value relevance of corporate sustainability performance (CSP) of firms with a view to establish a business case for it. However, the existing literature provides empirical evidence both in support of and against the value relevance of CSP. The research studies such as [13–20] have supported the value relevance of CSP. On the other hand, the empirical studies such as [21–27] found no empirical evidence in support of the value relevance of CSP.

The mixed empirical results have led to two opposing theories about corporate sustainability, i.e., the shareholders' value-enhancing theory and the shareholders' expense theory. The first theory suggests that sustainability activities of firms enhance the market value of equity and ultimately increase the shareholders' wealth. The shareholders' expense theory predicts that sustainability activities of firms are a burden on the resources of the firms and hence do not increase shareholders' wealth [28]. In view of these two opposing theories, this study endeavors to revisit the value relevance of CSP by employing a more rigorous research design.

The research design employed in the present study has a number of advantages over the research designs used by the existing studies. For example, most the existing studies on corporate sustainability [29–31] have used different ratings, rankings and indices as proxy for Corporate Sustainability, which suffer from various measurement problems such as inappropriate selection of sustainability topics and weightage, etc. However, this study used CSP score determined on the basis of the Sustainability Index developed in this study which overcomes the deficiencies of existing proxies. This study used a sample of firms belonging to highly sustainable economies as ranked by the Global Sustainability Competitive Index 2017; it is expected that stock markets in these countries would be more sensitive to sustainability information in relation to low-sustainability economies. Therefore, these countries provide a more appropriate context for empirical analysis and have not been considered in previous studies.

Further, this study employed a two-step system, GMM, for estimation of econometric models. This methodology accounts for econometric issues such as autocorrelation, heteroscedasticity, and endogeneity [32]. In previous studies, these econometric issues have not been addressed. Therefore, the empirical results of this study are more reliable and unbiased. Moreover, most of the existing studies on the value relevance of CSP have been conducted in a single-country context. However, the present study used an international sample of one hundred and thirteen (113) firms belonging to twelve (12) countries and hence provides international evidence on the value relevance of CSP.

Empirical results of the study showed a positive and significant relationship between CSP and stock market prices, confirming the notion that corporate sustainability performance of firms is value-relevant and supports the shareholders' value-enhancing role of corporate sustainability.

The present study attempted to address multiple research gaps and therefore contributes to the existing literature in the following manner.

First, this study developed a sustainability index based on the GRI standard, 2016 to measure CSP of firms more comprehensively by covering more sustainability topics and the three dimensions of corporate sustainability, i.e., economic, social, and environmental. Second, by employing the sustainability index developed in this study, gaps in the sustainability performance of firms with respect to the three dimensions of sustainability, i.e., economic, social, and environmental could be identified. In the current study, the results showed that sample firms performed well in the environmental dimension whereas their CSP scores were low for economic and social dimensions. Third, the empirical results

of the study showed that CSP is value-relevant and accordingly supports the shareholders' value-enhancing theory of corporate sustainability. Therefore, the study helps to establish a business case for corporate sustainability.

Section 2 provides a literature review, and Section 3 explains the methodology used to conduct the study. Section 4 describes and explains the results of the study whereas Section 5 provides the conclusion and policy implications of the study.

2. Literature Review

2.1. Measuring Corporate Sustainability Performance (CSP)

Business organizations report on their sustainability activities by way of a standalone sustainability report. These reports cover activities of a business organization in the three dimensions of sustainability, i.e., environmental, social, and economic. However, it is difficult to quantify and measure sustainability performance of firms directly from their sustainability reports. This is the reason that most of the existing studies have used ratings, rankings, indices, and other measures as proxies of CSP. The proxies used in the previous literature can be broadly divided into three categories. The first category of proxies consists of ratings, rankings, and indices which have been developed by independent rating agencies. These measures include the KLD indices, ESG scores, Dow Jones Sustainability Index (DJSI), Sustainability Asset Management (SAM) ranking, CES annual rating, and Swiss bank Sarasin & Co Rating, etc. The second category of proxies used in the literature determines the CSP of firms on the basis of surveys and interviews conducted by the researchers themselves. The third category of proxies for CSP is determined through a content analysis-based disclosure index. Here, the researcher identifies the items (indicators) relating to sustainability performance of firm and then all such items are verified from the sustainability reports of the organization and are assigned a numerical value using a consistent scoring system.

The majority of existing studies on corporate sustainability use the first category of proxies for measuring CSP. For example, [29–31] have used the KLD indices as measures of CSP in their studies. Refs. [20,22,33,34] have used the Dow Jones Sustainability Index (DJSI) as a proxy of CSP. The studies such as [28,35] have used the rankings of Sustainability Asset Management (SAM) for measuring the CSP of firms. Ref. [36] used the GES annual rating, whereas [37] used the Swiss bank Sarasin & Co Rating as a proxy for CSP. Ref. [27] in their study on the analysis of corporate sustainability of new ventures, determined CSP on the basis of data collected through surveys and interviews of CEOs and webpages of the new ventures.

However, as noted by [12,38], these ratings, rankings, and indices used as proxies for CSP have been developed using inconsistent measurement criteria. The selection of sustainability topics and weightage schemes used for these measures is arbitrary. For example, the DJSI includes economic indicators whereas the FTSE5Good has no measure for economic performance. Similarly, some sustainability topics are given more weightage than the others, e.g., in DJSI, customer service is given 50% more weight than the corporate citizenship whereas in FTSE4Good no weight is given to customer service. Further, the KLD index is composed of environmental and social indicators only. Similarly, these proxies cannot be verified independently to see whether the chosen measurement criteria have been followed or not. Additionally, these measures are based on data which are obtained through surveys or are self-reported by the company and are unreliable because these surveys usually have a statistically insignificant response rate and also suffer from self-reporting bias. Therefore, such proxies based on ratings of independent agencies or surveys do not accurately reflect the sustainability performance of firms and hence are not appropriate to be used in research studies.

The third category of proxies has also been employed by many research studies. Ref. [39] developed a content-based index for evaluation of the corporate sustainable development of firms. The researcher identified the sustainability topics for the three dimensions of the corporate sustainability, i.e., economic, social, and environmental through interviews

and analysis of annual reports. Similarly, [40,41] developed a content analysis-based disclosure index for the quality of environmental disclosures performance of firms using the GRI Guidelines G2. Ref. [28] developed content-based indices for the quality of sustainability disclosure and for the measurement of CSP of firms. They used the GRI G3.1 Guidelines. Similarly, ref. [42] used GRI G3.1 Guidelines to develop their content analysis-based index for measuring the CSP of Indian firms. However, the existing sustainability indices do not cover all the three dimensions of corporate sustainability. Further, these indices have used only a small number of items (sustainability topics) to evaluate the sustainability performance of firms. For example, the index developed by [40] focused on the environmental dimension of sustainability, whereas the index used by [28] has items related to the social and environmental dimension only.

Keeping in view the deficiencies in the existing proxies of CSP, this study developed a Sustainability Index based on GRI Standards, 2016 which covers all three dimensions of corporate sustainability. This index also covers relatively more sustainability topics as compared with the existing sustainability indices. The indicators included in the index are voluntary disclosures of corporate sustainability activities of the firms as provided in the GRI Standards, 2016.

2.2. Empirical Evidence

Value relevance of a measure is viewed as a direct estimate of the measure's usefulness in equity investors' decision making [8]. Research scholars have examined the value relevance of CSP of firms in order to establish a business case for corporate sustainability. Initially, this line of research was focused on the value relevance of accounting and financial information [43]; however, over time, the stakeholders also began to demand non-financial information about the firm for their decision making. Therefore, scholars began to investigate the value relevance of non-financial information as well. In their seminal work, Ref. [44] studied the value relevance of financial as well as non-financial information. The researchers reported that, on a stand-alone basis, financial information, i.e., earnings, book values, and cash flows are largely value-irrelevant, whereas the non-financial information, i.e., growth and market penetration are highly value-relevant. They also showed that when financial information is combined with non-financial information, they do contribute to the explanation of variations in the stock prices.

After the publication of the report Our Common Future (1987), the concept of sustainable development was popularized at the world level [45]. The pursuance of sustainable development brought a paradigm shift in the role of corporations in society. In view of major global challenges such as climate change, resource exhaustion, environmental pollution, poverty, and human rights violations, business organizations have started reporting on the economic, social, and environmental impacts of their business activities through the issuance of standalone sustainability reports. A number of research studies have been carried out on the value relevance of sustainability reporting. For example, [46] studied the value relevance of corporate sustainability performance of firms and compared it with the accounting measures. The researchers reported that CSP has more explanatory power to account for variations in the stock prices than the accounting information such as earnings and book value of equity. Similarly, [47] conducted a study on the value relevance of Corporate Sustainability as measured by the SAM sustainability ranking and sustainability reporting using the GRI framework for 600 largest European companies and the Feltham and Ohlson valuation model for the period 2001–2011. The authors reported a positive association between Corporate Sustainability and market value of firms.

Similarly, ref. [14] investigated the value relevance of environmental and social activities and also explored the demand and general interest of the equity market participants for such disclosures. Their empirical results suggested that the disclosure of environmental and social activities are value relevant and the equity market participants are interested in and demand such information. Ref. [17] investigated the effects of corporate sustainability and industry-related exposure to environmental and social risks on the market value of

MSCI World firms. They found that in the early years a negative relationship was observed; however, the financial crisis of 2008 led to a positive perception of corporate sustainability in industries which had exposure to higher environmental and social risks. Ref. [48] examined whether social responsibility activities of companies play a significant role in enhancing firm value for a sample of companies listed on Sao Paulo Stock Exchange in Brazil for the period 2010–2015. The researchers distinguished between the environmental, social, and governmental components of sustainability. Overall empirical results of their study support the value relevance of CSR activities.

In some studies, the authors have examined value relevance of only a single aspect of sustainability. For example, ref. [49] examined the value relevance of carbon emissions reported by Australian Companies from 2009 to 2015. Their empirical analysis suggested that the level of direct emission is negatively associated with a firm's market value. This shows that the stock market penalizes firms based on low disclosure scores or poor carbon management performance. Similarly, ref. [50] examined the value relevance of corporate environmental performance (CEP) for a sample of Korean firms. They used two proxies for CEP, i.e., the individual environmental performance indicators and the environmental performance construct, which was measured from the sum of individual measures. Empirical results of their study showed that firm value significantly increases with enhanced environmental performance and hence CEP is value-relevant.

In addition to regression analysis, some studies have used alternative methodologies to examine the value relevance of corporate sustainability. Ref. [51] examined the value relevance of sustainable development disclosure by employing the event study methodology and also controlling for gender diversity in boardrooms. They reported significant abnormal returns around event days for firms with women directors, showing the value relevance of corporate sustainability. Some studies have also examined the relationship between CSP and corporate financial performance (CFP). These indirectly evaluate the value relevance of CSP. Ref. [30] investigated the relationship between CSP and economic performance. The KLD index was used as a measure of CSP whereas economic performance was measured through Tobin's Q. Empirical results of the study showed a positive relationship between the two variables. Similarly, in a recent study by [52], the relationship between corporate social responsibility (CSR) and financial performance was investigated. The study employed a sample of publicly listed Australian firms over the period 2009–2015. They found that CSR enhances the financial performance of the firms. Other studies such as [34,53,54] also reported a positive association between corporate sustainability and financial performance.

The literature also reveals that corporate sustainability enhances the value relevance of financial information. The financial information released by the socially responsible firms is considered as more reliable as compared with that released by other firms. Ref. [55] investigated the impact of Social Responsibility Performance on the Value Relevance of Financial Data in the Polish Banking Sector. The empirical results of the study indicated that financial disclosures of banks included in CSR are more value-relevant.

There is also another stream of research on the value relevance of CSP that argues that sustainability activities are largely value-irrelevant. For example, ref. [56] examined the value relevance of environmental performance of firms using the [57] model. Environmental rating was used as proxy for environmental performance. Their empirical results suggested a negative relationship between environmental performances and market value of firms. Hence, they argued that their results supported the cost-concerned school, which argues that environmental investments represent only increased cost, which results in decreased earnings and lower market values. Similarly, ref. [22] employed an event study methodology to examine the impact of inclusion or exclusion of a firm in the Dow Jones Sustainability World Index as a proxy for CSP on its stock return and risk. They reported that such an announcement has no significant effect on the stock return and risk of the firm. Similarly, ref. [25] investigated the business case for CSR. On the basis of their empirical analysis, they found no generic or universal business case for the CSR activities.

In a recent study by [58] the phenomenon of value relevance was also examined in the context of integrated reporting for Sri Lankan firms. The integrated report provided information about an organization's strategy, governance, performance, and prospects in the context of the external environment, leading to value creation, preservation, or erosion by an organization over the short, medium, and long term [36]. This report also included sustainability information about organizations. The empirical results of the study showed that, on a standalone basis, integrated reporting does not significantly impact a firm's value and is therefore value-irrelevant. Ref. [59] investigated the determinants of Carbon Emission Disclosures (CED) and their relationship with the UN SDGs disclosures for a sample of UK higher-education institutions. They found that carbon reduction targets imposed by the Government, environmental audit, and the amount of actual carbon emissions are significantly and positively associated with CED. However, they reported no relationship between CED and disclosure of SDGs.

The literature review showed that empirical evidence on the value relevance of CSP is inconclusive. Therefore, the existing literature provides a better context for revisiting the value relevance of CSP through a more rigorous research design. Furthermore, on the basis of above discussion, the principal hypothesis for this research study is postulated as follows:

H1: *The Corporate Sustainability Performance of firms is value-relevant.*

Table 1 provides a summary of literature on the value relevance presented in this study.

Table 1. Summary of the literature review.

S.No	Research Study	Major Findings
1.	[44]	Seminal on the value relevance of non-financial information. The study reported that non-financial information is value-relevant and when combined with financial information it does contribute to the explanation of variation in stock prices.
2.	[46]	The study examined the value relevance of CSP and compared it with the value relevance of accounting measures such as earnings and book value. The authors reported that CSP has more explanatory power to account for variation in stock prices than the accounting measures.
3.	[17]	The authors examined the value relevance of CSP for the 600 largest European companies for the period 2001–2011. They reported a positive association between CSP and stock prices.
4.	[14]	This study examined the value relevance of environmental and social activities and also evaluated demand and interest of capital market participants in the disclosure of such activities. The authors reported that environmental and social activities are value-relevant and there exists demand for such activities among the market participants.
5.	[48]	This study explored the role of social activities in enhancing the firms' value. Empirical results of the study support the value-enhancing theory.
6.	[49]	In this study, the value relevance of carbon emission was examined. The authors found a negative association between carbon emission and a firm's value.
7.	[50]	The authors investigated the value relevance of corporate environmental performance (CEP). On the basis of their empirical results, they reported that CEP is value-relevant.

Table 1. *Cont.*

S.No	Research Study	Major Findings
8.	[51]	This study employed an event study methodology to examine the value relevance of sustainable development disclosures after controlling for gender diversity in boardrooms. They reported significant abnormal returns around the event days for firms with women directors, confirming the value relevance of sustainable development.
9.	[30]	The researcher examined the relationship between corporate sustainability performance (CSP) and corporate financial performance (CFP). On the basis of their empirical investigation they reported a positive relationship between the two variables.
10.	[52]	In this study, the researchers examined the impact of CSR on the financial performance of firms. The empirical results showed that CSR enhances the financial performance of firms.
11.	[55]	The researcher investigated that whether Corporate Sustainability Performance (CSP) enhances the value relevance of financial information. The author found that CSP does enhance the value relevance of financial information.
12.	[58]	This study examined the phenomenon of value relevance in the context of Integrated Reporting for Sri Lankan firms. Empirical results of the study indicated that, on a standalone basis, integrated reporting does not significantly impact a firm's value and is value-irrelevant.
13.	[59]	This study examined the determinants of Carbon Emission Disclosures (CED) and its relationship with UN SDGs disclosures. The results showed that the targets set by the Government and Environmental Audits and the actual amount of carbon emission are the important determinants of CED. Further, they reported that there is no relationship between CED and UN SDGs disclosures.
14.	[22]	The study examined the impact of CSP on the stock return and risk using the event study methodology. They reported that CSP has no impact on the stock return and risk of firms.
15.	[25]	They studied the business case for CSR. However, they reported that there is not a generic or universal case for CSR activities.

3. Research Methodology

3.1. Sample Selection

The main objective of this study was to examine the value relevance of the Corporate Sustainability Performance (CSP) of firms. In order to conduct the study in a proper context, the sample was selected from highly sustainable countries as ranked by the Global Sustainability Competiveness Index (GSCI), 2017. Initially, the top 50 highly ranked countries with above-average sustainability scores were selected for the study sample. It is presumed that in these countries the stock market participants are more aware about the sustainability activities of companies. The Global Reporting Initiative (GRI) framework, i.e., GRI G_4 Guidelines, 2013 and GRI standards, 2016 was to be used for developing the Sustainability Index; therefore, from 50 highly sustainable countries, only those countries in which firms were preparing their sustainability reports in accordance with the GRI G_4 Guidelines, 2013 or GRI standards, 2016 were retained in the sample. After accounting for these criteria, only 180 firms from 21 countries were retained in the sample.

GRI issued the GRI G_4 Guidelines in the year 2013, which were adopted for reporting purposes in the year 2015. Similarly, the GRI standards were issued in the year 2016 and the firms started reporting on these standards in the year 2017 and 2018. It has also been noted that most of the sample firms have issued their latest sustainability reports up to the

F.Y 2020. Keeping in view these factors, the sample period for the study was chosen from the F.Y 2015 to F.Y 2020.

Firms from the industry groups such as Manufacturing, Chemical and Allied Products, and Mining, Energy, etc., are more environmentally hazardous, they have a high number of employees, and are more capitally intensive. Therefore, these firms have a noticeable impact on the environment, society, and the economy and were included in the study sample. Banks, insurance companies, and other service firms were excluded from the sample. Firms with missing data for the sample period were also excluded from the sample. Firms with outlier observations were also removed from the sample.

Lastly, a final sample of one hundred and thirteen (113) firms from twelve (12) countries for the period 2015 to 2020 were retained for the study. The details of sample firms, industries, and countries have been provided in Table A1 in Appendix A.

3.2. Data Sources

Data on the firm-level financial variables of the sample firms for the period 2015–2020 were obtained from the well-known database World Scope. Data on exchange rates and country-level variables, i.e., GDP growth rate and yearly stock return were obtained from the database of International Monetary Fund (IMF) and World Bank respectively. The sustainability reports of the sample firms were obtained from three different sources, i.e., (i) GRI sustainability reports database, (ii) www.Responsibilityreports.com, and (iii) the websites of the companies.

As explained earlier, outliers in the data were removed by excluding firms from the sample. For unusual observations and to account for any data entry mistakes, the data were winsorized at 1%, i.e., the 1st and 99th percentile.

3.3. The Global Reporting Initiative (GRI) Framework

Several frameworks, standards, and ratings and indices have been developed to measure and report on sustainability performance of firms. Some of the important sustainability frameworks are the Global Reporting Initiative (GRI) framework, the UN Global Compact principles, the Carbon Disclosure Project (CDP), the World Business Council for Sustainable Development (WBCSD), and the standards issued by the Sustainability Accounting Standards Board (SASB).

According to the KPMG corporate social responsibility reporting survey, 2017, the Global Reporting Initiative (GRI) is the most widely used framework for sustainability reporting; 74% of the 100 largest firms in the 49 countries of the world and 89% of the world's largest companies by revenue based on the fortune 500 ranking of 2016 use the GRI framework for sustainability reporting. Since its inception, the GRI has issued a number of guidelines such as G1, G2, G3, G3.1, and G4. In October 2016, GRI issued the first global standards on sustainability reporting, i.e., GRI Standard 2016.

The GRI framework uses a tridimensional approach for disclosure and reporting of sustainability activities of firms, i.e., environmental, social, and economic. Importantly, the GRI framework focuses on hard disclosures of corporate sustainability [60]. Therefore, firms adopting the GRI framework will have to report on objective sustainability indicators which cannot be imitated by firms with low or poor sustainability performance. Therefore, the GRI framework provides a fairer view of the firm's sustainability performance.

Ref. [61] evaluated the sustainability reporting practices of firms in terms of harmonization of reporting standards. They compared the evolution and convergence of financial reporting standards with that of Corporate Sustainability (CS) reporting and also evaluated the four global standards of CS reporting, i.e., GRI's G3 guidelines, AccountAbility's AA1000-principles standard, the UN Global Compact's COP, and ISO 26,000. On the basis of detailed evaluation of these standards, the authors concluded that the GRI would be the best standard to provide decision-useful information.

Considering the widespread use of the GRI framework by corporations for sustainability reporting and its objective measurement of CSP of firms, the extant literature has applied the GRI framework for measuring sustainability performance of firms [42,47,62–66].

Keeping in view the relevance of GRI framework for sustainability reporting in practice as well as its application in the existing literature for measuring and evaluation of sustainability performance of firms, this study used the GRI framework for development and construction of the sustainability index. This index was used for measuring the sustainability performance of firms.

3.4. Measurement of Variables

The dependent, independent, and control variables of this study were measured as described below:

3.4.1. Measuring CSP

One of the objectives of this research study was to construct a Sustainability Index based on the GRI framework with a view to measure CSP of firms comprehensively and accurately.

The indicators of our Sustainability Index are based on the GRI standards, 2016. The GRI Standards, 2016 have General Disclosures as well as sustainability performance-specific indicators for the three dimensions, i.e., economic, environmental, and social. For the Sustainability Index, the indicators relating to the sustainability performance of firms were chosen and included in the index. As the voluntary disclosure theory suggests, firms with high sustainability performance are expected to disclose more sustainability information through their sustainability reports. Therefore, only those indicators from the GRI standards on which the firms disclose information on a voluntary basis to project their performance were included in the index. The indicators on which the firms are legally bound to disclose the information were excluded from the index. The detail of sustainability topics and indicators included in the Sustainability Index have been provided in Table A2 in Appendix A.

Following [42,67,68] the sustainability reports of the sample firms were content-analyzed and quantified for measuring sustainability performance of sample firms against the Sustainability Index. All the firms preparing their sustainability reports in accordance with GRI Standards, 2016 are required to include a GRI index in their reports. The GRI index identifies and link the relevant portion of the report which provides information on a particular sustainability indicator. Therefore, the GRI index of the sustainability report helps to identify whether information on a particular sustainability indicator has been provided in the report or otherwise. Following existing studies, i.e., [39,40], the indicators in the Sustainability Index were assigned a score of '1' and '0' for the presence or absence of information on a particular indicator. After assigning numerical values (1 or 0) to each indicator in the Sustainability Index for each sample firm for the period 2015 to 2020, the score for each dimension of the sustainability, i.e., economic, social, and environmental performance was determined by adding up the score obtained on each indicators of the relevant dimension and dividing by the maximum score for that dimension. To obtain the sustainability score of a firm-year, the score on each sustainability dimension was added. The total sustainability score for a firm-year shows CSP score for that year.

3.4.2. Stock Market Price (P) (Dependent Variable)

In the present study, the [57] value-relevance model was employed for empirical analysis. The dependent variable in the model is the stock market price (P). Stock market price data were obtained from the WorldScope database. The stock market prices (i.e., the variable P) were reconciled by calculating market price per share internally by dividing MV by N outstanding shares. For uniformity, all the amounts of variable "P" were converted into US dollars for all the sample firms.

3.4.3. Independent and Control Variables

The two independent variables of the [57] model are Book Value of Equity and Net Income (Profit). Book value of equity shows the book value of outstanding shares at the close of financial year whereas net income shows the profit available to common equity holders at the close of the financial year. Data on both the variables were obtained from the WorldScope database.

Control variables significantly affect the dependent variables; however, these are not the variables of interest for the researcher. To ensure the validity and generalizability of the study, it is important that such variables are properly used (included or excluded) in the study [69]. This study examined the value relevance of CSP across twelve (12) countries; therefore, the firm-level and country-level control variables were used. Prior literature on the value relevance of Sustainability Performance (e.g., [14,20,70–72] indicate that firm size, profitability, leverage, and capital expenditure intensity are the important control variables used in the regression analysis. Some studies have also used dummy variables to control for country, year, and industry effects.

Accordingly, the following firm-level variables were used as control variables in this study:

1. Firm Size (*LNTA*): Firm size was calculated as a natural log of total assets of the firm at the close of the financial year.
2. Book Value Per Share (*BVPS*): This variable shows the book value of outstanding share at the closing date of the financial year of the firm.
3. Earnings per Share (*EPS*): This variable was calculated by diving net income by outstanding shares at the close of the financial year.
4. Leverage (*LEV*): Leverage is the ratio of total debt to market capitalization at the close of financial year of the firm.
5. Capital Expenditure Intensity (*CapXint*): This variable was calculated as a ratio of capital expenditure to total assets of the firm.

To control for country, year, and industry effects, dummy variables were used.

In the long run, economic fundamentals are the important determinants of stock market prices' movements [73]. Therefore, GDP growth rate and yearly stock market returns were used as country-level control variables, which are defined as follows:

1. GDP Growth rate (*GDPGR*): This shows the annual percentage growth rate of GDP at market prices based on constant local currency.
2. Stock Market Return (STMRET): This is the growth rate of annual average stock market of the country.

3.5. The Model Specification

This study employed the [69] value relevance dynamic model for empirical analysis. This model relates the financial information and other value-relevant information of a firm with its market value of equity along with the lag value of dependent variables. The basic value relevance model can be written as follows;

$$P_{it} = \beta_0 + \gamma P_{it-1} + \sum \lambda_{n1} X_{it} + \sum \lambda_{n2} Y_{it} + \sum \lambda_{n3} Z_{jt} + \varepsilon_{it} \quad (1)$$

where i = 1,2,3, . . . , N and t = 1, 2, 3, . . . , T

P_{it} = Market value of equity (per share) for firm i at time t.
P_{it-1}=Lag value of market value of equity (per share) for firm i at time t − 1
X_{it} = is a vector denoting firm-level variables.
Y_{it} = is a vector variable denoting other value relevant information for firm i at time t.
Z_{jt} = is a vector denoting country-level variables.
ε_{it} = is the ith error term at time t.

After incorporating the independent variables, i.e., book value per share and the earnings per share and the firm-level control variables, i.e., the firm's size, leverage, and capital

expenditure intensity and country-level control variables (i.e., Yearly Stock Market return and GDP growth) in the basic model (1), we obtain the following baseline price model:

$$P_{it} = \lambda_0 + \gamma P_{it-1} + \lambda_1 BVPS_{it} + \lambda_2 EPS_{it} + \lambda_3 LNTA_{it} + \lambda_4 LEV_{it} + \lambda_5 GDPGR_{jt} + \lambda_6 STMRET_{jt} + \lambda_7 CapXint_{it} + \varepsilon_{it} \quad (2)$$

where

P_{it} = Market value of equity per share at the close of financial year of the firm
$BVPS_{it}$ = Book Value per share at the close of financial year of the firm
$LNTA_{it}$ = Natural log of total assets at the close of financial year of the firm
LEV_{it} = Ratio of the total debt and market capitalization at year end.
EPS_{it} = Earnings per share were calculated as net income divided by no. of outstanding shares.
$CapXint_{it}$ = is the capital expenditure intensity which was calculated as the ratio of capital expenditure and total assets of the firm.
$GDPGR_{jt}$: Shows the annual percentage growth rate of GDP at market prices based on constant local currency.
$STMRET_{jt}$: is the growth rate of the annual average stock market of the country.
ε_{it} = Error term of the regression model

Model (2) is a baseline model which relates the relevant independent and control variables with the dependent variable, i.e., stock market price. Variables were added to the baseline model to see their value relevance in the model. Accordingly, the variable of interest, i.e., CSP was added to the baseline model (2) to examine its value relevance, and the following model is specified:

$$P_{it} = \lambda_0 + \gamma P_{it-1} + \lambda_1 BVPS_{it} + \lambda_2 EPS_{it} + \lambda_3 CSPit + \lambda_4 LNTA_{it} + \lambda_5 LEV_{it} + \lambda_6 GDPGR_{jt} + \lambda_7 STMRET_{jt} + \lambda_8 CapXint_{it} + \varepsilon_{it} \quad (3)$$

In model (3), the value and significance of the coefficient λ_3 shows the value relevance of CSP.

3.6. Estimation of the Models

This study examined the value relevance of CSP of firms by employing panel data on one hundred and thirteen (113) firms belonging to Twelve (12) countries for the period 2015–2020. For panel data, dynamic model estimation techniques, i.e., GMM and the static model estimations, i.e., fixed effect and random effect are available. The dynamic model can control for econometric issues in the data such as autocorrelation, heteroscedasticity and endogeneity that are prevalent in data (see Tables 8–10). In view of the results of pre-diagnostic tests, the two steps system GMM were employed for estimation of the econometric models to control for the econometric issues in the data, i.e., autocorrelation, heteroscedasticity and endogeneity [59].

4. Results and Discussion

4.1. Measuring CSP of Firms (the Sustainability Index)

By using the GRI standards, 2016, fifty six (56) voluntary disclosure indicators were identified and included in the sustainability index used for measuring CSP of firms. These indicators cover the three dimensions of corporate sustainability, i.e., economic, social and environmental. Out the 56 indicators, 10 indicators measure the economic performance, 21 indicators are for the environmental performance, and 25 indicators measure the social performance of a firm.

Using the scoring system (1, 0) as adopted by [39,40], CSP score for each firm-year was determined. If a firm discloses information on a particular indicator in the sustainability report, a value of '1' was assigned to it, and otherwise a value of '0' was assigned. In this way, all the indicators were assigned values. The grand score for each firm-year was obtained by adding up the individual dimension scores. For example, if a firm disclosed information on 7, 15, and 20 indicators of economic, environmental, and social dimensions, respectively, then the score of the firm would be 7/10 for economic performance, 15/21 for

environmental performance, and 20/25 for social performance. The grand sustainability score of the firm would be equal to (7/10 + 15/21 + 20/25).

Table A3 in Appendix A provides details of response of sample firms on each indicator of the Sustainability Index. The aggregate percentage score shows that the average CSP score on economic performance was low for the sample period as compared with the environmental and social performance for the sample firms. These results are consistent with the study by [67], who used the GRI 2000 guidelines for the evaluation of 1999 reports of the 40 largest global industrial companies. On the basis of their evaluation of sustainability reports of the sample firms, they reported a lower score for economic and social dimensions of sustainability. The results are also consistent with the study by [74] who reported a lower score for social dimensions of sustainability and a reasonably good score for the environmental dimension. Further, these results are inconsistent with the empirical results of the study by [42], who reported a better score for economic dimensions of sustainability as compared with the environmental and social dimensions for Indian companies.

A synthesis of the economic dimension's score of CSP showed that the average score for financial implications and other risks and opportunities due to climate change was 64%, communication and training about anti-corruption policies and procedures was 61%, and the average score for operations assessed for risk related corruption was 71%. The indicator 'ratio of entry level wage by gender compared to local minimum wage' received a relatively lower score of 27%. The voluntary disclosure score on environmental performance was relatively better than the other dimensions of corporate sustainability. In the environmental dimension, the score was high for the energy- and emissions-related indicators. For example, energy consumption within the organization showed a score of 92%, the emission of (scope1) GHG was 94%, the emission of (scope2) GHG was also 94%, and the GHG emission intensity score was 79%. The overall score was low for the reclaimed products and their package materials, i.e., 19%.

The sample firms scored low on the social dimension of corporate sustainability. The scores on the indicators relating to employment, training, and education were good. The disclosure score on new employee hires and turnover was 76%, programs for upgrading employees' skills and transition assistance programs was 70%, and the percentage of employees receiving regular performance and career development reviews was 70%. The indicator regarding incidents of violations involving the rights of indigenous peoples reported the lowest score, i.e., 25%.

The above analysis show gaps in the CSP of sample firms; the sustainability score suggests that, on average, the firms exhibited good performance on the environmental dimension; however, they showed a relatively weak performance for the economic and social dimensions of sustainability. Therefore, the firms should be encouraged to focus on economic and social dimensions of their sustainability performance.

Table 2 provides a country-wise summary of average CSP score on the three dimensions of Corporate Sustainability, i.e., economic, environmental, and social. The table shows that the disclosure scores for Germany and Spain were high on all the three dimensions of corporate sustainability during the sample period 2015–2020. The reason for the high scores of Germany and Spain is that the sample firms belonging to these two countries have consistently reported their sustainability performance according to the GRI framework. The United States and Switzerland performed well on the environmental dimension. This shows greater environmental awareness in these countries. France and Brazil showed good scores on the economic dimension. Korea performed well on the environmental and social dimensions. The firms in Korea have consistently reported sustainability activities on the GRI framework, which signifies their high and consistent performance especially in the economic and social dimensions. However, the overall performance of the firms belonging to Australia, UK, Sweden, and Finland has been below the average.

Table 2. Country-wise average score for the three dimensions of sustainability.

Country	Economic	Environmental	Social
Australia	0.40	0.49	0.37
Finland	0.41	0.55	0.39
France	0.62	0.59	0.48
Germany	0.72	0.80	0.71
Japan	0.52	0.77	0.48
Korea	0.59	0.72	0.65
Spain	0.80	0.83	0.81
Sweden	0.25	0.47	0.28
Switzerland	0.53	0.66	0.51
United Kingdom	0.34	0.53	0.43
United States	0.47	0.62	0.46
Brazil	0.63	0.60	0.57
Overall Score	0.51	0.63	0.50

4.2. Correlation

Table 3 shows the correlation coefficients for the dependent and independent variables of the study. In all the cases, the correlation values of the explanatory variables were below 0.70 which indicated that there was no problem of multicollinearity in the data. Table 4 provides the variance inflation factors (VIF) for all the variables of the study. The VIF values showed low-to-moderate correlations for all the variables, which also confirms that there was no multicollinearity in the data.

Table 3. Correlation matrix.

Variables	1	2	3	4	5	6	7	8	9
P	1								
BVPS	0.6136	1							
EPS	0.7378	0.6941	1						
CSP	0.1543	0.0816	0.1044	1					
STMRET	0.043	−0.0155	0.0294	−0.0584	1				
GDPGR	0.0666	0.0523	0.1127	−0.0899	0.2989	1			
LEV	−0.1339	0.2231	−0.03	0.1144	−0.0404	−0.1439	1		
LNTA	0.0255	0.449	0.1558	0.1975	0.0098	0.0109	0.3067	1	
CAPXINT	0.0319	0.0122	0.0757	−0.0909	0.0244	0.1107	−0.0352	−0.002	1

P is stock market price of firm i at time t. CSPit shows the sustainability performance of firm i at time t. BVPS, EPS, LEV, LNTA, and CAPXINT are the firm-level variables showing book value per share, earnings per share, leverage ratio, and capital expenditure intensity. STMRET and GDPGR are country-level variables showing yearly stock market return for the country and GDP growth rate respectively.

4.3. Descriptive Statistics

4.3.1. The Corporate Sustainability Performance Score

Table 5 provides country- and year-wise sustainability scores for the sample firms during the period 2015–2020. The summary statistics of CSP score showed that, overall, the sustainability score of the sample firms improved over the period 2015–2020. However, the high sample standard deviations showed differences in the reporting practices among the firms. The average CSP score for firms belonging to Germany, Spain, and Korea were high for the sample period as compared with the rest of the sample countries. This is due to the consistent application of GRI standards by the firms of these countries. However, firms belonging to Finland, Sweden, the UK, and the US had low CSP scores.

Table 4. Variance inflation factors.

Variable	VIF	1/VIF
BVPS	2.85	0.351445
EPS	2.62	0.381651
LNTA	1.61	0.620479
LEV	1.34	0.745705
CSP	1.21	0.828336
CAPXINT	1.19	0.842037
GDPGR	1.17	0.851976
STMRET	1.11	0.896905
Mean	1.55	

Notes: BVPS, EPS, LEV, LNTA, and CAPXINT are the firm-level variables showing book value per share, earnings per share, leverage ratio, and capital expenditure intensity. STMRET and GDPGR are country-level variables showing yearly stock market return for the country and GDP growth rate respectively.

Table 5. Country- and year-wise sustainability score.

S.No	Countries	Description	2015	2016	2017	2018	2019	2020
1	Australia	Mean	1.2653175	1.3893651	1.3235715	1.4280952	1.3030159	1.3357143
		Std. Dev.	0.85531334	0.70944111	0.635491	0.7553158	0.70245966	0.66071598
		No. of firms	12	12	12	12	12	12
2	Brazil	Mean	1.9738776	1.8559184	1.662449	1.6785034	1.9998639	2.0187755
		Std Dev	0.86928592	0.8488749	0.82713227	0.8090826	0.52001205	0.56430339
		No. of firms	7	7	7	7	7	7
3	Finland	Mean	1.3061472	1.3335931	1.3524675	1.3261472	1.3609524	1.4807792
		Std Dev	0.65937539	0.78941114	0.84796295	0.79575042	0.72516163	0.58863322
		No. of firms	11	11	11	11	11	11
4	France	Mean	1.6888889	1.7247619	1.4038095	1.9	1.8457143	1.6190476
		Std Dev	0.68145783	0.53852243	0.97694558	0.68175308	0.99301823	1.0004094
		No. of firms	3	3	3	3	3	3
5	Germany	Mean	2.2077922	2.1508225	2.3391342	2.2909091	2.178355	2.1815585
		Std Dev	0.79728984	0.7791443	0.66937415	0.49675563	0.52029174	0.5939482
		No. of firms	11	11	11	11	11	11
6	Japan	Mean	1.4614815	1.4881481	1.7478307	1.9447619	1.9584127	2.1017989
		Std Dev	0.71663107	0.71329932	0.5431041	0.4521839	0.49172149	0.52473736
		No. of firms	9	9	9	9	9	9
7	Korea	Mean	1.8	1.8807407	2.134709	2.0201058	2.0243386	1.9365079
		Std Dev	0.62490197	0.56679044	0.3819235	0.42992601	0.40604448	0.4632457
		No. of firms	9	9	9	9	9	9
8	Spain	Mean	2.3704762	2.4221164	2.4648677	2.4959788	2.5465608	2.3541799
		Std Dev	0.4563371	0.44639213	0.33859236	0.29743678	0.38107424	0.69589263
		No. of firms	9	9	9	9	9	9
9	Sweden	Mean	1.092381	1.189697	1.2752381	1.3131602	1.3148052	1.3339394
		Std Dev	0.46764173	0.58298222	0.52566872	0.49747495	0.45115129	0.46579808
		No. of firms	11	11	11	11	11	11
10	Switzerland	Mean	1.8909957	1.8077922	1.8979221	1.6746321	1.7490043	1.831342
		Std Dev	0.79483701	0.7590531	0.65115311	0.796178	0.73949844	0.71275856
		No. of firms	11	11	11	11	11	11
11	United Kingdom	Mean	1.2448677	1.2540741	1.5212698	1.5125926	1.5951323	1.5793651
		Std Dev	0.59980091	0.62825586	0.70547503	0.6412682	0.61060813	0.63755541
		No. of firms	9	9	9	9	9	9
12	United States	Mean	1.4181818	1.4914286	1.5031169	1.5974892	1.6648485	1.730303
		Std Dev	0.70750529	0.67359301	0.74229038	0.7530818	0.75379007	0.76346839
		No. of firms	11	11	11	11	11	11

Table 6 shows the industry-wise average CSP score of the sample firms. Most of the sample firms belong to three major industries, i.e., manufacturing (no. of firms 31), chemical and allied products (no. of firms 16), and other industry (no. of firms 38). Firms belonging to these industries make up 75% of the study sample. The other industries represent only 25% of the study sample and have no. of firms in the range of 1–6.

Table 6. Industry-wise summary of CSP score.

Industry	No. of Obs	Mean	Median	Std. Dev.
Business Equipment	36	1.792857	1.679045	0.759309
Chemicals and Allied Product	96	1.806557	1.76286	0.81614
Consumer Durable Goods	12	1.904204	1.97333	0.508239
Consumer Non-Durable Goods	18	1.795872	1.841905	0.573879
Energy	30	2.191429	2.47714	0.66686
Finance	6	1.490637	1.47905	0.415483
Healthcare	12	1.953492	1.93905	0.257206
Manufacturing	186	1.815709	1.724285	0.643732
Oil, Gas, and Co	18	1.52037	1.60048	0.943353
Other	228	1.517302	1.45905	0.717144
Telephone	6	1.73651	1.67905	0.227133
Wholesale, Retail	30	1.585366	1.50524	0.836665
Total	678	1.711343	1.696665	0.72599

The average CSP score for the manufacturing industry is high as compared with the two other major industries, i.e., chemical and other industry. The average score of chemical (1.80) and manufacturing industries (1.81) was above the sample average (1.71). However, the standard deviation showed a high variability in the CSP score for the chemical industry.

4.3.2. Country and Firm-Level Variables

Table 7 shows the summary statistics for all the other study variables. The market price per share (P), which is the dependent variable, had a mean value of $61.12, whereas it had a maximum value of $476 and minimum value of $1. This shows a greater variability in the share prices of the sample firm. The skewness of P was 2.99, which is within the normal range, i.e., (−3, +3). The kurtosis of P was 13.56, which is very close to the normal range, i.e., (−10, +10); therefore, it is expected that the variable is normally distributed.

Table 7. Descriptive statistics.

Variable	Min	Max	Mean	Sd	Skewness	Kurtosis
P	1	476	61.12094	85.04275	2.995463	13.56658
BVPS	−34	254	32.0826	43.37384	2.474277	9.937813
EPS	−22	33	3.266962	5.741178	1.921718	9.778511
CSP	0.14	3	1.711018	0.725533	−0.073819	2.107996
STMRET	−17.6994	29.17823	3.923112	9.567019	0.1343676	2.76372
GDPGR	−10.82	4.49	0.973304	2.803912	−2.203399	8.152719
LEV	0.001171	3.73037	0.616261	0.717158	2.199089	7.943286
INTA	12	26	17.53097	2.686706	1.109323	3.722951
CAPXINT	0.001317	0.254902	0.044285	0.036561	2.243118	10.13911

Notes: P is stock market price of firm i at time t. CSP_{it} shows the sustainability performance of firm i at time t. BVPS, EPS, LEV, LNTA, and CAPXINT are the firm-level variables showing book value per share, earnings per share, leverage ratio, and capital expenditure intensity respectively. STMRET and GDPGR are country-level variables showing yearly stock market return for the country and GDP growth rate respectively.

The variable of interest, i.e., Corporate Sustainability Performance (CSP), had a mean value of 1.71, a maximum value of 3m and a minimum value of 0.14 with a Std Dev of 0.72. These values suggest a greater variability in CSP across the sample. However, the skewness and kurtosis values of CSP were within the permissible ranges; therefore, the variable is normally distributed. Similarly, the independent variables of the study, i.e., book value per share (*BVPS*) and earning per share (*EPS*), had greater variability but had a normal

distribution. All the country-level and firm-level variables had skewness and kurtosis values within the permissible range and therefore are normally distributed.

4.4. Empirical Results

To check the data for econometric issues, pre-diagnostic tests on the data were performed. The Wooldrige test for Autocorrelation (Table 8) had a value of 85.591 (p-value = 0.000); hence, the Null hypothesis of no first order correlation was rejected at the 1% significance level. In the same fashion, the Breusch–Pagan/Cook–Weigberg test (Table 9) had a value of 643.22 (p-value = 0.000), rejecting the null hypothesis of constant variance at the 1% significance level. Similarly, the endogeneity test (Table 10) with Durbin Score = 13.1698 (p-value = 0.000) and Wu–Hausman test statistic = 12.6965 (p-value = 0.000) rejected the null hypothesis that the variables are exogenous. Therefore, the pre-diagnostic test showed that the data suffer from autocorrelation, heteroscedasticity, and endogeneity. To control for these econometric issues in the data, the two-step system GMM was employed for empirical analysis of the study.

Table 8. Wooldridge test for autocorrelation in the panel data.

H0: No First-Order Autocorrelation
F(1, 112) = 85.591
Prob > F = 0.0000

Table 9. Breusch–Pagan/Cook–Weisberg test for heteroscedasticity.

H0: Constant Variance
Variables: fitted values of p
chi2(1) = 643.22
Prob > chi2 = 0.0000

Table 10. Tests of endogeneity.

H0: Variables Are Exogenous
Durbin (score) chi2(1) = 13.1698 (p = 0.0003)
Wu–Hausman F(1532) = 12.6965 (p = 0.0004)
Durbin (score) chi2(1) = 13.1698 (p = 0.0003)
Wu–Hausman F(1532) = 12.6965 (p = 0.0004)

Table 11 shows the results of dynamic panel data estimation of the value relevance model (2) and model (3) of the study. Model (2) is the baseline value relevance model without incorporating the variable of interest, i.e., CSP, whereas CSP was incorporated in model (3). For both the models, the post-estimation diagnostic test showed that AR(2) was insignificant, i.e., p-value > 10%, which suggests that the models do not suffer from second-order serial autocorrelation. The Hansen test, which has a null hypothesis that the model has valid instrumental variables, was insignificant, i.e., p-value > 10%. Therefore, we cannot reject the null hypothesis and can infer that both the models have valid instruments. Further, the F-statistic values for model (2) and model (3) were 496.780 (p-value = 0.000) and 478.530 (p-value = 0.000) respectively. In both the cases, values were significant at 1%, which shows that, in both the models, the independent variables significantly explained the variation in dependent variable (P).

The empirical results of model (3) (Table 10) showed that the variable of interest, i.e., CSP had a positive and statistically significant impact on the dependent variable, i.e., stock market price (P) with coefficient (λ) equal to 4.769 (p-value = 0.092). It implies that CSP significantly impacts and explains variations in the stock market prices (P). Therefore, we can infer that CSP is value-relevant, which supports our study hypothesis, i.e.:

H1: *The Corporate Sustainability Performance (CSP) of firms is value-relevant.*

Empirical results of the study support the shareholders' value-enhancing theory about corporate sustainability. Therefore, these results are consistent with the existing literature on the value relevance of corporate sustainability. The present study supports the study by [46], who showed that CSP has more explanatory power to account for variation in the stock market prices as compared with traditional accounting measures. The findings of this study are also consistent with studies such as [47–51], as all of these studies support the value relevance of CSP. Accordingly, this study supports the view that sustainability activities enhance the market value of stocks in the long run. However, the empirical results are inconsistent with some existing studies such as [22,25,56,58] which do not support the value relevance of CSP.

Table 11. Dynamic panel-data estimation, two-step system GMM.

	Model (2)		**Model (3)**	
Variables	**Coefficients**	***p*-Value**	**Coefficients**	***p*-Value**
P_{t-1}	0.719 ***	0.000	0.737 ***	0.000
BVPS	0.368	0.119	0.129	0.222
EPS	2.161 ***	0.001	2.423 ***	0.001
CSP	-	-	4.769 *	0.092
STMRET	0.282 **	0.033	0.229 *	0.1
GDPGR	−0.381	0.288	−0.598 *	0.067
LEV	−7.254	0.163	−7.325	0.16
LNTA	−24.596 *	0.069	−3.105 **	0.043
CAPXINT	−123.688 *	0.047	27.622	0.605
Constant	2.515 *	0.069	121.701	0.388
Country Dummy	Yes		Yes	
Industry Dummy	Yes		Yes	
Year Dummy	Yes		Yes	
No. of Observations	565		565	
No. of Countries	12		12	
No. of Firms	113		113	
No. of Instruments	37		37	
AR(1)	−3.420 ***	0.000	−3.490 ***	0.000
AR(2)	−0.91	0.363	0.80	0.422
Hansen Test Statistic	0.000	1	0.000	1
F-Statistics	496.780 ***	0.000	478.530 ***	0.000

Note: *, **, and *** represent significance level at 10%, 5%, and 1% respectively. P is stock market price of firm i at time t. CSPit shows the sustainability performance of firm i at time t. BVPS, EPS, LEV, LNTA, and CAPXINT are the firm-level variables showing book value per share, earnings per share, leverage ratio, and capital expenditure intensity. STMRET and GDPGR are country-level variables showing yearly stock market return for the country and GDP growth rate respectively.

4.5. Robustness

The robustness tests were performed by employing alternative methodology for empirical analysis of the value relevance of CSP. Based on Hausman test and excluding the lag value of P_{it} from model (2) and model (3), both the models were estimated using the fixed-effect panel data technique. The results are provided in Table 12. The results show that CSP was highly significant with a coefficient of 5.725 (p-value = 0.021). Except the variable of GDP growth rate, all the independent variables were also significant. The explanatory power of the model increased after including CSP in the model. The positive and significant coefficient and increase in the explanatory power of the model suggests that CSP is value-relevant. This empirical results support the main results of the study.

Table 12. Fixed effect regression results (dependent variable = P_{it}).

Variable	Model (2)		Model (3)	
	Coef.	***p*-Value**	**Coef.**	***p*-Value**
BVPS	0.584 ***	0.000	0.589 ***	0.000
EPS	1.329 ***	0.000	1.299 ***	0.000
CSP	-	-	5.725 **	0.021
STMRET	0.275 ***	0.003	0.272 ***	0.003
GDPGR	−0.166	0.597	−0.099	0.754
LEV	−11.912 ***	0.000	−12.109 ***	0.000
LNTA	11.045 ***	0.00	11.111 ***	0.000
CAPXINT	107.049 ***	0.014	111.054 ***	0.011
CONSTANT	−153.905 ***	0.002	−165.024 ***	0.001
R-sq	0.2213		0.2253	
F	40.08 ***	0.000	38.54 ***	0.000
No. of Obs	678		678	
No. of Of Countries	12		12	
No. of firms	113		113	

Note: **, and *** represent significance level at 5%, and 1% respectively. P is stock market price of firm i at time t. CSPit shows the sustainability performance of firm i at time t. BVPS, EPS, LEV, LNTA, and CAPXINT are the firm-level variables showing book value per share, earnings per share, leverage ratio, and capital expenditure intensity. STMRET and GDPGR are country-level variables showing yearly stock market return for the country and GDP growth rate respectively.

Additionally, quantile regressions were also run for the model (3). The results of quantile regressions are provided in Table 13. The results show that the variable of interest, i.e., CSP is significant for 25%, 50%, and 75%. This shows that the variable CSP is not skewed and provides similar results for small and large values of share price.

Table 13. Quantile regressions (dependent variable = P_{it}).

Variables	25%		50%		75%	
	Coef.	***p*-Value**	**Coef.**	***p*-Value**	**Coef.**	***p*-Value**
BVPS	0.448 ***	0	0.743 ***	0	1.314 ***	0
EPS	4.177 ***	0	7.172 ***	0	6.929 ***	0
CSP	1.956 ***	0.003	2.655 **	0.025	6.807 **	0.012
STMRET	0.048	0.351	0.219 ***	0.015	0.319	0.104
GDPGR	−0.052	0.756	−0.310	0.322	−0.696	0.299
LEV	− 6.696 ***	0	−9.717 ***	0	5.964 *	0.067
LNTA	−0.931 ***	0	−2.339 ***	0	−4.076 ***	0
CAPXINT	39.081 ***	0.001	−37.260 *	0.098	−56.915	0.283
CONSTANT	21.905 ***	0	47.254 ***	0	76.895 ***	0
Pseudo R-square	0.3583		0.4163		0.4789	
No. of Obs	678		678		678	
No. of Of Countries	12		12		12	
No. of firms	113		113		113	

Note: *, **, and *** represent significance level at 10%, 5%, and 1% respectively. P is stock market price of firm i at time t. CSPit shows the sustainability performance of firm i at time t. BVPS, EPS, LEV, LNTA, and CAPXINT are the firm-level variables showing book value per share, earnings per share, leverage ratio, and capital expenditure intensity. STMRET and GDPGR are country-level variables showing yearly stock market return for the country and GDP growth rate respectively.

5. Conclusions and Policy Implications

5.1. Conclusions

This research study addressed the issue of measuring CSP of firms and investigated the value relevance of CSP. A Sustainability Index was constructed using the GRI framework (i.e., GRI standards, 2016). This index measures the CSP more comprehensively by covering more sustainability topics as compared with the previous indices and also covers the three dimensions of sustainability, i.e., economic, social, and environmental. The CSP of firms was measured through this index. The CSP score was then used to empirically examine the value relevance of CSP.

The [57] value relevance model was used to empirically examine the value relevance of CSP. The models were estimated using the two-step system GMM and as robustness tests, the model was also estimated through fixed-effect panel data techniques. The empirical results showed that CSP was positively and significantly related to the stock market prices. The panel data fixed-effect estimations also showed that the explanatory power of model (3) increased, in which CSP was incorporated as compared with model (2). Therefore, we conclude from the empirical results that the corporate sustainability performance of firms is value-relevant and the stock market investors should consider the sustainability activities of a firm when making their investment decisions.

Overall, the study showed that, in the long-run, sustainability activities create value for the shareholders of the firm and hence do not support the shareholders' expense theory of corporate sustainability.

5.2. Policy Implications

The results of current study have three implications for policy makers. Firstly, regulators and central governments around the world are facing a quagmire in regulating, identifying, and evaluating the sustainability performance and disclosure of firms [75]. This study facilitates policymakers in their quest for excellence in regulating corporate sustainability by providing the basis for evaluating CSP through developing a sustainability index based on the GRI framework. As it has been observed, the GRI framework provides a comprehensive and objective assessment of the sustainability performance of firms.

Secondly, the accounting standard setting process should be informed by theoretical and empirical research [35,76]. Most importantly, the value relevance research helps the standard setters to identify the relevant information [77]. Likewise, the findings of this empirical study may help the newly established International Sustainability Standard Board (ISSB) under the auspices of IFRS to identify the relevant factors for developing international standards for corporate sustainability.

Thirdly, the results of current study help policymakers to understand perceptions of the market about CSP, which implies that market forces do value sustainability performance while making their investment decisions. Hence, market pressure can be used as an effective tool for promoting CSP by providing adequate information about corporate sustainability through introducing sustainability disclosure requirements.

5.3. Suggestions for Future Research

The Sustainability Index for measuring the CSP of firms developed in this study may be used in future empirical studies involving large samples to further improve and to validate it. The proxy for the Corporate Sustainability Performance can also be further improved. For example, in the present study we measured the CSP of firms from the disclosure score on the basis of the sustainability index developed in this study. Alternatively, the CSP score may be measured from actual sustainability data reported in the sustainability reports on each indicator of the sustainability index, e.g., actual economic contribution of the firm, energy efficiency, actual hours of training imparted and financial incentive and benefits to the employees, and investment in community projects, etc. In addition, sustainability reporting is voluntary in most countries; however, in European countries the reporting of some sustainability activities has been made mandatory since 2019. Therefore, the value-

relevance framework of CSP can be further expanded through introducing voluntary and non-voluntary reporting regimes, which may help regulators to understand their role in promoting CSP.

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

Appendix A

Table A1. Study sample.

S.No	COUNTRY	GCSI 2017	FIRMS	Industry	Industry Group
1	Australia	36	BEACH ENERGY	Other	Exploration and Prod.
			DOWNER EDI	Oil, Gas, and Coal Extraction and Products	Heavy Construction
			NEWCREST MINING	Other	Gold Mining
			OCEANAGOLD	Other	Gold Mining
			ORICA	Chemicals and Allied Products	Specialty Chemicals
			ORIGIN ENERGY (EX BORAL)	Other	Multiutilities
			SANDFIRE RESOURCES	Other	General Mining
			SYDNEY AIRPORT STAPLED UNITS	Other	Transport Services
			TELSTRA	Telephone and Television Transmission	Fixed Line Telecom.
			TRANSURBAN GROUP STAPLED UNITS	Other	Transport Services
			WOOLWORTHS GROUP	Wholesale, Retail, and Some Services (Laundries, Repair Shops)	Food Retail, Wholesale
			WORLEYPARSONS	Other	Oil Equip. and Services
2	Brazil	42	BRF BRASIL FOODS ON	Consumer NonDurables	Food Products
			CIA ENERGETICA DE MINAS GERAIS	Energy	Alt. Electricity
			DURATEX ON	Manufacturing	Building Mat. and Fix.
			ENGIE BRASIL ENERGIA ON	Energy	Alt. Electricity
			LIGHT ON	Energy	Alt. Electricity

Table A1. *Cont.*

S.No	COUNTRY	GCSI 2017	FIRMS	Industry	Industry Group
			VALE ON	Other	Iron and Steel
			WEG ON	Chemicals and Allied Products	Electrical Equipment
3	Finland	2	CARGOTEC 'B'	Manufacturing	Comm. Vehicles, Trucks
			FORTUM	Other	Con. Electricity
			HUHTAMAKI	Manufacturing	Containers & Package
			KEMIRA	Chemicals and Allied Products	Specialty Chemicals
			KESKO B	Wholesale, Retail, and Some Services (Laundries, Repair Shops)	Food Retail, Wholesale
			KONE 'B'	Wholesale, Retail, and Some Services (Laundries, Repair Shops)	Industrial Machinery
			KONECRANES	Manufacturing	Comm. Vehicles, Trucks
			SANOMA	Wholesale, Retail, and Some Services (Laundries, Repair Shops)	Publishing
			STORA ENSO R	Manufacturing	Paper
			WARTSILA	Other	Industrial Machinery
			YIT	Other	Heavy Construction
4	France	19	ATOS	Business Equipment	Computer Services
			COVIVIO	Other	Ind. and Office REITs
			TECHNICOLOR	Business Equipment	Broadcast & Entertain
5	Germany	14	BASF	Chemicals and Allied Products	Commodity Chemicals
			BMW	Consumer Durables	Automobiles
			CONTINENTAL	Manufacturing	Tires
			DAIMLER	Manufacturing	Automobiles
			EVONIK INDUSTRIES	Chemicals and Allied Products	Specialty Chemicals
			K + S	Chemicals and Allied Products	Specialty Chemicals
			LANXESS	Chemicals and Allied Products	Specialty Chemicals
			MAN	Manufacturing	Comm. Vehicles, Trucks
			OSRAM LICHT	Consumer Durables	Electrical Equipment
			SYMRISE	Chemicals and Allied Products	Specialty Chemicals
			VOLKSWAGEN	Manufacturing	Automobiles

Table A1. *Cont.*

S.No	COUNTRY	GCSI 2017	FIRMS	Industry	Industry Group
6	Japan	20	DAIKIN INDUSTRIES	Chemicals and Allied Products	Building Mat. and Fix.
			IDEMITSU KOSAN	Oil, Gas, and Coal Extraction and Products	Exploration and Prod.
			ISUZU MOTORS	Manufacturing	Comm. Vehicles, Trucks
			KOBE STEEL	Manufacturing	Iron and Steel
			KOMATSU	Manufacturing	Comm. Vehicles, Trucks
			LIXIL GROUP	Manufacturing	Building Mat. and Fix.
			MITSUBISHI MOTORS	Manufacturing	Automobiles
			SUMITOMO CHEMICAL	Chemicals and Allied Products	Commodity Chemicals
			SUMITOMO ELECTRIC IND.	Manufacturing	Auto Parts
7	Korea	16	HANKOOK TIRE	Manufacturing	Tires
			HYUNDAI ENGR.& CON.	Other	Heavy Construction
			HYUNDAI GLOVIS	Other	Transport Services
			HYUNDAI MOTOR	Manufacturing	Automobiles
			HYUNDAI STEEL	Other	Iron and Steel
			KIA MOTORS	Manufacturing	Automobiles
			LG INNOTEK	Manufacturing	Electrical Equipment
			S-OIL	Other	Exploration and Prod.
			SK INNOVATION	Chemicals and Allied Products	Exploration and Prod.
8	Spain	37	ACCIONA	Other	Heavy Construction
			ACERINOX 'R'	Other	Iron and Steel
			EBRO FOODS	Consumer Non-Durables	Food Products
			IBERDROLA	Other	Con. Electricity
			INDITEX	Wholesale, Retail, and Some Services (Laundries, Repair Shops)	Apparel Retailers
			INDRA SISTEMAS	Other	Computer Services
			RED ELECTRICA	Energy	Con. Electricity
			REPSOL YPF	Oil, Gas, and Coal Extraction and Products	Integrated Oil and Gas
			SIEMENS GAMESA RENEWABLE ENERGY	Energy	Renewable Energy Eq.
9	Sweden	1	BILLERUDKORSNAS	Manufacturing	Paper
			NIBE INDUSTRIER B	Manufacturing	Building Mat. and Fix.
			NOLATO B	Other	Divers. Industrials
			RATOS B	Other	Specialty Finance
			SAAB B	Other	Aerospace

Table A1. *Cont.*

S.No	COUNTRY	GCSI 2017	FIRMS	Industry	Industry Group
			SANDVIK	Manufacturing	Industrial Machinery
			SAS	Other	Airlines
			TELE2 B	Business Equipment	Mobile Telecom.
			TRELLEBORG B	Other	Industrial Machinery
			VOLVO B	Manufacturing	Comm. Vehicles, Trucks
			WIHLBORGS FASTIGHETER	Other	Real Estate Hold, Dev
10	Switzerland	7	ABB LTD N	Business Equipment	Industrial Machinery
			ADECCO GROUP	Other	Bus, Train, and Employment
			CLARIANT	Chemicals and Allied Products	Specialty Chemicals
			GEBERIT 'R'	Manufacturing	Building Mat. and Fix.
			GEORG FISCHER	Manufacturing	Industrial Machinery
			GIVAUDAN 'N'	Chemicals and Allied Products	Specialty Chemicals
			MEYER BURGER TECH	Other	Industrial Machinery
			NOVARTIS 'R'	Healthcare, Medical Equipment, and Drugs	Pharmaceuticals
			RICHEMONT N	Consumer Non-Durables	Clothing & Accessory
			SCHINDLER 'R'	Business Equipment	Industrial Machinery
			SGS 'N'	Other	Business Support Svs.
			SIKA	Other	Building Mat. and Fix.
			STRAUMANN HOLDING	Healthcare, Medical Equipment, and Drugs	Medical Supplies
			SWISSCOM 'R'	Business Equipment	Fixed Line Telecom.
11	United Kingdom	22	ANGLO AMERICAN	Other	General Mining
			DERWENT LONDON HAMMERSON	Other Other	Ind. & Office REITs Retail REITs
			IMPERIAL BRANDS	Other	Tobacco
			JOHNSON MATTHEY	Chemicals and Allied Products	Specialty Chemicals
			KINGFISHER	Other	Home Improvement Ret.
			RELX	Other	Publishing
			RIO TINTO	Other	General Mining
			WPP	Other	Media Agencies
12	United States	29	ALBEMARLE	Chemicals and Allied Products	Specialty Chemicals
			BALL	Manufacturing	Containers and Package
			BERRY GLOBAL GROUP	Manufacturing	Containers and Package
			FMC	Chemicals and Allied Products	Specialty Chemicals

Table A1. *Cont.*

S.No	COUNTRY	GCSI 2017	FIRMS	Industry	Industry Group
			FORD MOTOR	Manufacturing	Automobiles
			GENERAL MOTORS	Manufacturing	Automobiles
			INGERSOLL-RAND	Manufacturing	Industrial Machinery
			INTL.FLAVORS & FRAG.	Chemicals and Allied Products	Specialty Chemicals
			SCHLUMBERGER	Manufacturing	Oil Equip. and Services
			TARGET	Other	Broadline Retailers
			TENNANT	Manufacturing	Comm. Vehicles, Trucks

Table A2. Indicators included in the Sustainability Index.

Aspects	Indicators	G4 Guidelines	GRI Standard
	Economic		
Economic Performance	Financial implications and other risks and opportunities due to climate change	G4-EC2	201-2
	Financial assistance received from government	G4-EC4	201-4
Market Presence	Ratios of standard entry level wage by gender compared to local minimum wage	G4-EC5	202-1
	Proportion of senior management hired from the local community	G4-EC6	202-2
	Infrastructure investments and services supported	G4-EC7	203-1
Procurement Practices	Proportion of spending on local suppliers	G4-EC9	204-1
	Operations assessed for risks related to corruption	G4-SO3	205-1
	Communication and training about anti-corruption policies and procedures	G4-SO4	205-2
	Confirmed incidents of corruption and actions taken	G4-SO5	205-3
Anti-Competitive Practices	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	G4-SO7	206-1
	Environment		
Material	Materials used by weight or volume	G4-EN1	301-1
	Recycled input materials used	G4-EN2	301-2
	Reclaimed products and their packaging materials	G4-EN28	301-3

Table A2. *Cont.*

Aspects	Indicators	G4 Guidelines	GRI Standard
Energy	Energy consumption within the organization	G4-EN3	302-1
	Energy consumption outside of the organization	G4-EN4	302-2
	Energy intensity	G4-EN5	302-3
	Reduction of energy consumption	G4-EN6	302-4
	Reductions in energy requirements of products and services	G4-EN7	302-5
Water	Total Water withdrawal by source	G4-EN8	303-1
Emissions	Direct (Scope 1) GHG emissions	G4-EN15	305-1
	Energy indirect (Scope 2) GHG emissions	G4-EN16	305-2
	Other indirect (Scope 3) GHG emissions	G4-EN17	305-3
	GHS emission intensity	G4-EN18	305-4
	Reduction of GHG emissions	G4-EN19	305-5
	Emission of Ozone-depleting Substances (ODS)	G4-EN20	305-6
	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	G4-EN21	305-7
Effluents and Waste	Water discharge by quality and destination	G4-EN22	306-1
	Waste by type and disposal method	G4-EN23	306-2
Environmental Compliance	Non-compliance with environmental laws and regulations	G4-EN29	307-1
Supplier Environmental Assessment	New suppliers that were screened using environmental criteria	G4-EN32	308-1
	Negative environmental impacts in the supply chain and actions taken	G4-EN33	308-2
	Social		
Employment	New employee hires and employee turnover	G4-LA1	401-1
	Benefits provided to full-time employees that are not provided to temporary or part-time employees	G4-LA2	401-2

Table A2. *Cont.*

Aspects	Indicators	G4 Guidelines	GRI Standard
Training and Education	Average hours of training per year per employee	G4-LA9	404-1
	Programs for upgrading employee skills and transition assistance programs	G4-LA10	404-2
	Percentage of employees receiving regular performance and career development reviews	G4-LA11	404-3
Non-Discrimination	Ratio of basic salary and remuneration of women to men	G4-LA13	405-2
	Incidents of discrimination and corrective actions taken	G4-HR3	406-1
Freedom of Association and Collective Bargaining	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	G4-HR4	407-1
Child Labor	Operations and suppliers at significant risk for incidents of child labor	G4-HR5	408-1
	Operations and suppliers at significant risk for incidents of forced or compulsory labor	G4-HR6	409-1
Rights of Indigenous Peoples	Incidents of violations involving rights of indigenous peoples	G4-HR8	411-1
Human Rights Assessment	Operations that have been subject to human rights reviews or impact assessments	G4-HR9	412-1
	Employee training on human rights policies or procedures	G4-HR2	412-2
	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	G4-HR1	412-3
Local Communities	Operations with local community engagement, impact assessments, and development programs	G4-SO1	413-1
	Operations with significant actual and potential negative impacts on local communities	G4-SO2	413-2

Table A2. *Cont.*

Aspects	Indicators	G4 Guidelines	GRI Standard
Supplier Social Assessment	New suppliers that were screened using social criteria	G4-SO9/LA14/HR10	414-1
	Negative social impacts in the supply chain and actions taken	G4-SO10/LA15/HR11	414-2
Customer Health and Safety	Assessment of the health and safety impacts of product and service categories	G4-PR1	416-1
	Incidents of non-compliance concerning the health and safety impacts of products and services	G4-PR2	416-2
Marketing and Labeling	Requirements for product and service information and labeling	G4-PR3	417-1
	Incidents of non-compliance concerning product and service information and labeling	G4-PR4	417-2
	Incidents of non-compliance concerning marketing communications	G4-PR7	417-3
Customer Privacy	Substantiated complaints concerning breaches of customer privacy and losses of customer data	G4-PR8	418-1
Socioeconomic Compliance	Non-compliance with laws and regulations in the social and economic area	G4-PR9/SO8	419-1

Table A3. Disclosure score on each indicator of the sustainability index.

Dimension	Indicators	Firms Disclosure	
Economic		Nos.	% age
1.	Financial implications and other risks and opportunities due to climate change	432	64
2.	Financial assistance received from government	281	41
3.	Ratios of standard entry level wage by gender compared to local minimum wage	186	27
4.	Proportion of senior management hired from the local community	226	33
5.	Infrastructure investments and services supported	356	53
6.	Proportion of spending on local suppliers	318	47
7.	Operations assessed for risks related to corruption	411	61
8.	Communication and training about anti-corruption policies and procedures	483	71
9.	Confirmed incidents of corruption and actions taken	381	56
10.	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	376	55

Table A3. *Cont.*

Dimension		Indicators	Firms Disclosure	
Environmental				
	1.	Materials used by weight or volume	356	53
	2.	Recycled input materials used	292	43
	3.	Reclaimed products and their packaging materials	130	19
	4.	Energy consumption within the organization	622	92
	5.	Energy consumption outside of the organization	289	43
	6.	Energy intensity	478	71
	7.	Reduction of energy consumption	502	74
	8.	Reductions in energy requirements of products and services	336	50
	9.	Total Water withdrawal by source	480	71
	10.	Direct (Scope 1) GHG emissions	637	94
	11.	Energy indirect (Scope 2) GHG emissions	636	94
	12.	Other indirect (Scope 3) GHG emissions	507	75
	13.	GHS emission intensity	535	79
	14.	Reduction of GHG emissions	498	73
	15.	Emission of Ozone-depleting Substances (ODS)	262	39
	16.	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	402	59
	17.	Water discharge by quality and destination	357	53
	18.	Waste by type and disposal method	526	78
	19.	Non-compliance with environmental laws and regulations	467	69
	20.	New suppliers that were screened using environmental criteria	396	58
	21.	Negative environmental impacts in the supply chain and actions taken	314	46
Social				
	1.	New employee hires and employee turnover	513	76
	2.	Benefits provided to full-time employees that are not provided to temporary or part-time employees	320	47
	3.	Average hours of training per year per employee	464	68
	4.	Programs for upgrading employee skills and transition assistance programs	477	70
	5.	Percentage of employees receiving regular performance and career development reviews	473	70
	6.	Ratio of basic salary and remuneration of women to men	326	48
	7.	Incidents of discrimination and corrective actions taken	372	55
	8.	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	353	52
	9.	Operations and suppliers at significant risk for incidents of child labor	372	55
	10.	Operations and suppliers at significant risk for incidents of forced or compulsory labor	381	56
	11.	Incidents of violations involving rights of indigenous peoples	170	25
	12.	Operations that have been subject to human rights reviews or impact assessments	279	41

Table A3. *Cont.*

Dimension	Indicators	Firms	Disclosure
13.	Employee training on human rights policies or procedures	327	48
14.	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	245	36
15.	Operations with local community engagement, impact assessments, and development programs	374	55
16.	Operations with significant actual and potential negative impacts on local communities	250	37
17.	New suppliers that were screened using social criteria	396	58
18.	Negative social impacts in the supply chain and actions taken	322	47
19.	Assessment of the health and safety impacts of product and service categories	392	58
20.	Incidents of non-compliance concerning the health and safety impacts of products and services	323	48
21.	Requirements for product and service information and labeling	284	42
22.	Incidents of non-compliance concerning product and service information and labeling	257	38
23.	Incidents of non-compliance concerning marketing communications	213	31
24.	Substantiated complaints concerning breaches of customer privacy and losses of customer data	271	40
25.	Non-compliance with laws and regulations in the social and economic area	401	59

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