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A Cross-Country Investigation of Corporate Governance and Corporate Sustainability Disclosure: A Signaling Theory Perspective

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Abstract: There is a dearth of research on corporate governance and total sustainability disclosure (economic, environmental, and social) in developing, particularly South Asian, countries. This is unique cross-country research on South Asian countries' corporate governance elements and total sustainability disclosure practices. The study considers a set of insightful theories, namely, the signaling and agency theories of understanding the motives and drivers of sustainability reporting. Based on data from the Global Reporting Initiative database, the study analyzes Bangladesh, India, and Pakistan. We have collected annual report and sustainability reports from the GRI database for the period between 2009 and 2016. Based on the signaling and agency theories, the study investigates how board and shareholding structures convey signals to the market and different stakeholders. Our empirical results find that total sustainability disclosure has a positive and significant relationship with foreign shareholding, institutional shareholding, board independence, and board size. On the other hand, we document that director shareholding is negatively but significantly associated with total sustainability disclosure. Therefore, we conclude that corporate governance elements have very strong influential power to send positive signals to the market that lead to reduced information asymmetry and ensuring honest signals from different stakeholders.

Keywords: sustainability reporting; corporate governance; CSR; signaling theory; Bangladesh; India; Pakistan

1. Introduction

A substantial amount of research has been documented in the area of sustainability disclosure and corporate governance in developed countries, such as Korea [1,2], Spain [3,4], Australia [5], the United States [6], England [7], Italy [8], France [9], Sweden [10], and developing countries, such as Malaysia [11,12], China [13], South Africa [14], and Turkey [15]. Comparatively, limited research has been documented on South Asian (SA) countries' corporate governance and sustainability disclosure, such as Pakistan [16,17], Bangladesh [18–21], Sri Lanka [22], and India [23,24]. However, there is no study documenting the cross-country examination of SA countries' corporate governance and sustainability disclosure. Moreover, SA countries' disclosure practices are mostly on corporate social responsibility [25–27], environmental reporting [28–30], and sustainability reporting [31], while most of the researchers ignore the emergence of corporate governance as a significant factor affecting sustainability disclosure. We find a single study performed by Naeem and Welford [32] on corporate sustainability reporting (CSR) between Bangladesh and Pakistan; however, they do not consider corporate governance. Mahmood et al.'s [16] most recent study outlines overall sustainability

disclosure (economic, environmental, and social) and the corporate governance elements of the top 100 listed Pakistani companies, but the study is limited by the board structure element and no controlling variables. Moreover, our argument is consistent with Ali et al.'s [33] recent CSR literature review on developed and developing countries. They find that in the SA region only Bangladesh and India have very limited research on CSR motivation. Furthermore, managerial research has been used in a very limited way in signaling theory [34–36] even though it has ample explanatory power in the economic perspective of sustainability disclosure and corporate governance elements. Therefore, our study shows the importance of performing a cross-country analysis of SA countries' corporate governance and total sustainability disclosure (economic, environmental, and social). The SA region consists of eight countries: Afghanistan, Bangladesh, India, the Maldives, Nepal, Pakistan, Sri Lanka, and Bhutan, with one-fourth of the world's population. Currently, the region is facing devastating social and ecological impacts from global warming and climate change even though the region has had smaller contribution to global carbon emissions [29]. Moreover, the region is treated as an emerging economic region as five out of the eight countries were listed in the inclusive development index in 2018 prepared annually by the World Economic Forum (WEF) [37].

Corporate sustainability disclosure has been used as an influential outlet to communicate with different stakeholders. Sustainability disclosure conveys the organization's short-term and long-term vision and strategies to the stakeholders. Therefore, the organization's disclosure practices have a potential to create value to society. By disclosing economic, environmental, and social information, the organization may communicate with different types of potential parties including suppliers, creditors, activist groups, the government, the media, customers as well as the general public [3,29,38,39]. According to the signaling theory, sustainability disclosure sends different signals to the market and receives responses back from the market. Therefore, in the communication process, sustainability reporting reduces information asymmetry and helps gain competitive advantage and reputation that lead to value maximization. In addition, market forces are influential drivers in sustainability practices. As a result, quality information and quality reporting send positive signals to stakeholders. Therefore, the organization receives honest signals from the market [34–36].

Corporate governance elements are treated as the organization's checks and balances system because strategic policy regarding sustainability disclosure is imperative to management. Therefore, weak corporate governance fails to communicate with different stakeholders resulting in lower market visibility and higher agency costs [6]. It is also evident that, in developing countries, corporate governance is relatively weak and problematic due to the lack of stakeholders' engagement, family controlling businesses, lack of the rule of law, less corruption control, political interference, weak institutional environment, and the absence of knowledgeable people [16,18,20]. Due to SA countries' developing nature, firms are faced with all of the above-mentioned characteristics. SA countries' ineffective corporate governance is the primary reason for our interest in sustainability disclosure practices. Furthermore, we want to know how corporate governance elements send signals to different stakeholders. As stated earlier, there is huge gap in the SA region's research on corporate governance and sustainability [2,18,33]. Therefore, we have analyzed 326 firm-year observations from the Global Reporting Initiative (GRI) database for 88 listed firms from three SA countries (Bangladesh, India, and Pakistan) for the period 2009–2016. This is a first attempt to perform a cross-country analysis of total sustainability disclosure (TDS) and the effect of corporate governance on it in the SA region.

2. Theoretical Development

2.1. The Signaling Theory

The signaling theory deals with how to solve the problem of information asymmetry in a competitive environment [35,36,40]. The theory mostly focuses on management's intention to share information and receive signals from the market, stakeholders, and society. Information asymmetry incurs potential conflicts between management and agents in the organizational environment and

the signal reduces the gap by sending relevant and quality information to the different parties [35,36]. The signaling theory is comprised of four elements: signaler, signals, receiver, and feedback in line with a basic communication channel [35,36]. From the business's point of view, management insiders (executives, directors or managers) work as a signaler while the signals are the flow of information (stock price news, dividends, environmental financing, CSR investment, etc.). On the other hand, the receivers are outsiders who are unaware of the insider information (individuals, investors, employees). The feedback reflects the interactions between signalers and receivers [35,36,40,41]. In the signaling process the signaler and the receiver are the key actors while the signals convey positive or negative information to improve information asymmetry.

The organization's strategic decisions send signals to the market about commitment and initiatives that affect reputation and relationship with other organizations and stakeholders [34,35,40]. Moreover, positive signals increase firm value and performance, whereas negative signals reduce stock price and product demand [41,42]. Therefore, organizational performances are closely associated with quality of signals, which determines signaling cost (opportunity cost). Taj [35] distinguishes between high and low-quality firms that have given different signals to outsiders (see also Connelly et al. [36]). According to Connelly et al. [36], high-quality firms are usually more motivated to send high quality signals than low-quality firms because of signals' opportunity cost (see also [35,40]). Moreover, high-quality signals indicate that outsiders (buyers, investors, etc.) can easily understand the firm's ability (cost bearing and managing), and, as a result, market share and stock price can be easily enhanced. For example, seller A has a high-quality product and if there is no communication gap (information asymmetry) with the buyers, they will purchase his/her products over other low-quality sellers due to the presence of signals. Therefore, management has to consider signaling as a strategic tool in the social and environmental investment decision-making process.

Moreover, the signaling theory also explains the signals' reliability as a means of signaling honesty and indicating management's willingness and commitment to society and stakeholders [35,36]. Committed management tends to send positive signals that increase information reliability [35]. For instance, firm vision and mission statements signal to key stakeholders about the firm's long-term sustainability initiatives. Furthermore, key resourceful people on the firm's board send signals to the market about a changing competitive management strategy. Positive financial performance signals firms' financial stability resulting in a share price increase [35,36,42]. Furthermore, new shares issuance sends negative signals to the market because it reduces existing shareholders' benefits and confidence in management [35,40]. Therefore, organizations send signals through various mechanisms to stakeholders reducing information asymmetry and one of the most useful transmission channels is disclosing information in a report (sustainability or annual report) [34].

The signaling theory indicates that effective management uses sustainability or CSR reports to signal to stakeholders about the firm's commitment and long-term policy for sustainability management [34–36]. Moreover, sustainable disclosure practices signal to stakeholders and society about strong corporate governance, sound financial stability, proactive environmental strategy, CSR implementation, climate change commitment, transparency, and overall stakeholder engagement. Therefore, signals reduce information asymmetry between organizations and their diverse stakeholders (insiders and outsiders) and provide competitive advantage to the organization by reducing the legitimacy gap with society [34]. Furthermore, feedback signals from outsiders are crucial for the organization to understand the real gap between insiders and outsiders and encourage the design and implementation of an improved plan.

2.2. The Agency Theory

The agency theory is generally concerned with the relationship between the agent and the principal [6]. The theory defines the separation problem between a firm's ownership and control. Usually, the principal (owner) distributes managing and controlling power to the management (agent) to act in the owner's best interest [1,6]. However, there is a conflict between both parties due

to the business policy nature and the firm's short-term and long-term strategy. Management is highly motivated by their own benefits and opportunities in the short-term [6,18]. The agency theory also posits that the board is responsible to monitor management's sustainable policy and strategy (environmental and social policy, strategic CSR, environmental investment, and information availability). It is also evident that social and environmental investment is generally a long-term goal and management may be reluctant to invest in sustainable areas because there is no immediate benefit [5,11,43]. Prior literature argues that management is often involved in short-term investment and is reluctant to incur research and development expenditure due to their long-term nature [6]. Therefore, these conflicts create an agency problem and, accordingly, agency cost and raises management's incentive to reduce this cost. Furthermore, the organization's management is comprised of people with different and diverse values while the board members are accountable to stakeholders for monitoring, decision-making, and reporting, even though they have limited scope and power [1,2].

Therefore, management has to consider the agency cost in the decision-making process. Otherwise, it would send a negative signal to stakeholders that will reduce firm value [41]. Moreover, agency conflicts increase monitoring and bonding costs that can be reduced by disclosing financial and non-financial information [41]. Agency conflicts also can be reduced by internal and external directors' shareholding that motivates them to monitor the firm's management rigorously [6,44]. Therefore, sustainable disclosure could be used as a medium to mitigate the agency problem by monitoring, supervising, and reporting the firm's short-term and long-term interests and goals [2,14]. It is also evident that effective corporate governance motivates sustainability disclosure practices by enhancing the owner and agent's management strategic leadership.

3. Literature Review and Hypothesis Development

Sustainability disclosure has been used as an influential tool for the organization and society. It creates accountability, reduces the information gap, and sends a signal to stakeholders about sustainable commitment and performance. Prior literature has found a significant relationship between corporate governance and total sustainability disclosure. Thus, we examine if SA firms' ownership and board structure signals to the market, stakeholders, and society about their sustainability.

3.1. Ownership Structure

Every organization has different ownership structure which encompasses institutional, foreign, director, family, controlling, largest, or many other forms. Every owner has specific role in the board that leads the organization to engaging in TSD. Disclosing information to the board may reduce the agency problem and send quality signals to outsiders.

Institutional Shareholding

Institutional owners are active in the board because they have to create value for their own shareholders. As a result, they like to engage in sustainable investment and sustainable development projects. Moreover, greater voting rights make institutional owners more powerful as they like to release more social, economic, and environmental disclosure because it increases the firm's investment opportunities and competitive advantage in the market. Prior literature shows the positive relationship between institutional ownership and sustainable disclosure [1,18]. Oh et al. [1] find a positive and significant relationship between institutional ownership and CSR disclosure in Korean companies and the result is consistent with Harjoto and Laksmana [45]. Institutional investors are very concerned about the investment risk and return trade-off and they are motivated to pressure management to disclose sustainability information to reduce social and market forces. Therefore, effective institutional owners try to send positive signals to outsiders about their stewardship in the strategic decision-making process regarding economic, social, and environmental issues. Although some prior studies have found a negative or no relationship between institutional ownership and sustainability disclosure,

it may be due to the long-term nature of the investment process [14,45]. Therefore, our first hypothesis is that:

Hypothesis 1: *Higher institutional shareholding conveys positive signals that are significantly correlated with sustainability disclosure.*

Foreign Shareholding

Foreign board owners share different culture and values with the existing members. They also have diverse experiences and expertise working in different environments that lead them to closely monitor and make suggestions to management about how to improve the organization's values and reputation. Foreign investors are a very important part in the management as they tend to require more information disclosure on sustainability issues. A foreign owner undoubtedly feels pressure due to his own country's social, economic, environmental, and ethical values, norms, and regulation [1]. As a result, a foreign investor is very concerned about sustainability disclosure and like to believe that TSD mitigates foreign (home) regulatory as well as stakeholder pressure. Therefore, a foreign investor puts pressure on management to make socially responsible decisions [1,18]. Prior studies find a positive and significant relationship between foreign ownership and TSD. Khan et al. [18] find a positive relationship between foreign ownership and CSR disclosure in Bangladesh and document that foreign owners send a positive signal to stakeholders for a proactive CSR policy consistent with Oh et al. [1]. Generally, the presence of foreign members in the board sends a positive signal to the market because of foreigners' well-accepted reputation. Moreover, some researchers also document that foreign investors are more interested in profit maximization than social and environmental investment [46]. Therefore, our second hypothesis is that:

Hypothesis 2: *Higher foreign shareholding conveys a positive signal that is significantly correlated with sustainability disclosure.*

Director Shareholding

Directors play a key role in the board with respect to the organization's operational and strategic decision-making [1,6,18]. As the owners' agent, directors have agency conflicts because of personal benefits and opportunities. Generally, directors are motivated by short-term investments. As a result, they are reluctant to invest in social and environmental projects and disclose TSD. Share ownership can mitigate the agency conflict. If directors believe they are active owners of the business, they will contribute to the long-term investment decisions in order to maximize firm value. Moreover, shareholding motivates directors to engage in SD in order to minimize pressure from different activist groups (environmental NGOs), governments, donor agencies (the World Bank, the Green Climate Fund, etc.), and international organizations (the United Nations, Transparency International, etc.) [26,28,29]. However, many previous studies have documented a negative relationship between director shareholding and sustainability disclosure. Oh et al. [1], for example, find a negative and significant relationship for Korean firms because the family-oriented business environment leads to a contradiction between family and stakeholders' interests. Furthermore, Khan et al. [18] find a negative and significant relationship between Bangladeshi listed companies' director shareholding and CSR disclosure. Moreover, de Villiers et al. [6] find no correlation between director ownership and environmental disclosure for a large number of USA firms. Therefore, according to the majority of prior empirical evidence, our third hypothesis is that:

Hypothesis 3: *Higher director shareholding conveys negative signals that are significantly correlated with sustainability disclosure.*

3.2. Board Structure

An active board is comprised of different types of directors who work on behalf of the different stakeholders. Board diversity has significant effects on sustainability disclosure in order to mitigate the agency problem and send effective signals to society and stakeholders.

Outside Director

An outside or independent director means a person who has no direct relationship with the business and is knowledgeable and resourceful in a particular area providing suggestions and advice to the board [2,6]. Usually, an independent director plays an active role in monitoring and controlling the board on behalf of outsiders [18]. Therefore, more independent directors reduce agency conflicts and send positive signals to outsiders. Stakeholders have huge expectations from the independent director as they have no direct link with the business's management and have huge experience in the relevant field. Furthermore, independent directors feel pressure as experts and have their reputation at stake in the market, which motivates them to disclose more information on the organization's sustainability issues. They serve as a bridge between different stakeholders and management that may also reduce the legitimacy gap. As an effective and sound person, the independent director focuses on long-term rather than short-term decisions in order to maintain sustainable development performance. Prior studies have found a positive and significant relationship between independent board members and sustainability disclosure because of effective monitoring, control, and supervision [1–3,16,18]. Mahmood et al. [16] document a positive and significant relationship between overall sustainability disclosure and independent director in Pakistani firms because of long-term social, environmental, economic, and ethical circumstances. Khan et al. [18] find a positive and significant relationship in Bangladeshi firms' CSR reporting due to more pressure from independent directors. This result is consistent with Shaukat et al. [7], de Villiers et al. [6], and Ntim et al. [14]. Therefore, more independent board members send positive signals to outsiders about the organization's commitment to sustainability initiatives. Some of prior studies, on the other hand, argues about the negative relationship between board independence and TSD because of family control, political connections, and lack of knowledge [19]. Therefore, based on the theory and most of the previous empirical results, our fourth hypothesis is that:

Hypothesis 4: *More presence of independent director on a board conveys positive signals that are significantly correlated with sustainability disclosure.*

Total Board Size

Effective and balanced board provides necessary suggestions and advice to the organization through in-depth analysis and discussion on the issues [1–3,6]. Diverse board members contribute different experiences because of cultural and educational differences. Moreover, a larger board may represent better minority interest groups in the decision-making process. A large board also reduces the diversity gap and enjoys diverse skills and resources. Because of its large size, the organization's management reduces agency conflicts and conveys positive signals to society and stakeholders. Therefore, a large board is naturally motivated to have more sustainability disclosure to reduce pressure and mitigate societal and ethical legitimacy. Prior studies show a positive and significant relationship between board size and TSD due to the board's well-diversified effectiveness and recognition. Fernández-Gago et al. [3] find a positive and significant association between board size and CSR disclosure for Spanish listed firms because of the board's knowledge and experience. Mahmood et al. [16] also document that Pakistani listed firms' large board size is positively and significantly related with overall sustainability disclosure and the result is consistent with other studies [2,6,14]. Therefore, large board size indicates diversified and balanced management that reduces agency conflict and signals to outsiders about the organization's sustainability commitment. Despite some previous results, a negative relationship between board size and disclosure due to

coordination and real-time decision-making problems because of a large board [12], we hypothesize a positive relationship based on the theory and empirical evidence:

Hypothesis 5: *A large board conveys positive signals that are significantly correlated with sustainability disclosure.*

4. Research Methodology

4.1. Sample Selection

The study is based on secondary data sources. We have collected annual sustainability reports from the GRI database. GRI is the most trusted, recognized, and accepted organization in the area of social, environmental, and economic information disclosure and sets the triple bottom line reporting guidelines to be more transparent, reliable, and comparable [3,29]. GRI is the key player in the field of international sustainability standards and has received substantial praise from academics, researchers, and practitioners [3]. This study analyzes three South Asian countries (Bangladesh, India, and Pakistan) out of the eight. In the GRI database, we have found data for four countries and we have disregarded Sri Lanka due to ownership data inconsistencies. Moreover, the GRI database has different types of reports, such as G1, G2, G3, G4, citing GRI, non-GRI. This study only considers G3, G3.1, and G4 GRI reports. Furthermore, we have considered only listed organization in the stock market of each country. As a result, we concentrate on 88 listed firms in the three countries during the period between 2009 and 2016 (see Table 1). We studied 326 reports—16 for Bangladesh, 271 for India, and 39 for Pakistan. Furthermore, we collect ownership and board structure data from the firms' annual reports. This is a cross-country analysis and we followed the World Bank's foreign currency rate to convert all amounts into dollar value (\$).

Table 1. Yearly sample distribution.

Year	Bangladesh	India	Pakistan	Total
2009	0	2	1	3
2010	0	7	3	10
2011	1	23	4	28
2012	2	33	7	42
2013	3	44	6	53
2014	4	52	7	63
2015	4	58	6	68
2016	2	52	5	59
Total	16	271	39	326

4.2. Model Specification

We empirically examine the relationship between corporate governance elements and total sustainability disclosure using ordinary least square (OLS) regression analysis to test the hypotheses. Our regression model is given below:

$$TSDS = \alpha + \beta_1 FORS + \beta_2 INSTS + \beta_3 DRTS + \beta_4 OUTDIR + \beta_5 BDSIZE + \beta_6 GRI LEV + \beta_7 FSIZE + \beta_8 MB + \beta_9 ROA + \beta_{10} LEV + \varepsilon. \quad (1)$$

4.3. Method and Variable Measurement

Dependent Variable

TSDS: Total Sustainability Disclosure Score (TSDS)—it is derived from the number of G3, G3.1, and G4 indicators reported by each company according to the GRI's economic, environmental,

and social aspects. The study uses the binary technique of 0 and 1. If the firm has disclosed an item, it gets a score of 1, 0 otherwise (following Lu et al. [13] and Ntim et al. [14]).

Independent Variables

FORS: Foreign Shareholding measured as a percentage of a company's shares held by foreign institutional investors (consistent with Oh et al. [1] and Khan et al. [18]).

INSTS: Institutional Shareholding measured as a percentage of a company's shares held by institutional investors (consistent with Oh et al. [1], de Villiers et al. [6], and Ntim et al. [14]).

DRTS: Director Shareholding measured as a percentage of a company's shares held by the company's board of directors (consistent with Khan et al. [18] and Oh et al. [1]).

OUTDIR: Outside Director measured as a natural log of the percentage of total board members who are outsiders/independent (consistent with Fernández-Gago et al. [3] and Mahmood et al. [16]).

BDSIZE: Board Size measured as a natural log of the total number of board members (consistent with Fernández-Gago et al. [3] and Mahmood et al. [16]).

Control Variables

GRI_LEV: A dummy variable that takes the value of 1 if the report is prepared according to the G 4 guidelines and 0 if the report follows the G3 or G3.1 guidelines. The variable helps to understand the different GRI guidelines' sustainability reporting strength over time (consistent with Fernandez-Feijoo et al. [3] and Wagner and Seele [47]).

FSIZE: A numerical variable representing the natural log of the company's equity market value following Dissanayake et al. [31]. It is empirically proven that large companies engage in more sustainability disclosure due to greater pressure and higher expectations [3,18].

MB: Market-to-Book ratio measured as a natural log of the equity's book value divided by the equity's market value following de Villiers et al. [6]. The variable explains the organization's long-term growth potential and sustainability opportunities [6,48].

ROA: Return-on-Assets is calculated by dividing the firm's net income by its total assets consistent with Khan et al. [18], and de Villiers et al. [6]. Prior studies show evidence that profitable firms tend to disclose more sustainability information because of market forces and reputation.

LEV: Leverage is calculated by dividing the natural log of the firm's total liability by its total assets consistent with Fernández-Gago et al. [3] and Kim et al. [49]). Prior studies document that highly leveraged firms tend to disclose more sustainability information to reduce agency costs (Fernández-Gago et al. [3]).

5. Results

Table 2 presents descriptive statistics. The average total sustainability disclosure score is 60. The average values for the corporate governance elements are 15% for FORS, 11% for INSTS, and 0.5% for DIRS, respectively. On the other hand, the board structure data shows OUTDIR and BDSIZE participation in management is on average 1.74 and 2.38 people, respectively. The two variables, if not transformed by taking natural logarithm, would indicate 46% of total directors and 11.3 people, on average, respectively.

Table 3 displays the variables' correlation coefficients. Total sustainability disclosure is positively and significantly correlated with OUTDIR ($\rho < 0.01$). We find positive but insignificant relationship between TSD and FORS, INSTS, and BDSIZE, respectively. Moreover, we find negative and insignificant association between TSD and DIRS. The highest correlation coefficient is between OUTDIR and BDSIZE 0.517 ($\rho < 0.01$). However, there is no evidence of multicollinearity because no value exceeded the critical value of 8 [21].

Table 4 presents the regression results. Our model explanation power is 14.16 percent that is comparatively low but acceptable in the accounting research. We find a positive and significant relationship between TSD and FORS ($\rho < 0.05$). Therefore, foreign shareholding has a significant

influence on sustainability disclosure (economic, environmental, and social) in the South Asian region. The result is consistent with [1,18] as the authors argue that foreign owners from different cultures and values motivate management to engage more in sustainability disclosure. The association between INSTS and TSD reveals a positive and significant result ($\rho < 0.05$). Our finding is consistent with a prior result from Oh et al. [1] where the authors find that institutional shareholding puts pressure on management to engage in SD because of the long-term nature of investing and institutional pressure. Our last ownership structure variable DIRS shows a negative and significant relationship with TSD ($\rho < 0.05$). Our result is consistent with prior results from Chang et al. [2], Khan et al. [18], and Oh et al. [1]. The authors explain that directors who are shareholders may not have the firm's long-term interest and value maximization in mind but rather pursue personal perquisites.

Table 2. Descriptive statistics.

[illegible]

Table 3. Correlations between variables.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>TOTAL_SCORE</i> (1)	1	0.002 (0.971)	0.045 (0.415)	−0.096 (0.081)	0.196 (<0.001)	0.064 (0.246)	0.208 (<0.001)	0.029 (0.593)	0.193 (<0.001)	0.024 (0.657)	−0.014 (0.798)
<i>FORS</i> (2)		1	0.028 (0.604)	−0.186 (<0.001)	0.430 (<0.001)	0.025 (0.659)	−0.010 (0.860)	0.427 (<0.001)	0.141 (0.011)	0.077 (0.168)	−0.033 (0.548)
<i>INSTS</i> (3)			1	0.195 (<0.001)	0.164 (0.003)	−0.417 (<0.001)	−0.139 (0.012)	0.216 (<0.001)	0.023 (0.680)	−0.002 (0.975)	−0.131 (0.018)
<i>DIRS</i> (4)				1	−0.143 (0.010)	0.050 (0.364)	0.051 (0.358)	−0.171 (0.002)	0.019 (0.736)	−0.029 (0.598)	−0.124 (0.025)
<i>OUTDIR</i> (5)					1	0.517 (<0.001)	0.028 (0.611)	0.480 (<0.001)	0.035 (0.523)	0.135 (0.015)	−0.103 (0.064)
<i>BDSIDE</i> (6)						1	−0.014 (0.806)	0.346 (<0.001)	0.026 (0.634)	0.092 (0.099)	−0.140 (0.011)
<i>GRI_LEVEL</i> (7)							1	−0.127 (0.022)	−0.131 (0.018)	0.075 (0.179)	−0.078 (0.160)
<i>FSIZE</i> (8)								1	0.480 (<0.001)	0.393 (<0.001)	−0.197 (<0.001)
<i>M/B</i> (9)									1	0.437 (<0.001)	−0.165 (0.003)
<i>ROA</i> (10)										1	−0.449 (<0.001)
<i>LEV</i> (11)											1

Note: (1) Numbers in parentheses are *p*-values; (2) Refer to Table 2 for variables' definitions.

Table 4. The results of regression analysis.

<i>Dependent Variable: TSDS</i>				
<i>Variable</i>	<i>Pred. Sign</i>	<i>Coefficient</i>	<i>t-stat.</i>	
<i>Intercept</i>	?	0.9369	0.42	
<i>FORS</i>	+	2.7237	2.56	**
<i>INSTS</i>	+	3.6325	2.43	**
<i>DIRS</i>	−	−12.3958	−2.35	**
<i>OUTDIR</i>	+	1.3939	3.37	***
<i>BDSIZE</i>	+	1.4457	2.21	**
<i>GRI_LEVEL</i>	+ / −	0.8300	3.70	***
<i>FSIZE</i>	+	0.0879	0.96	
<i>M/B</i>	+	0.4711	3.47	***
<i>ROA</i>	+	1.9051	1.32	
<i>LEV</i>	−	−0.4109	−1.75	*
Σ Country Dummy	?		Included	
<i>Adj. R²</i>			0.1416	
<i>F-value</i>		5.47		***
<i>No. of Obs.</i>			326	

Note: (1) Refer to Table 2 for variables' definitions; (2) Dummy variable results are not reported; (3) ***, **, and * indicate the 1%, 5%, and 10% significance levels, respectively (two-tailed test).

Our first board structure variable is OUTDIR. We find a positive and significant relationship between OUTDIR and TSD ($\rho < 0.01$). Our finding is also consistent with Fernández-Gago et al. [3], Mahmood et al. [16], Husted et al. [50], and Katmon et al. [11]. They argue that more independent directors on the board emphasize societal benefits, competitive advantages, and organizational legitimacy, and lead to more TSD. Moreover, the presence of more outside directors reduces family pressure on the board and influences more CSR disclosure [18]. Our last variable is BDSIZE, and we document a positive and significance relationship with TSD ($\rho < 0.05$). This finding implies that a large number of board members significantly influences the economic, environmental, and social sustainability disclosure and this result is confirmed by Fernández-Gago et al. [3], Mahmood et al. [16], Husted et al. [50], and Katmon et al. [11]. Prior studies suggest that a large board has collective knowledge and experience that encourages management to engage in more TSD.

As far as the control variables are concerned, the result for GRI_Level and TSD shows a positive and significant relationship ($\rho < 0.01$). The implication is that GRI G4 guidelines have a stronger disclosing power a wider coverage of information than the G3 and G3.1 guidelines. Our finding is consistent with Fernandez-Feijoo et al. [51], and Wagner and Seele [47]. We also find a positive and significant relationship between the MB ratio and TSD ($\rho < 0.01$). The result indicates that high market growth representing the higher growth potential leads to more TSD, consistent with Chen [48]. Moreover, LEV and TSD have a negative and significant relationship ($\rho < 0.10$) as expected and the result is consistent with Khan et al. [18], and Ntim et al. [14]. Further, we did not find any support for a relationship between TSD and FSIZE or ROA, which is consistent with Chang et al. [2] and Dissanayake et al. [31]. Moreover, the result of country dummy variable, although not reported, find that Indian companies are more active in disclosing total information than Bangladesh and Pakistan. It is evident that the recent initiatives of Indian government on CSR and corporate governance rules have played effective roles for TSD practices in the country [30].

6. Conclusions

6.1. Discussion of the Study

This study has undertaken a unique initiative to understand the effect of corporate governance signals on South Asian countries' corporate sustainability disclosure (economic, social, and environmental) practices. The study uses cross-country firm-year data collected from the GRI

database. The empirical study considers 88 listed South Asian companies during the period from 2009 to 2016.

We find that foreign shareholding is positively and significantly associated with TSD. The result argues that foreign shareholders put pressure on SA firms' management for a strong and vigilant sustainable organization. Generally, South Asian firms are family-controlled in nature and corporate governance is very weak and inactive [19]. Moreover, family-led political connections play a major role when doing business in the region that also demotivates management to produce sustainability disclosure [19,52]. Therefore, more foreign shareholding encourages management to consider more sustainability-strategic decisions that lead to more disclosure to stakeholders. Moreover, foreign shareholders are very concerned about home (foreign) countries' organizational values, ethics, and regulations that are supposed to lead to more stakeholder engagement. Furthermore, foreign shareholders' suggestions are likely to be resourceful, reduce agency costs, and send positive signals to the market about management's commitment to sustainable development. Our findings are consistent with similar results from Khan et al. [18] about Bangladesh, and Oh et al. [1] about Korea.

Institutional shareholding also exhibits a positive and significant relationship with TSD because of institutional shareholders' wealth maximization focus. SA countries' business management is influenced by family and political affiliations that decrease institutional capital investment [16,19,52]. We document that on average SA countries' institutional capital investment is only 11 percent. The result also assures that the more institutional investors on the board, the higher the sustainability performance because of institutional investors' long-term investment nature and market reputation. Moreover, institutional owners' representation on the board reduces the distance between management and agents. Furthermore, higher institutional shareholding sends an honest signal to different stakeholders about management's short-term and long-term initiatives regarding the firm's economic, environmental, and social issues. Our finding is consistent with Oh et al. [1] who documented that in Korean organizations long-term institutional investment leads to long-term competitiveness that influences more CSR disclosure.

We find negative and significant relationship between director shareholding and TSD. The result posits that directors' shareholding demotivates management to disclose economic, environmental, and social information as these issues are relevant to the firm's long-term investment and less lucrative for the directors. SA countries' management is controlled by family-patronized people who are mostly concerned about family benefits rather than society and stakeholders [18,19,52]. Therefore, more director shareholding inspires more control over general investors' demands that reduces management's accountability and transparency. Moreover, more director shareholding conveys negative signals to other investors and stakeholders and reduces the firm's value and growth. Our result is similar to results from developing and developed countries obtained from Khan et al. [18] about Bangladesh, Husted et al. [50] about Brazil, and Oh et al. [1] about Korea.

On the other hand, we use two board structure variables and we document a positive and significant relationship between outside directors and board size with TSD. The result shows that a more independent and larger board has substantial effects on economic, environmental, and social disclosure. SA countries' corporate governance is very poor with respect to transparency, board diversity, and availability of resourceful board members [16,52,53]. Moreover, family-led SA countries' corporate governance influences the appointment of family-dominated independent directors [16,18,52,53]. Independent directors put pressure on management to disclose social and environmental issues because of stakeholder pressure, personal reputation, and relevant capability [16]. On the other hand, a bigger board ensures board diversity, the presence of diverse skills and experiences, and better engagement with society. Therefore, more independent directors and a bigger board reduce agency conflict and send a strong signal to the market that the interest of general investors, different stakeholders, and society is well-represented. Moreover, a large board and independent directors ensure management participation in long-term socially and environmentally driven projects that lead to more sustainability disclosure. Independent board director's work like a watchdog

who contributes expertise to society's as well as the organization's well-being. Our findings are similar to recent findings about SA countries as well as other developing and developed countries. For example, Mahomood et al. [16] (Pakistan), Khan et al. [18] (Bangladesh), Dissanayake et al. [31] (Sri Lanka), Shirodkar et al. [24] (India), Fernández-Gago et al. [3] (Spain), Husted et al. [50] (Brazil), and Chang et al. [2] (Korea) argue that more independent directors and a large board could play an effective role on behalf of stakeholders and society because of their skills, experiences, external (political) linkages, and high commitment.

6.2. Implications of the Study

As stated earlier, this is a fundamental study on SA countries' corporate governance and sustainability disclosure as the region has many limitations on effective corporate governance and the managerial decision-making process. SA countries' economic, social, and environmental decisions are constrained by weak institutional regulations, family-controlled business environment, political intervention, lack of resourceful people with respect to sustainability, lack of corruption control, and many other factors. In order to overcome these limitations, the SA countries' business organization needs strong corporate governance practices and quality information disclosure to all stakeholders. Therefore, sustainability disclosure can be utilized as an effective tool to overcome corporate limitations, to enhance corporate transparency, and to gain competitive advantage.

Thus, the study has huge managerial and theoretical implications for the region. For its theoretical contribution, the study uses the signaling theory for the first time in a cross-country analysis of corporate governance and sustainability disclosure. Moreover, signaling and agency costs are important financial accounting instruments and management should reduce these costs by enhancing total sustainability disclosure. The study has a very significant contribution to management's decision-making process with respect to sustainability investments and expenditures. The study provides evidence of how foreign and institutional shareholding influence sustainability disclosure. Furthermore, the study indicates that director shareholding sends negative signals to the market and may reduce the organization's growth and stability. The result would motivate SA countries' management to decrease family control and increase foreign and institutional investment. On the other hand, the results on the importance of independent directors and larger boards would help to appoint more outsiders as well as increase board diversity to guarantee an effective, transparent, and sustainable business environment. Moreover, the result would help to rethink SA countries' policy-making practices regarding corporate governance, particularly how ownership and board characteristics affect sustainability disclosure. Therefore, we would like to suggest that SA countries' business management and policy-makers should sit together to create a holistic sustainability business framework that will provide a guide on how the countries will achieve economic, environmental, and social sustainability as an emerging economic region.

Even though the study has significant contributions, it is not without limitations. The study is limited by the selected countries' sample distribution. In addition, the study shows only combined disclosure effects rather than individual. Given the above limitations, future research could be undertaken to separate the corporate governance and sustainability information's economic, environmental, and social effects individually. Furthermore, since the study deals with management's signals to the market, future research could be concentrated on how management incorporates external signals into its decision-making process.

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