Indonesian Journal of Sustainability Accounting and Management
ISSN 2597-6214 | e–ISSN 2597-6222
DOI: 10.28992/ijsam.v4i2.309

Moderating Effect of Earnings Management in the Relationship between Sustainability Reporting Initiatives and Value Relevance

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Abstract: The purpose of this study is to investigate whether sustainability disclosures are associated with value relevance in Bangladesh. The moderating effect of earnings management (EM) is also examined to observe the right direction in this relationship. Based on prior studies on sustainability disclosure and global reporting initiatives guidelines, this research uses the content analysis approach to assess the magnitude of sustainability initiatives of 30 Bangladeshi banking companies over the period 2009–2017. The Ohlson price model and discretionary accruals are also employed as measures of value relevant of sustainability disclosure and EM, respectively. The findings state that sustainability reports positively affect the equity value, whereas EM negatively moderates the direction of this association. The results also confirm that management should be responsive of the impending capital market effects of voluntary disclosures regarding sustainability issues. These findings could have several implications for banks, investors, and policymakers.

Keywords: earnings management, sustainability reporting, value relevance.

Article info: Received 21 March 2020 | revised 02 August 2020 | accepted 24 September 2020

Recommended citation: Rahman, M., Rasid, S. Z. A., Basiruddin, R. (2020). Moderating Effect of Earnings Management in the Relationship between Sustainability Reporting Initiatives and Value Relevance. *Indonesian Journal of Sustainability Accounting and Management*, 4(2), 266–277. https://doi.org/10.28992/ijsam.v4i2.309.

INTRODUCTION

The concept of value relevance is not new in the area of research. If the accounting value has anticipated association with the market value of equity, then it is defined as value relevant, and most presentations of this are based on accounting variables (Byun & Oh, 2017). However, in general, previous studies stated that accounting information only is not enough to elucidate an organisation's market value of equity and its deviations (Shan, 2015). Subsequently, many academics showed interest in investigating the value relevance of non-financial information to close the rising gap between the book value and market value of corporate stocks (Mostafa, 2017; Rahman et al., 2020). Besides, the worldwide movement for socially responsible investment reveals that the approach organizations integrate social, environmental, and economic concerns into their

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values, culture, strategy, decision making, and operations in a transparent and accountable manner is understood as corporate social responsibility (CSR) or sustainability. Thus, the disclosure of CSR information along with financial information plays a vital role in stakeholder investment judgements and raises the question of whether such revelations create value for investors in capital markets.

In this respect, to assess the relationship between sustainability disclosure and stock market value, several studies examine the overall effect of CSR performance or sustainability reporting (SR) on firm value. If disclosure of CSR activities is connected with the market value of equity of the firms, the theory suggests that it is value relevant (VR) for stockholders (Cai et al., 2019). Also, Carnevale et al. (2012) examined the direct effect of sustainability reporting along with the indirect impact of financial information on the corporate share price and whether the VR of CSR or sustainability reports differs across nations. They claimed that investors appreciate the additional evidence regarding sustainability issues and that have a positive influence on shares value; however, the indirect effect of book value and earnings per share is negative and insignificant, respectively. They also argued that the VR of the sustainability information fluctuates through European realms, in line with diverse institutional settings. Besides, previous research used the event-study method to investigate the temporary impacts of news concerning social and environmental performance on the organization's market value of equity (Marcia et al., 2015; Reverte, 2014). The above studies generally conclude that investors/shareholders' information regarding sustainability initiatives is value relevant in addition to the financial information such as earnings per share and book value of equity.

However, the economic agency theory suggests that sustainability disclosure is costly and not value-relevant and indicates that disclosure of sustainability information may be negatively associated or even irrelevant with the market value of equity (Reverte, 2014). Moreover, previous literature has suggested that actual sustainability performance may deviate from disclosed sustainability performance (Verbeeten et al., 2016). Similarly, Cai et al. (2019) stated that Chinese firms have shown that there is a significant negative relationship between disclosure to sustainable initiatives and abnormal returns of equity value and also observed that CSR disclosure is inversely related to the foreign share discount. They claimed a significant association between the market value of the company and the sustainability reporting. They also confirm that the book value per share is more value relevant for companies focused on sustainable development than their peers and that the market value of the stock does not change for these companies. In this respect, Therefore, this study further argues that whether SR information that is disclosed by companies in their annual report and other standalone reports (such as sustainability or CSR reports) is value relevant or not, which confirms the need for this study.

On the other hand, the reason behind the significant accounting scandals such as Enron, Merck, WorldCom, etc., was earnings management (EM) action (Muttakin et al., 2015). Previous studies argued that EM reduces the value relevance capacity of accounting information (Beisland & Hamberg, 2013; Shan, 2015). Alsaadi et al. (2013) argued that EM is associated with earnings quality. Gras-Gil et al. (2016) also stated that highly managed earnings have low quality. Also, the relationship between EM and value relevance can be explained through earnings quality. Chahine et al. (2019) stated that highly managed earnings have low quality. This means that EM reduces earning quality. The relevance of accounting information in firm valuation can be affected by market insights into data reliability (Mostafa, 2017). They found that an alleged lack of earnings reliability has consequences in that markets become less reliant on earnings for the stock valuation process. This means that EM negatively influences the market value of equity.

However, previous studies suggested that the association between sustainability reporting and EM is inconclusive. It is evident from prior research that greater CSR disclosure in firms does not provide short-term benefits in terms of aggressive earning distortion to achieve targets and maintain a smooth understanding with

stakeholders, such as employees and shareholders that support the long-term perspective hypothesis. Thus, socially responsible firms also act in an ethical manner when disclosing their financial information. From this point of view, empirical findings reveal that organisations that are more dedicated to CSR reports or manners deliver more general monetary disclosures and are less involved in earnings manipulation (Gras-Gil et al., 2016). On the other hand, prior Bangladeshi studies document that firms that provide more CSR disclosures overstate their earnings through income increasing discretionary accruals. Furthermore, prior studies also advocate that to camouflage professional opportunistic motives (under opportunism hypothesis) managers may use CSR as a strategic weapon. Managers may escape inspection from stakeholders through CSR undertakings that protect their job. Moreover, a healthy relationship with stakeholders can be used as a defensive tool against aggressive buyouts. Hence, managers who are involved in earnings manipulations may be motivated by extensive CSR activities to shed their entrenchment mechanisms. Thus, empirical results concerning the positive or negative stimulus of CSRR on EM remain indecisive. By reason of this indecisive relationship between CSRR and EM, EM was used as a moderating variable rather than mediating variable to find out the clear direction between the relationship of CSRR and VR.

Multiple sources inspired this study's decision to center its examination in the context of Bangladeshi banking sector. First, banks make superior CSR commitments every year (Ullah & Rahman, 2015). Prior studies indicated that banks perform excellent sustainability disclosure compared to non-financial organisations, and it is also apparent that market participants value non-financial information. However, a few authors contend that financial firms (banks) are more inclined to manipulate their earnings than non-financial-related associations (Chahine et al., 2019; Grougiou et al., 2014). Nevertheless, this study investigated an emerging economy, Bangladesh, where the poor enforcement of corporate regulations and monitoring system, lack of established corporate governance issues and capital market is less developed (Muttakin et al., 2015). On the other hand, prior studies document that Bangladesh is still lagging behind with regard to CSR disclosures (Belal et al., 2015; Sobhani et al., 2012). However, the findings of the previous Bangladeshi studies indicated that banking sector disclose more CSR information than non-financial organizations (Ullah & Rahman, 2015). Therefore, it is crucial to investigate whether non-financial information, specifically CSR information, that is disclosed by companies in their annual report or other standalone reports (such as sustainability or CSR reports) is value relevant or not of the Bangladeshi listed banking sector. Besides, to the best of the author's knowledge, no researchers have explored the relationship between CSRR, EM, and VR in the overall banking sector, both conventional and Islamic. Thus, it is essential to investigate the opportunistic motives of bank managers that ultimately impact on share price. This study also aimed to mitigate this research gap. Thus, the following research questions are addressed: RQ1: What is the relationship between sustainability reporting and value relevance in the banking sector of Bangladesh? RQ2: Does EM moderate the relationship between sustainability reporting and value relevance?

METHODS

Data Collection Procedures and Period of the Study

The sample consists of 30 banks scheduled in the DSE of Bangladesh for 2009–2017. In this study, the sample is comprised of 270 firm-year observations. The data were derived from the many sources of secondary data mainly from the annual reports because the annual report is a collective and widespread means of communication to stakeholders (Muttakin et al., 2015). Sustainability information was to be collected from CSR

disclosures in a separate section, standalone CSR reports, executive reports, corporate governance revelations, CEO statements as well as notes to the financial statements confined in annual reports. Annual reports will also use to gather financial data related to measuring EM, and stock price-related information will be collected from the Dhaka Stock Exchange (DSE) website and the annual reports. The sample consists of the following financial sectors: Conventional Banks (23), Islamic Banks (7). This study uses content analysis to assess the extent of sustainability reporting. Table 1 shows the final sample size of this sector, which selected as fact-finding of this research. The list of the banks was found from the DSE website (www.dsebd.org) in December 2018.

Table 1. Sample Description

Panel A: Sample Size	Sample Size
Number of listed Banks of the DSE in Bangladesh	30
Less: Corporations without required information (expected)	0
Total	30

Panel B: Distribution in Terms of Conventional and Islamic Perspective	No. of Banks
Conventional Banks	23
Islamic Banks	7
Total	30

Empirical Models and Measurement of the Variables

In line with previous studies (de Klerk & de Villiers, 2012; Lourenço et al., 2014; Reverte, 2014; Verbeeten et al., 2016), this thesis assesses the previous Ohlson (1995) valuation model that operationalized the concept of value relevance. Definitions of variables are given in Table 2.

Table 2. Variables Definition

P_{it}	=	Share price (of ordinary shares) at the end of quarter when all relevant reports are published
BV_{it}	=	Book value of equity at the end of the financial year
EPS_{it}	=	Earnings per share at the end of the financial year
SR_{it}	=	Sustainability reporting score/index over the fiscal year (the sustainability disclosures provided in the annual report)
EM_{it}	=	Discretionary accruals
ε_{it}	=	An error term

$$P_{it} = \beta_0 + \beta_1 BV_{it} + \beta_2 EPS_{it} + \beta_3 SR_{it} + \varepsilon_{it} \quad (1)$$

Besides, this research applies the indicator of EM intrinsically, to examine the existence of EM practice in the listed banking sector of Bangladesh. The second objective of this study was to assess the moderating effects of EM on the relationship between value relevance (as dependent variable) and sustainability reporting (as an independent variable) which pertained to hypothesis H_2.

$$P_{it} = \beta_0 + \beta_1 BV_{it} + \beta_2 EPS_{it} + \beta_3 SR_{it} + \beta_4 EM_{it} + \beta_5 SR_{it} \times EM_{it} + \varepsilon_{it} \quad (2)$$

Measurement of the Independent Variable: Construction of Sustainability Reporting Index

The SR Index is developed to measure the extent of SR disclosure via the annual reports by banking companies listed in the DSE in Bangladesh. An extensive review of the past literature on SR disclosure indices conducted to identify potential items of information. Besides the reporting guidelines provided by the Global Reporting Initiatives (GRI, 2015) regarding sustainability reporting and the financial sector, specific disclosure is also adopted to construct the revelation index. Furthermore, the following five steps are taken into consideration when developing the index.

Step 1: Content Analysis

Based on prior research studies, this study uses content analysis to measure the magnitude of SR disclosures. Content analysis is a technique that converts written text into numerical code (Ullah & Rahman, 2015) and creates several groups based on designated criteria. In line with the previous studies, the annual report's content analysis will be used to gather the data related to this study. The content analysis method has been utilized to analyze the narrative disclosures in annual reports, sustainability reports, standalone reports, and other reports (Rahman et al., 2018). A key element of content analysis research design is the document to be analyzed (Belal et al., 2015). The Appendix shows the aspects of content analysis.

Step 2: Coding of Data and Selecting Index Calculation Approach

Based on the review of the extant literature, there are two approaches for index construction; a weighted index approach and an un-weighted index approach. Weighted index methodologies have been criticized for the absence of a precise measure for weights and lack of solid theoretical basis for assigning weights (Muttakin et al., 2015). To avoid the disadvantages and complexity of weighting, this study adopts an un-weighted reporting index procedure. Moreover, the unweighted index is a suitable research instrument in disclosure studies when the research is aimed at all relevant stakeholders of business reports instead of a specific user group.

Step 3: Calculation of Index Score

Based on this approach, each of the three components is assigned a maximum raw score and a minimum raw score based on disclosure or not. Zero is assigned if the company does not disclose that information, whereas a rating of 1 is assigned if the company reveals that particular information. This method is similar to other researchers' binary method (Muttakin et al., 2015; Ullah & Rahman, 2015).

Step 4: Measuring the SR Index

The total score of the SR Index is calculated as the ratio of the actual score awarded to the company to the maximum possible score for that company (based on the number of applicable SR Index items). This issue has been addressed by previous corporate SR reporting studies using similar measurements (Muttakin et al., 2015; Rahman et al., 2020). Hence, the overall disclosure index that represents the total SR score is calculated as follows:

$$\text{SR Index Score (SRIS)} = \frac{\sum \text{actual score awarded to the company}}{\sum \text{maximum possible score for the company}}$$

Step 5: Testing of Internal Consistency Reliability

This study will apply the Cronbach's coefficient alpha (Cronbach, 1951) to measure the SR index's internal consistency and reliability. The coefficient alpha for the three board classifications of the disclosure index is more than 0.70. This measurement delivers good support in the condition where the set of selected items in the disclosure index captures the same fundamental construct (Muttakin et al., 2015).

Following Rahman et al. (2020) and Muttakin et al. (2015), the sustainability reporting (SR) index is calculated in Equation 2 as follows:

$$SR = \sum_{i=1}^{n} di$$

where d_i = 1 if the item *di* is reported; d_i = 0 if the item is not reported; and *n* is the number of items.

This SR index is shown in the Appendix.

Measurement of the Dependent Variable: EM

In this study, the measure of EM is the scale of discretionary accruals assessed from the Jones (1991) model as adapted by Yasuda et al. (2004) for banking companies. This study will run the subsequent regression in an attempt to get the discretionary part of the bank's total accruals:

$$\text{DACC}_t = \beta_1(1/(TA_{t-1}) + \beta_2(\Delta OI_t/TA_{t-1}) + \beta_3(\text{BRE}_t/TA_{t-1}) + \varepsilon_t$$

where $DACC_t$ is the total discretionary accruals assessed as the variance between net incomes and operating cash flows; TA_{t-1} is the lag of total assets; ΔOI_t is the variation in bank's income from operation between $t-1$ to t; BRE_t is the bank's premises and equipment; and ε_t is an error term.

RESULTS AND DISCUSSION

Table 3 provides descriptive statistics for independent and dependent variables. The table shows that there is a wide range of corporate responsibility information for listed companies in Bangladesh, as the total sustainability disclosure varies from 5 to 26. Besides, the mean value of EM (DACC) was 0.002 (0.000). Previous related studies similar to this study outcomes are Kim et al. (2012) (mean DACC = 0.005) and Klein (2002) (mean DACC = 0.004). Similarly, Muttakin et al. (2015) stated a mean (median) DACC of 0.119 (0.063), suggesting that DACC was higher in the non-financial sector than in the financial sector. The mean (median) value of share price was Tk. 22.564 (17.567) with a maximum (minimum) value of 210.00 (3.802). In a previous study, Reverte (2014), reported a mean (median) share price of 24.124 (18.434) with a maximum (minimum) value of 216.850 (4.430) for listed Spanish companies over five years. This suggests that variability in the share price of listed Spanish companies were greater than in listed Bangladeshi companies. The mean (median) value of EPS and BVPS was 2.655 (2.101) and 13.564 (6.876), respectively. In a previous study on Spain, Reverte (2014), using data from 2007 to 2011, reported a mean (median) BVPS and EPS of 15.125 (7.830) and 3.566 (2.686), respectively. This implies that the BVPS of the Bangladeshi banking sector was higher than the Spanish banking sector, indicating growth, but the EPS of Spanish firms were substantially higher.

Table 3. Descriptive Statistics

	P_{it}	BV_{it}	EPS_{it}	EM_{it}	SR_{it}
Mean	22.156	13.564	2.655	0.002	0.479
Median	17.567	6.876	2.101	0.000	0.470
SD	23.811	18.543	3.864	3.764	0.462
Maximum	210.648	100.657	25.923	24.923	0.674
Minimum	3.802	1.342	0.432	0.632	0.130

Notes: P_t, share price at time t, BV_t, book value of equity at time t, EPS_t, earnings per share for period t, EM, earnings management, SR_t, sustainability reporting

The correlation coefficients among the regressors are represented in Table 4. It can be observed that the correlation between SR and EM is (correlation = 0.643). EPS and BV are (correlation = −0.046), and variables are statistically significant at 5% level, though, none of the variance inflation factors (VIFs)—not reported—exceed the critical value of 10 (Hair et al., 2010). Therefore, in this study, it can be said that multicollinearity is not a severe problem.

Table 4. Pairwise Correlation Matrix for Models (1–2) (*N* = 270)

	BV	EPS	SR	EM
BV	1.000	0.643	0.237	−0.075
EPS		1.000	0.387	0.189
SR			1.000	−0.046
EM				1.000

Notes: Pearson's correlation coefficients among the main variables involved in the analysis. Variables are defined in Table 2

The results suggest that sustainability information provides more relevant information to shareholders and what only financial information offers, which is supported H1. These outcomes are consistent with those found by Verbeeten et al. (2016) in the German perspective and de Klerk and de Villiers (2012) for South African corporations. Overall, these outcomes appear to sustain the view that non-financial information in terms of sustainability information is value relevant.

Moreover, the results from the estimation of models (1)–(2) are presented in Table 5. As expected, the coefficients for EPS, BV, and SR are positively and significantly associated with the share price. The regression

Table 5. Results from the Fixed Effect Estimation of Models (1–2)

	Model 1	Model 2
Intercept	325.049 (0.010)**	339.858 (0.070)*
Book Value per Share (BV)	0.113 (0.042)**	0.350 (0.014)**
Earnings per Share (EPS)	2.826 (0.000)***	2.737 (0.000)***
Sustainability Reporting (SR)	35.522 (0.001)***	0.336 (2.922)**
EM		−0.607 (0.034)**
SR × EM		−4.341 (0.008)***
Adjusted R^2 (N = 30)	0.827	0.823
F-statistics	4.331	6.764
Mean VIF	1.715	1.855
Observations	270	270

Notes: The above table reports the regression outcomes from models 1 and 2. Variables are defined in Table 2. t statistics for the regression coefficients are stated within parentheses. *, **, *** Significance at the 10%, 5%, and 1% levels, respectively

findings indicate that the main independent variable sustainability reporting (SR) has a significant and positive impact on share value (PRICE) across all three models. Thus, higher CSRR indicates a higher share price, suggesting that additional CSR information enhances the market value of equity. Overall, the study results support research Hypothesis (H1). The adjusted R^2, is 0.827 (see Table 5); thus, it can be said that EPS, BV, and SR explain 82.7% of the variance of the Bangladeshi Banking companies' equity values. These results are similar to the finding of the recent research studies for Germany and Spanish samples, respectively, by Verbeeten et al. (2016) and Reverte (2014).

However, EM is negatively associated with the share prices. The interaction between SR and EM in model 2 is negatively and significantly associated with the equity value. These explain that SR has an increment value in share prices, but when organizations manipulate earnings, that negatively impacts the share price, which supports H2. Thus, manager manipulation of earnings through discretionary accruals has a negative effect on stock price in the Bangladeshi banking sector. The adjusted R^2 of models 1 and 2 are 0.827 and 0.823, respectively, and these indicate that models explain 82.7% and 82.3% of the variance of the Bangladeshi Banking company's equity values.

For the nexus between SR and VR, multiple regression analysis revealed that SR disclosure has a positive and significant relationship with stock prices. This finding supports the research Hypothesis (H1). These findings are similar to Fu et al. (2019), who suggested that SR information delivers the social and environmental position of an organization to indicate apparent litigation risk, future economic and ecological obligations, and adverse information asymmetries. Thus, firms that disclose higher SR activities are likely to have a higher market value of equity paralleled to other concerns with inferior intensities in SR reporting in the banking sector of Bangladesh. Besides, the inference of the Stakeholder-Legitimacy theory is that SR has a positive stimulus on the market value of the firm, and it may be a managerial means that supports the efficient utilization of the resources and the findings of this study are in line with this theoretical background.

Using the Ohlson price model, there was a negative effect on value relevance for companies engaged in EM when SR practices are used to conceal their poor earnings. The adverse moderating impact of EM on the relationship between SR and VR support Hypothesis (H2) was robust in multiple regression estimators. Besides, these results of the study reapprove the claims of previous studies those had reported a negative relationship between EM and value relevance. The findings of the current study also confirm the importance of earnings quality and its positive impact on equity's market value. In short, this study has made an original and novel contribution through its models.

In this study, we have executed numerous robustness tests to confirm the outcomes are robust to different measurements. Foremost, we change share prices corresponding to 3 months after the AGM, which is conducted after the year-end and expected to publish all relevant reports. This study did not find any significant changes in the relationship between SR-VR or moderating effects from EM (discretionary accruals proxy) on this relationship. These outcomes support that the main results in Table 5 were not dissimilar with the price proxy of value relevance. The results are shown in Table 6. Subsequently, this study employed lagged regression as an additional test for the price models (1–2) to ensure that the results were not affected by endogeneity. The lagged regression results shown in Table 7 are consistent with the un-lagged pooled OLS regression and panel fixed effect estimations, indicating that the results did not suffer from causality relationships. Moreover, this study also carried out a Durbin–Wu–Hausman endogeneity test (Table 7) for SR and value relevance with the null hypothesis being accepted, indicating that there were no endogeneity problems.

Table 6. The Result of Alternative Dependent Variable Proxy for models (1–2)

	Model 1	Model 2
Intercept	2.063 (0.000)***	6.350 (0.000)***
Book Value of Equity (BV)	2.237 (0.000)***	0.180 (0.025)**
Earnings per Share (EPS)	1.454 (0.000)***	2.404 (0.001)***
Sustainability Reporting (SR)	0.597 (0.019)**	0.404 (0.009)***
EM		−2.161 (0.013)**
SR × EM		−4.151 (0.009)***
Adjusted R^2 ($N = 30$)	0.849	0.831
F-statistics	134.849 (0.000)	36.706 (0.000)
Mean VIF	1.715	1.855
Observations	270	270

Notes: Detailed definitions of all variables are given in Table 2. The numerical figures in parentheses are *t*-values. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively

Table 7. Lagged Robust Regression Results for Price Models (1–2) ($N = 30$)

	Model 1	Model 2
Intercept	7.837 (0.009)***	10.238 (0.002)***
P_{t-1}	0.275 (0.000)***	0.236 (0.002)***
Book Value of Equity (BV)	2.248 (0.000)***	0.245 (0.016)**
Earnings per Share (EPS)	0.669 (0.000)***	1.608 (0.045)**
Sustainability Reporting (SR)	0.807 (0.000)***	0.408 (0.000)***
EM		−2.091 (0.012)**
SR × EM		−5.532 (0.000)***
Adjusted R^2 ($N = 30$)	0.691	0.731
Endogeneity test (*p*-value)	0.100	0.127
Mean VIF	1.715	1.855
Observations	270	270

Notes: Detailed definitions of all variables are given in Table 2. The numerical figures in parentheses are *t*-values. *, ** , and *** indicate significance at the 10%, 5%, and 1% levels, respectively

CONCLUSION

For many years, the cornerstone of corporate reports has been presenting the financial information in the annual reports to give a real picture of companies' financial performance. However, recent studies indicate that financial information is not well enough to explain the market value of equity. Still, non-financial information in terms of sustainability revelation also has a significant impact on value relevance. But, intense debates about whether such disclosure is useful for stakeholders and the empirical findings are inconclusive. Therefore, to close this research gap, this study examines the observed relationships among SR, EM, and VR jointly because previous literature has looked at pair-wise relations such as SR-EM, SR-VR, and EM-VR separately. Thus, it is crucial to examine these three variables, such as SR, EM, and VR, jointly. Because the organizations may use extensive SR disclosure to disguise EM practices, that may negatively impact the long-term organization's value maximization, which is the market value of a share. The outcome implies that the disclosure of sustainability revelation affects the market's aptitude to predict impending earnings variations (Byun & Oh, 2017), and EM negatively moderated the relationship.

This study provides several policy implications. First, the outcomes of this study will be of specific interest to the shareholders of an organization who may hope to control their managers' efficiency. This research will

also be of concern to financiers and other market participants who may wish to measure the adverse influence of EM to uphold the reputation of their business. Second, despite the enormous benefits of voluntary SR activities, it is also essential to set common standards for reporting such initiatives. One of the best solutions is to follow the guidelines in line with the globally accepted model, such as GRI guidelines. Finally, one of the significant problems to measure the performance of SR disclosure is the lack of standards and different regulations. Therefore, regulatory authorities and standard setters, due to the growing demand for the credibility of the non-financial information to the investors, should encourage firms to seek external assurance of the SR reports to intensifying their integrity and consistency.

The study has some limitations that could be considered as avenues for future research. First, this study concentrates only on stock price as the value relevance measurement method. Focusing on other firm value methods suggested by prior value pertinence studies would be motivating (Byun & Oh, 2017; Rahman & Chowdhury, 2019). Moreover, these results cannot be generalized; meanwhile, the sample is both industry- and country-specific. Hence, future research could examine the link between SR–EM using cross-country data. The probable effects of different ethnic, institutional, legal, and accounting standards could be adequately controlled. Furthermore, future research may also wish to investigate the relationship between subsamples of SR using non-binary measures of SR in an international setting.

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APPENDIX

Appendix A. Sustainability Reporting Index (Total Disclosure Items = 38)

Items no.	1st Dimension: Economic Disclosures
1	Contribution to national exchequer
2	Information concerning remittance collection
3	Comparative financial growth with previous years
4	Review of corporate financial performance
5	Other economic disclosure
	2nd Dimension: Environmental Disclosures
6	Investing in renewable energy
7	Information concerning energy consumption (gas/fuel/electricity)
8	Energy Indirect Greenhouse Gas (GHG) Emissions
9	Corporate environmental policies
10	Environmental financing such as "ecological credits"
11	Green Banking and Environmental/Green Banking awards
12	Solar panel distribution to the poor people and use of solar panel in office
13	Providing online information to reduce pollution
14	Climate change risk fund
	3rd Dimension: Social disclosure
15	Credit facilities for women entrepreneurs or initiative to empowering women;
16	Helping disadvantaged people;
17	Observation of various national ceremonies
18	Support to the foreign victims;
19	Heritage preservation
20	Special care for NRBs (non-resident Bangladeshi's)
21	Conferences on Islamic economics;
22	Commitments in operating within Shariah principles/ideals
23	Establishment of health care centers for rural people for free medical services
24	Sponsoring in medical research
25	Establishment of educational institutions
26	Patronizing general and technical education
27	Donation to the universities for constructing research centers
28	Employee compensation, welfare or donation
29	Executive profile/list of corporate senior officials
30	Training employees through in-house programs
31	Reward/Promotion and recognition for better performance
32	Healthy and safe workplace for staff
33	Disclosure on child labor or free from child labor
34	Equal opportunity
35	Different types of products and services (Glossary/definition of products)
36	Research and development for products and services
37	Policy and compliance mechanism for protecting financial privacy of customers
38	Procedures for assessing and screening environmental and social risks in business lines

Sources: Adapted from Sobhani et al. (2012); GRI (2015); Muttakin et al. (2015); Belal et al. (2015); Ullah and Rahman (2015); Rahman et al., 2018; Rahman & Chowdhury (2019); Rahman et al. (2020).