Journal of Sustainability Science and Management
Volume 15 *Number* 5, July 2020: 192-214
eISSN: 2672-7226

CORPORATE SOCIAL RESPONSIBILITY REPORTING AND VALUE RELEVANCE OF THE BANKING SECTOR IN BANGLADESH

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Submitted final draft: 18 January 2020 *Accepted: 3 February 2020* http://doi.org/10.46754/jssm.2020.07.016

Abstract: Using a sample of listed Bangladeshi banking companies for the period 2009–2017, this study investigated whether these banks which disclosed superior CSR information are more valued by the investors. CSR reports can also affect market value of equity because the sustainability report may be observed by the market participants to be a basis of supplementary and corresponding evidence along with the customary value-relevant accounting variables. Finally, this study also analyses whether CSR disclosure by Islamic banks operating in banking industries is considered in a different way by investors than CSR disclosure by conventional banks. By using a modified Ohlson model, it is evident that CSR disclosure does have noteworthy positive influence on stock prices. Furthermore, CSR disclosure by Islamic banks is associated with higher market valuations than CSR disclosure by conventional banks. The reason behind the fact is that higher CSR information assists market participants to access the inherent risk associated to potential legal action and impending obligations, by this means sinking information asymmetries and the threat of adverse selection.

Keywords: Corporate social responsibility reporting, sustainability, value relevance.

Introduction

Sustainability or CSR reporting (CSRR) may lead to the formation of business value. Value Relevance (VR) examines relationships between economic data (Lo & Lys, 2000; Byun & Oh, 2018) with the modified Ohlson (1995) valuation showing additional non-financial data, share value, or stock return (Kothari & Zimmerman, 1995; de Klerk & de Villiers, 2012; Gasperini & Doni, 2015; Houqe *et al*., 2019). CSRR is a type of non-financial related data. If CSRR is connected to organisation share value, disclosed evidence may be essential to how shareholders value organisations (Hassel *et al*., 2005; Cormier, 2012). As indicated by Nekhili *et al.* (2017), specialists can understand from value-relevance tests whether premium data (sustainability or CSRR in this study) is related to the data set that financial specialists use to value organisation stocks.

Previous studies described that accounting figures alone cannot clarify organisation share price, suggesting the significance of nonfinancial data (Comier & Magnan, 1997), ethical obligations (Choi & Pae, 2011; Almahrog *et al.*, 2017), and voluntary disclosure (Lapointe- Antunes *et al.*, 2006; Clarkson *et al.*, 2008; Sobhani *et al*., 2012; Ullah *et al*., 2015). For a corporation, it is not sufficient to only embrace CSR values, making it essential to report to stakeholders a business's promise to use CSR (Adrian, *et al*., 2015). Corporate Social Responsibility Reports (CSRR), through which a corporation demonstrates its commitment to CSR, is perhaps the most important and comprehensive CSR document (Barth & McNichols, 1994). They also demonstrated that the information revealed in CSRR, accompanied by the data stated in yearly reports, delivers superior disclosure regarding the real situation of a corporation to stakeholders. CSRR involves mainly voluntary disclosure, making evident a clear business case for its use (Gray, 2005). As companies will not embrace CSRR unless they benefit from it, this disclosure plays a significant part in investor judgements to trade, purchase, or hold share and equity instruments

in a corporation by delivering typically non-financial information to stakeholders (Beisland, 2009; Dhaliwal *et al.*, 2011).

Thus, considering financial information and non-financial information (CSR) together may elucidate market estimates better than a particular emphasis on financial data (Reverte, 2016). Also, the distribution of supplementary information provides superior reassurance and self-reliance to commercial investors concerning different phases of their operations, growing visibility and decreasing the amount of secretive information (Martínez-Ferrero *et al.*, 2015). Subsequently, these activities could affect the economic value creation of a firm (Figge & Hahn, 2012). Therefore, it is crucial to investigate whether non-financial information, specifically CSR information, that is disclosed by companies in their annual report or other stand-alone reports (such as sustainability or CSR reports) is value relevant or not. Consequently, the goal of this study was to understand if providing detailed disclosure on these issues can produce clear benefits in terms of value creation over medium-long time frames.

Multiple sources inspired this study's decision to centre its examination on the banking sector. First, it is evident that banks make superior CSR commitments every year (Viganò & Nicolai, 2009). However, prior studies suggest that it is vital to examine whether the endeavours made by banks to fulfil their CSR promises are appreciated (Carnevale *et al.*, 2014). Second, to survive in a competitive market, it is vital that banks consider reputational risks (Duellman *et al.*, 2015) because banks are more vulnerable than other corporations to threats to their reputation. Banks run on client trust and a fiduciary relationship exists between the client and bank. From a theoretical point of view, banks may gain an enhanced reputation by performing CSR activities that minimise various market risks (Kim *et al.*, 2012). For the financial industry, previous studies focused on conventional or *Shariah*-compliant financial firms separately without considering the overall banking sector. Therefore, this study examines the value relevance of CSR evidence on the banking sector.

For the purpose of this study, we investigated the relation between CSR disclosures and value relevance proxies by share price in Bangladeshi listed banking companies during the period 2009 to 2017. Hypotheses were formulated on the relationship between CSRR and value relevance.

The result of the hypothesis testing indicated that CSRR had a significant positive relationship with value relevance measured by Ohlson price model (1995). The finding also showed that the Shariah- based banks disclosing extensive CSR activities are more value relevant comparatively than their conventional counterpart. This is consistent with the notion that Shariah-compliant firms behave ethically and such disclosures create value for investors in the capital markets.

Our study makes a number of important contributions to the existing literature. First, we provide evidence that managers of Bangladeshi firms that used CSR disclosures are more value relevant in the money market. Second, although various regulatory authorities have established frameworks and strategies for sustainability disclosure in the financial sector, such as Global Reporting Initiatives (GRI), very little focus has been given to examining the nature and extent of CSR disclosure based on international guidelines, particularly in a developing country. Third, this study enhances the literature on CSR revelations by constructing a comprehensive disclosure index (methodological contribution) using GRI guidelines and prior research on CSR in banking sector, which has typically been concerned with CSR strategy, CSR policy, and sustainability performance in non-financial sectors. This study also compares the value relevance of the *Shariah*- compliant firms with conventional firms to observe the perceptions of the market participants. Thus, the following research questions are proposed.

RQ1: What is the relationship between CSR reporting and value relevance in the banking sector of Bangladesh?

RQ2: Do investors provide more value to the CSR-oriented Islamic banks than conventional banks?

The worldwide movement for socially responsible investment reveals that traditional economic, environmental, and social information is used to make investment choices (Reverte *et al.*, 2016). The approach organisations can adopt to incorporate social, economic, and ecological apprehensions in transparent and responsible manner into their policy, ethics, decision making, and manoeuvres is known as CSR. Over the last two decades, organisations have disclosed more CSR or sustainability information due to increased public interest in social and environmental issues, which been given intensive consideration in mass media (Gray *et al.*, 1995). Several prior studies have examined the effect of financial information on business valuation which can be inflated by market perceptions of data uniformity (Whelan & McNamara, 2004). Thus, the disclosure of CSR information along with financial information play a vital role in stakeholder investment judgments (Cormier & Magnan, 2007; Dhaliwal *et al.* 2011) and begs the question if such revelations create value for investors in capital markets.

Miller & Modigliani (1966) focused on pioneer research in the area of value relevance, though these researchers did not mention the term value relevance. They are identifying the determinants that influence the returns and the market value of equity. Miller *et al.* (1966) also worked to improve practical approaches for assuming the cost of capital pertinent to ideal portfolio decisions from statistics on the share price. Ball *et al*. (1968) also investigated the relationships between stock returns and accounting earnings but did not mention the term "value relevance."

Nonetheless, Amir *et al.* (1993) were the first to use the term "value relevance extensively" for outlining the association between equity market values and accounting data in terms of the market to book value of equity ratio (Barth *et al*., 2001; Vafaei *et al*., 2011). Furthermore, Barth *et al*. (2001) defined accounting data as value relevant if it has the forecasting capability of the market value of equity. This is consistent with Houqe *et al.* (2019) who defined the value relevance of earnings as the degree to which accounting earnings summarise information impounded in market prices. Additional reconciliation reveals that a higher quality of earnings better reflects a firm's underlying economics and is, therefore, more value relevant for users of the financial statements (Barth *et al.*, 2001).

In general, previous studies stated that to elucidate an organisation's market value of equity and its deviations, only accounting information is not enough (Saha & Bose, 2017). Conversely, many academics have encouraged investigation of the value of relevance of non-financial information to close the rising gap between the book value and market value of corporate stocks (Barth *et al.*, 1994; Xu *et al.*, 2007) and subsequently the stimulus of non-financial variables on the worth of share prices continues to be an exceptionally vital concern in theoretical arguments (Campbell & Slack, 2008). In this respect, this study was interested in examining the relationship of value relevance of the market value of stocks and non-financial information in terms of CSR disclosure.

For that reason, to assess the relationship between CSR performance or disclosure and market value of stocks, some research has investigated the overall effect of non-financial information in terms of societal, environmentally friendly, and other spaces of business accountability performance or disclosure (de Klerk *et al*., 2012; Rahman *et al*., 2019; Rahman *et al*., 2020). Many previous studies have used the event-study method to investigate the temporary impacts of news concerning social and environmental performance on the organisation's market value of equity (Hashim *et al*., 2015; Nobanee & Ellili, 2016). These studies generally conclude that investors/ shareholders penalise businesses for weak performance through adverse abnormal earnings and drops in market estimation. Freedman & Patten (2004) also advocated that the negative influence of unfavourable ecological enactment might be alleviated with more comprehensive reporting. Similarly, Hassel *et al.* (2005) applied the modified Ohlson (1995) price model, based on companies listed in Stockholm stock exchange, to access the relationship between value relevance in terms of share price and environmental performance ratings. Following the results, social and ecological information regarding performance ratings is value relevant, and reveals that the additional-economic value is a combination of the accounting earnings, the book value of equity and environmental and communal performance.

Furthermore, the study of de Klerk *et al.* (2012) investigated the stakeholders' view of the supplementary disclosures on sustainability issues and the subsequent effect on their investment decision through applying modified Ohlson model to assess a corporation's equity value. He concluded that the relationship between CSRR and VR is positive; that is, superior sustainability disclosure leads to a higher value of equity. Also, Carnevale *et al.* (2014) 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 differed across nations. They claimed that investors appreciated the additional evidence regarding sustainability issues that have a positive influence on shares value; however, the indirect effect of book value and earnings per share are negative and insignificant, respectively. They also argued that the VR of the CSR or sustainability information fluctuated through European realms, in line with diverse institutional settings.

In contrast, research conducted by Jones *et al.* (2007) on Australian companies showed that there is a significant negative relationship between sustainability disclosure and abnormal returns of equity value. Moreover, Cardamone *et al.* (2012) conducted an investigation based on 178 Italian listed organisations on the Milan Stock Exchange over the period of 2002 - 2008 and claimed a noteworthy adverse association between the company's market worth and CSR revelations, where the market value of share was a function of the earning, book value, and the CSR or sustainability disclosure. They also concluded that book value per share was more relevant for the CSR oriented companies than their counterparts, while the value relevance of earnings per share did not change for these corporations.

Even though the outcomes of empirical research are mixed, many accounting regulators think that information related to economic, social & environmental dimensions helps investors in policymaking and that such evidence is considered value relevant (Carnevale *et al.*, 2014). Thus, this study hypothesised that CSR revelations reduced the risk of information asymmetries in terms of enhancing business level disclosure, which subsequently impacted the organisation's market value. As a result, this study draws the following hypothesis:

H1: There is a positive relationship between CSR reporting and value relevance in Bangladeshi banking companies.

The banking system whose philosophy is based on *Sharia*' principles is referred to as the Islamic banking system (Farook *et al*., 2013). Shariah principles are resultant from the explanation of the Holy Quran (Book contains words of Allah SWT.) and Sunnah (deeds and sayings of Prophet Muhammad). In the Islamic banking system, interest (riba) is strictly prohibited because it creates the opportunity to earn without participating in any losses in the business activities by lending money to others (Hashim *et al*., 2015). Moreover, trade in speculative deeds (gharar) are also illegal for Islamic banking service as these contracts comprise ambiguous and elusive agreements that are not consistent with Shariah ethics (Zainuldin & Lui, 2018). But, to compete with other financial institutions, Islamic banks are required to offer products and services that are not only equivalent to conventional banks but also compliant with Shariah rules and regulations. The popular products or Shariah-compliant investments offered under Islamic banking system are Murabaha (purchase then sale through keeping profit margin), Musharaka, Mudaraba, Istisna (sales agreement of particular factory-made goods) as well as Ijarah (sale of usufruct). Prior studies classified these products into two categories, Shariah-compliant products and Shariah-based products. Shariah-compliant products speak to the debt-based relationship whereas Shariah-based products are grounded on profit and loss sharing (PLS) principle (Taktak *et al*., 2010; Zainuldin *et al*., 2018). Shariah also forms the ethical codes and conduct that deliver direction for accountability and moral behaviour for the Islamic banking system (Lewis, 2001). It shapes Islamic banks into organisations that provide more considerable significance on ethical and moral foundations than conventional banks. Besides, the conventional and Islamic financial systems are different, and the pillar of Islamic economic structure is Shariah principles, in which the primary objectives do not include the capitalising of shareholders' wealth, but incorporate both earnings and communal accountability simultaneously (Alsaadi *et al*., 2013). Islamic economic system incorporates fiscal and legal traits along with social, spiritual and ethical aspects in terms of principles and the philosophy of Islamic religion, which is relevant to Carroll's (1979) model consistent with the economic, ethical, discretionary and legal classifications (Elasrag, 2015). It is crucial to know that Islamic business bodies exist not only for the wellbeing of benevolent associations, but financially function at an operational and competent means (Alsaadi *et al*., 2013). However, in maximising stakeholders' wealth, they must also not disregard other moral and social commitments (Mersni *et al*., 2015) and try to keep the proper balance between returns and social aims and other benefits to their diverse stakeholders concerning Islamic Shariah ideologies (Soedarmono *et al*., 2017).

In keeping with the above statements, to maintain sustainable monetary growth along with allocating revenue and affluence justifiably and accomplishing social integrity, superior religious, societal and principled duties have been employed upon Shariah-obedient businesses (Zainuldin *et al*., 2018). Based on the previous arguments, the second hypothesis is stated as follows:

H2: Higher levels of CSR disclosure by Islamic banks are associated with higher share prices relative to CSR disclosure provided by conventional banks.

Theoretical framework

The theoretical framework of this study is based on stakeholder theory and legitimacy theory. These theories are employed in this study to place theoretical understanding. This research replicated the theoretical understandings of these philosophies and also applied these theories in its research framework. Stakeholder theory elucidates the association between diverse stakeholders and the information they obtain. Executives are employed as the representative of all relevant parties in an organisation; these are the owners and other stakeholders (Yoon *et al*., 2018). On the other hand, when the value structure of the more extensive social system in which the business operates an object's value structure is consistent, the situation or position of legitimacy that is recognised as an essential element for organisational existence must be present (Byun *et al*., 2018).

Concerning the intersection between stakeholder theory and legitimacy theory, Deegan (2002, p. 295) specified that ‘‘both theories conceptualise the organisation as part of a broader social system”. From this point of view of the stakeholder theory, CSR-oriented firms are persuaded to nurture enduring interactions with different stakeholder groups rather than the short-term benefits of the business (Gao & Zhang, 2015). The elementary conjecture of this theory is that CSR has a positive influence on business financial enactment and it may be a managerial means that helps to efficiently utilize resources (Orlitzky *et al*., 2003). Financial reporting quality specifies that information delivered to a company's stakeholders is more pertinent for their investment decisions (Norwani *et al*., 2011; Rahman *et al*., 2019; Rahman *et al*., 2020). While legitimacy theory discusses the expectations of society in general (as encapsulated within the 'social contract'), stakeholder theory provides a more refined resolution by referring to particular groups within society (stakeholder groups).

As a result, CSR actions and its disclosure deliver operational networks that notify stakeholders of the company's broader wellbeing and its responsibility to act in a communally responsible manner (Baviera-Puig *et al.*, 2015). Despite the fact that disclosures may be driven by communal or sponsor pressure, such revelations are likely to minimise information asymmetries and, therefore, it helps the stockholders to get higher market value of equity (Reverte *et al.*, 2016).

Methodology

Sample data

This study examined the relationship between CSR reporting and value relevance. This relationship was tested using quantitative research design. This study was carried out in listed banking companies (conventional & Islamic) on the Dhaka Stock Exchange (DSE). To gather information based on the research questions, this study limited its investigation to 2017 because this was the most recent year of annual reports available when the analysis began. This study collected annual reports from the DSE library from 2009 to 2017.The starting period of 2009 was chosen because in 2008 the central bank of Bangladesh began to publish CSR reviews for listed commercial banks, which was followed by significant increase in CSR disclosure. Therefore, the data for this study encompassed 270 firm-year observations from 2009 to 2017.

Empirical models

In line with previous studies (Lourenço *et al.*, 2014; De Klerk *et al.*, 2012; Verbeeten *et al.*, 2016; Reverte *et al.*, 2016), this thesis assesses the previous Ohlson (1995) price model that operationalizes the concept of value relevance:

$$P_{it} = \beta_0 + \beta_1\, BVPS_{it} + \beta_2\, EPS_{it} + \beta_3\, CSRR_{it} + \varepsilon_{it} \qquad \textbf{(Model 1)}$$

Where,

P_{it} = Share price (of common shares) at the end of the quarter;
BVPS = Book value per share at the end of the financial year;
EPS = Earnings per share after the financial year;
CSRR = CSR reporting score/ index over the fiscal year;
ε_{it} = An error term.

Value relevance research examines the relationship between financial or non-financial information and equity market prices. Examining changes in share prices or returns is an alternative method in measuring value relevance where the accurate measurement of the valuation model be subject to the valuation approach undertake (Ohlson, 1995, Barth *et al.*, 2001). Selection of which tactic to embrace be determined equally on the research hypotheses articulated by the research question and on econometric concerns (Landsman *et al.*, 1988). The main difference between value relevance studies investigating price levels and those examining price changes or returns is that the former is concerned in determining what is mirrored in firm value and the latter intended in finding what is redirected in variations in value over time. Thus, if the research question encompasses exploring whether the CSR information is timely, inspecting changes in value is the suitable research approach. This study examines the influence of CSR reporting on the market value of equity, thus price model is more appropriate to justify the research objectives.

Notwithstanding the open deliberation as to which is a better model, this review employs the price-based approach. A few focuses encourage the choice to select the price-based model. First, this prototype has been broadly embraced by investors and financial analysts (Carnevale *et al.*, 2014; Verbeeten *et al.*, 2016). Second, previous findings suggest that the estimated slope coefficient of the variable incorporated in the price model is impartial (Reverte *et al*., 2016). Third, in this paper, a share price specification of the above model is used so as to moderate the probability of improper inferences based on size variances (the so called 'scale effect', Buckingham *et al*. 2011). Barth & Clinch (2009) found that the un deflated specification (also referred to as the market value of equity specification) of the modified Ohlson (1995) model to be less effective than scaling with number of shares but more effective than scaling with book value, share price, or market value of equity. Besides, Dedman, *et al*. (2010) also observed the rationality of these prototypes and concluded that simple operational models outperform other more complicated versions which more closely follow Ohlson's theoretical specifications. Therefore, this study employs Ohlson valuation model to justify the impact of CSR reporting on value relevance in terms of market value of equity. This review, along these lines, picks the price model for exploring the relationship between organisations' reasonably estimated worth measured by the market value of equity and the magnitude of CSR reporting.

The second objective of this study is to assess the relationship between earnings management and CSR reporting in the Islamic banking sector. This study introduces an Islamic Dummy as an independent variable to differentiate its impact from conventional banking counterpart in this association. Additionally, EPS and BVPS are considered to test the second research hypothesis (H2).

$$P_{it} = \beta_0 + \beta_1\, CSRR_{it} + \beta_2\, Islamic_{Dummy} + \beta_3\, CSRR \text{x} Islamic_{Dummy} + \beta_4\, EPS + \beta_5\, BVPS + \varepsilon_{it} \qquad \textbf{(Model 2)}$$

Where,

P_{it} = Share price (of common shares) at the end of the quarter;
BVPS = Book value per share at the end of the financial year;
EPS = Earnings per share after the financial year;
CSRR = CSR reporting score/ index over the fiscal year;
$Islamic_{Dummy}$ = Islamic Dummy that coded as 1 if the firm Shariah-compliant, 0 otherwise.
ε_{it} = An error term.

Independent variable – corporate social responsibility reporting indices

To construct an inclusive magnitude of a bank's commitment to sustainability or CSR reporting, this study considers these issue areas to be more relevant to banks in terms of financial Service Sector (FSS) of GRI and extensive review of prior studies for developing the ten major aspects of CSRR issue areas, namely: Product & service responsibility, energy consumption and savings, natural environmental issues, community investment, employee development, economic issues, human rights, education, health & Islamic commitment. Following Haniffa & Cooke (2005) and Muttakin *et al.*, (2015) the CSRR index is calculated as follows:

$$\boldsymbol{CSRR = \sum_{i=1}^{n} di}$$

Where,

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

To assess the reliability of CSR reporting index, reliable with previous revelation index research (Khan *et al.*, 2009; Muttakin *et al.*, 2015; Belal *et al*., 2015), this study will apply the Cronbach's coefficient alpha (Cronbach, 1951) to measure the internal consistency and reliability of the CSRR index (Muttakin *et al*., 2015; Belal *et al.*, 2015). The coefficient alpha for the nine unlike information groups under three board classifications of disclosure index is expected to be more than 0.70. This measurement delivers good backing in the condition where the set of selected items in the disclosure index captures the same fundamental construct (Muttakin *et al*., 2015). This CSR reporting index is shown in Appendix 1.

Results and Discussion

Table 1 reports the descriptive statistics of the dependent and independent variables. The table indicates that there is a high variability in CSR disclosure practices across Bangladeshi listed banks, as the total CSR disclosure varies from 0.216 to 0.674.

Table 2 reports the correlation coefficients among the regressors and it can be seen that the highest percentage of correlations is between Share price and CSRR (r = 0.652). Table 3 shows that the Variance Inflation Factors (VIFs) for all correlated variables did not exceed 10, which is the cut-off point recommended by Hair *et al*. (2010). Therefore, there were no multicollinearity issues in this study. Gujarati & Porter (2008) stated that when a correlation between an independent variable is less than 0.80 then it is acceptable. This study did not find any correlations between independent variables that exceed the 0.80 limit, which shows an absence of multicollinearity problems.

The regression findings indicate that the main independent variable Corporate Social Responsibility Reporting (CSRR) has a significant and positive impact on share value (P). 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 study findings are

Table 1: Descriptive statistics (*N*=270)

Variables	Mean	Median	Standard Deviation	Minimum	Maximum	Skewness	Kurtosis
P	22.564	22.420	17.657	4.000	122.100	0.013	0.203
CSRR	0.479	0.470	0.105	0.216	0.674	-0.182	0.534
IslamicDummy	0.233	0.000	0.423	0.000	0.100	1.268	0.395
BVPS	23.953	23.915	14.698	-15.941	97.729	0.007	0.211
EPS	2.777	2.770	2.036	-2.740	15.100	0.013	1.028

Notes: CSRR = corporate social responsibility reporting; *IslamicDummy* = as measure of Shariah compliant banks that coded as 1 if the firm Shariah-compliant, 0 otherwise; *P*= share price; *BVPS*= book value per share; *EPS* = earnings per share

Table 2: Pairwise correlation matrix for Price-CSRR Models (N=270)

	Correlation						
		1	**2**	**3**	**4**	**5**	**6**
1	**PRICE (P)**	1	.652	.359	.652	.496	.545
2	**CSRR**		1	.387	.366	.237	-.134
3	**EPS**			1	.332	.643	-.203
4	**BVPS**				1	-.126	.485
5	**Islamic $_{\text{Dummy}}$**					1	-.032
6	**CSRR *Islamic $_{\text{Dummy}}$**						1

Notes: The table shows Pearson correlation coefficients among the main variables involved in the analysis.

in line with Clarkson *et al*. (2010), Buckingham *et al.* (2011), de Klerk *et al*. (2012), Reverte *et al*. (2016) and Verbeeten *et al.* (2016).

In Model 1, the coefficients for EPS and BVPS have a significant and positive relationship with the market value of equity, suggesting that accounting information is value relevant and aids investment decisions. Therefore, investors should give importance to accounting information (Campbell & Slack, 2008; Reverte *et al*., 2016). As a whole, these results support the notion that CSR information aids market participant predictions and more value relevant and the result is statistically significant at 5% level. These outcomes support previous studies (Reverte *et al*., 2016; Verbeeten *et al*., 2016).

The adjusted R^2 for Model 1 was 0.827 (Table 4), indicating that the model explained 82.7% of the variance regarding the relationship between CSRR and value relevance for Bangladeshi banks. This result shows higher explanatory power than recent value relevance studies by de Klerk *et al*. (2012) and Reverte *et al.* (2016). Thus, CSR disclosure delivers additional value relevant information to market participants in the Bangladeshi banking sector in comparison to the Canadian and Finnish banking sectors.

In Model 2, we explore the impact of CSRR index on the value relevance in Shariah-compliant banks. The coefficients for EPS and BVPS also have a significant and positive relationship with the share price, indicating that accounting information is value relevant and aids investment decisions (Reverte *et al*., 2016). Moreover, In Model 2, this study analysed the effect of CSRR on VR (proxied by share price) and observed a positive and statistically significant association (coefficient =−34.115, p = 0.001). The significant positive coefficient indicates that additional CSR information is incrementally evaluated by the market. Islamic Dummy was positive and significant with share price at $p < 0.05$. This result suggests that Shariah-compliant firms are value relevant for the market participants. The interaction variable CSRR* Islamic Dummy showed a significant and positive association with share price. This suggests that Shariah-compliant CSR banks are value relevant to the investors. The coefficient of the moderating term was positive (4.341) and significant at a 1% significance level. The higher standardized coefficient of the interaction term of CSRR*Islamic Dummy on this relationship indicates market participants value more the CSR oriented Islamic banks than their conventional counterparts. This result supports research hypothesis (H2). The adjusted R^2 for Model 2 was 0.823 (Table 3), indicating that the model explained 82.3% of the variance regarding the relationship between *CSRR* and value relevance for Shariah-compliant Bangladeshi banks.

To test for heteroscedasticity, this study used Breusch-Pagan/Cook-Weisberg test. The White test was used for Homoscedasticity (Table: 3). According to these tests, the null hypothesis was accepted due to the insignificant p-value, indicating no heteroscedastic and homoscedastic data. This study used the Kolmogorov-Smirnov and Shapiro-Wilk tests in addition to the skewness and kurtosis tests which were used to check for data normality. These tests tested the null hypothesis to check if data was not normally distributed. According to the test results the null hypothesis was rejected due to the significant p-value, indicating that the data was normally distributed (non- tabulated). Fixed effect estimation was conducted using the Hausman test. The results of the fixed effect estimator were compared with the panel pooled *OLS* estimator to check for result authenticity. Also, lagged regression was used to check *OLS* regression result consistency.

Value relevance researches are considered to evaluate whether specific accounting figures, and in the perspective of this research also non-financial data, for instance, CSR (followed by Hassel *et al.*, 2005), redirect facts that are considered by stockholders in valuing a corporation's share price (Buckingham *et al.*, 2011). The outcomes of this study by considering the modified Ohlson (1995) price model indicate that CSR information and financial date mutually generate more appropriate market valuations

Table 3: The result of multivariate regressions

Model 1: $P = \beta 0 + \beta 1\ BVPS\ it + \beta 2\ EPS\ it + \beta 3\ CSRR\ it + \varepsilon\ it$

Model 2: $P = \beta 0 + \beta 1\ BVPSit + \beta 2\ EPSit + \beta 3\ CSRRit + \beta 4$ ***Islamic Dummy*** $+ \beta 5\ CSRRit \times$ ***Islamic Dummy*** $+ \varepsilon\ it$

Variables	**Coefficient (t-statistics)**	
	Dependent variable PRICE	
	MODEL 1 **Fixed Effect Estimation**	**MODEL 2** **Fixed Effect Estimation**
Intercept	325.049 (0.010)**	339.858 (0.070)*
CSRR	35.522 (0.021)**	34.115 (0.002)***
BVPS	0.113 (0.042)**	0.350 (.014)**
EPS	2.826 (0.000)**	2.737 (0.000)***
Islamic Dummy		0.607 (0.034)**
CSRR* ***Islamic Dummy***		4.341 (0.008)***
Adj. R2	0.827	0.823
F-statistics	4.331	6.764
Mean VIF	1.715	1.855
Observations	270	270

Notes: The numerical figures in parentheses are t-values.*, ** &*** indicate significance at the 10%, 5% & 1% levels, respectively.

than only accounting data (results support H1). Thus, firms that disclose higher CSR activities are likely to have a greater market value of equity paralleled to other concerns with inferior intensities in CSR reporting. Thus, findings of the current study are according to many previous studies that indicated a significant positive relationship between CSRR and value relevance (Jones *et al*., 2007; Cardamone *et al*., 2012; Tafti *et al*., 2012; Mallin *et al*., 2014; Hashim *et al*., 2015; Nobanee *et al*., 2016).

The banking sector is playing a vital role for the economic prosperity of both Bangladesh and Indonesia. The size of the banking sector relative to gross domestic product (GDP) was 69.96 per cent in 2010 compared to 32.79 percent of the stock market in Bangladesh (Uddin & Suzuki, 2015). The financial market of both Islamic and non-Islamic countries with a sizeable Muslim community has been associated with the rise of Islamic banking in recent years (Maswadeh, 2015). Even non-Muslims have shown their immense inclination toward Islamic banking as it has already pointed out that around 40 percent of the market share of Islamic banks and conventional banks with Islamic branches or windows constituted of such people (Ariff, 2014). Belal & Momin (2009) found few disclosures in the Islamic community. However, this research argues that Islamic banking advocates for social contribution and thus should be more involved in CSR activities and disclosures. Previous study also provides evidence that banks complying with Islamic banking should focus more on social activities as per definition of Islamic banking (Anup, 2018). Thus, Islamic banks are expected to have more CSR spending reported to the Bangladesh Bank, other stakeholders & society. Based on the literature, it was hypothesised that Shariah principles positively moderate the relationship between CSR reporting and value relevance (H2). This study finds a significant positive association that indicates Shariah-compliant Bangladeshi banks along with high CSR initiatives are more value relevant to the market participants.

Sensitivity Analysis

This study performed robustness checks to confirm that outcomes were robust for substitute conditions. For Bangladeshi listed banks, financial statements are generally disclosed within the first quarter, at the end of the fiscal period, but annual reports are commonly published 3–6 months after the end of the fiscal year. However, *CSR* reporting is voluntary in Bangladesh and annual reports are a prime source of non-financial information. Thus, this study replaced the share prices at the end of the quarter with share prices at the end of 6 months to confirm that *CSR* reporting was accessible to stakeholders and justify the consistency of the research findings but it did not find any significant changes in the relationship between CSRR-VR and moderating effects from Shariah (Islamic Banks) on this relationship. The results are shown in Table 4. These outcomes support that the main results in Table 3 were not dissimilar to the price proxy of Value Relevance.

In place of fixed and random effects estimators, this study used other panel data techniques such as pooled *OLS* regression. This alternative estimator demonstrated outcomes similar to the results of the main study and support the connected research hypotheses (H1 and H2) as the main study results were not biased due to other panel estimators such as the Fixed-effect estimator. The results are shown in Table 5.

Table 4: The result of alternative dependent variable proxy

Model 1: $P = \beta\ 0 + \beta 1\ BVPS\ it + \beta\ 2\ EPS\ it + \beta\ 3\ CSRR\ it + \varepsilon\ it$		
Model 2: $P = \beta 0 + \beta 1\ BVPSit + \beta 2\ EPSit + \beta 3\ CSRRit + \beta 4$ ***Islamic Dummy*** $+ \beta 5\ CSRRit \times$ ***Islamic Dummy*** $+ \varepsilon\ it$		
Variables	**Coefficient (t-statistics)**	
Dependent Variable (PRICE)		
	Model 1	**Model 2**
Intercept	2.063 (0.000)***	6.350 (0.000)***
CSRR	3.597 (0.019)**	3.404 (0.009)***
BVPS	2.237 (0.020)**	0.180 (0.025)**
EPS	1.454 (0.010)**	2.404 (0.001)***
Islamic Dummy		2.161 (0.013)**
CSRR****Islamic Dummy***		4.151 (0.009)***
Adjusted R^2	0.849	0.831
F-statistics	134.849 (0.000)	36.706 (0.000)
Obs. (Banks)	270	270
No. of Banks	30	30
Mean VIF	1.715	1.855

Notes: The numerical figures in parentheses are t-values. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Table 5: Robustness Tests: Alternative Estimation Methods (Pooled Panel OLS instead of FE Estimator)

Model 1: $P = \beta 0 + \beta 1\ BVPS\ it + \beta\ 2\ EPS\ it + \beta\ 3\ CSRR\ it + \varepsilon\ it$

Model 2: $P = \beta 0 + \beta 1\ BVPSit + \beta 2\ EPSit + \beta 3\ CSRRit + \beta 4$ ***Islamic Dummy*** $+ \beta 5\ CSRRit \times$ ***Islamic Dummy*** $+ \varepsilon\ it$

Variables	**Coefficient (t-statistics)**	
Dependent Variable (PRICE)		
	MODEL 1 **Pooled OLS Estimation**	**MODEL 2** **Pooled OLS Estimation**
Intercept	7.293 (0.000)***	8.849 (0.009)***
CSRR	5.336 (0.013)**	4.681 (0.000)***
BVPS	0.358 (0.022)**	0.193 (0.005)***
EPS	2.706 (0.031)**	1.946 (0.000)***
Islamic Dummy		95.174 (0.000)***
CSRR* Islamic Dummy		1.078 (0.037)**
Adj. R2	0.847	0.852
F-statistics	243.532 (0.000)	105.964 (0.000)
Mean VIF	1.715	1.855
Observations	270	270
No. of Banks	30	30

Notes: The numerical figures in parentheses are t-values. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.
Source: Author's calculation

Conclusion

This study examined the impact of corporate social responsibility reporting on value relevance for listed financial firms in Bangladesh for the period from 2009 to 2017. The study specified, examined, and achieved two main objectives. The first objective was to investigate the impact of CSRR on value relevance using a researcher constructed CSR disclosure index, while the second objective was to examine the moderating effect of Shariah principles on the same model. The findings of the study for the first objective revealed that high CSR disclosure firms have higher market value in terms of share price, compared to firms which have poor reporting of CSR information. Similarly, the findings for objective two also revealed that Bangladeshi listed financial firms that follow Shariah principles are more value relevant then their conventional counterpart and at the same time they also generate more disclosure of CSR initiatives.

This study has several contributions and practical implications. At the outset, this study is the first rigorous and comprehensive study to examine the impact of CSRR on value relevance in the Bangladeshi banking sector and the first study, as per the researcher's knowledge, to construct a comprehensive CSRR index. Moreover, the study has also provided novel contributions and extensions to the existing CSR reporting literature. To the best of the author's knowledge, there is a shortage of studies that have examined the connection between the CSR reporting and value relevance with the Shariah principles as a moderator. Concerning the practical implications of the study, the findings of the study are expected to be used by corporations to achieve apparent reporting performance and maximise the market value of equity. Regulators can also use the findings of the study to issue rules and regulations that have an impact on enhancing social initiatives and firm performance in terms of the share price. The study has some limitations that could be considered as avenues for future research. This research is aware that other regulations and standards have been developed concerning sustainability matters by several associations, in addition to the GRI guidelines. Thus, the hypothesis ~~that~~ developed in this study could be considered in future research for different global guidelines based on sustainability issues such as UN global compact, WRI, ISO, and CDP, etc. Finally, future research could investigate the impact of CSR disclosures on different stakeholder attitudes (such as employee motivation or customer satisfaction). Considering only the share price implications might not be sufficient to understand the mechanisms through which CSR disclosures could affect future financial performance.

Acknowledgements

The authors wish to thank the reviewers for their valuable comments and the University providing the facilities for the research to be carried out**.**

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Journal of Sustainability Science and Management Volume 15 Number 5, July 2020: 192-214

CORPORATE SOCIAL RESPONSIBILITY REPORTING AND VALUE RELEVANCE

APPENDIX A
CSR Disclosure Categories Index (Total Disclosure Items = 84)

SL	CSR Disclosure Index	Sources Using Similar Disclosure Categories	Aspects/Sub-categories (from GRI & prior studies)
	1st Dimension: Economic Disclosures (EcD)		
1	Capital structure;	Sobhani *et al.*, 2012	Economic Disclosure
2	Dividend policy;	Sobhani *et al.*, 2012	Economic Disclosure
3	Contribution to national exchequer	Ullah *et al.*, 2015	Economic Performance (GRI)
4	Information concerning remittance collection	Sobhani *et al.*, 2012	Economic Disclosure
5	Comparative financial growth with previous years	Sobhani *et al.*, 2012	Economic Disclosure
6	Review of corporate financial performance	Sobhani *et al.*, 2012	Economic Disclosure
7	Infrastructural & institutional development	GRI, 2013	Economic Performance (GRI)
8	State of domestic economy	GRI, 2013; Rahman *et al.*, 2019; Rahman *et al.*, 2020	Economic Performance (GRI)
9	Impact of global economy	GRI, 2013; Rahman *et al.*, 2019; Rahman *et al.*, 2020	Economic Performance (GRI)
10	Other economic disclosure	GRI, 2013	Economic Performance (GRI)
	2nd Dimension: Environmental Disclosures (EnD)		
	2.1 Disclosure of Energy Consumptions & Savings		
11	Energy saving policies	GRI, 2013; Rahman *et al.*, 2019; Rahman *et al.*, 2020	Biodiversity (GRI)
12	Investing in renewable energy	GRI, 2013; Rahman *et al.*, 2019; Rahman *et al.*, 2020	Energy (GRI)
13	Information concerning energy consumption (Gas/Fuel/ Electricity)	GRI, 2013	Energy (GRI)

14	Direct Greenhouse Gas (GHG) Emissions, e.g. Include travel on behalf of the company or use of the company fleet; & Include the use of courier services.	GRI, 2013	Emissions (GRI)
15	Energy Indirect Greenhouse Gas (GHG) Emissions	GRI, 2013	Emissions (GRI)
	2.2 Disclosure of Natural Environment & Environmental issues		
16	Corporate environmental policies	Belal & Abdelsalam, 2015; Ullah *et al*., 2015	Environment
17	Necessity to protect the environment	GRI, 2013	Biodiversity (GRI)
18	Initiatives for water supply & sanitations;	Sobhani et al., 2012	Environment
19	Environmental financing such as 'ecological credits'	GRI, 2013	Environment
20	Tree plantation programmes	Ullah *et al*., 2015	Effluents & waste (GRI)
21	Undertaking beautification programmes (Road & city)	Ullah *et al*., 2015	Environment
22	Issues concerning climate change	GRI, 2013; Rahman *et al*., 2019; Rahman *et al*., 2020	Environment
23	Green Banking & Environmental / Green Banking awards	Ullah *et al*., 2015	Environment
24	Solar panel distribution to the poor people & use of Solar panel in office	Ullah *et al*., 2015	Environment
25	Providing online information to reduce pollution	Ullah *et al*., 2015	Environment
26	Climate change risk fund	Ullah *et al*., 2015	Environment
27	Certified environmental management system/ Environmental certification (e.g. ISO-14001)	GRI, 2013	Environment
28	Promoting environmental awareness to the community through promotional tools inclusive financing for productive SME, agriculture & environmentally beneficial project	Khan *et al*., 2010	Environment
	3rd Dimension: Social Disclosure (SD)		
	3.1 Disclosure of Contribution to Community Investment		
29	Importance of community development	GRI, 2013	Local Communities (GRI)
30	Poverty alleviation programmes	GRI, 2013; Rahman *et al*., 2019; Rahman *et al*., 2020	Indirect Economic Impacts (GRI)

31	Rural development programmes;	Ullah *et al*., 2015; Sobhani *et al*., 2012	Community Investment/Involvement
32	Credit facilities for women entrepreneurs or initiative to empowering woman;	Sobhani *et al*., 2012; Ullah *et al*., 2015	Community Investment/ Involvement
33	Helping disadvantaged people;	Sobhani *et al*., 2012	Community Investment/ Involvement
34	Aiding victims of natural disasters (Such as flood & tornado, l&slides, river erosions etc.)	Khan *et al*., 2010; Sobhani *et al*., 2012	Community Investment/Involvement
35	Distribution of worm cloths among the cold-affected people	Khan *et al*., 2010	Community Investment/Involvement
36	Observation of various national ceremonies;	Belal *et al*., 2009	Community Investment/ Involvement
37	Support to the foreign victims;	Ullah *et al*., 2015	Community Investment/ Involvement
38	Birth control products with a view to solving the population problem & to conduct camps for voluntary sterilization	Ullah *et al*., 2015	Community Investment/Involvement
39	Supporting the development of local industries or community (social awareness) programs & activities;	Ullah *et al*., 2015	Community Investment/Involvement
40	Heritage preservation	Ullah *et al*., 2015	Community Investment/ Involvement
41	Special care for NRBs (Non-Resident Bangladeshi's)	Ullah *et al*., 2015	Community Investment/ Involvement
	3.2 Disclosure of Islamic Commitments, Zakah & Quard Hassan		
42	Policy for dealing with insolvent clients;	Belal *et al*., 2015; Haniffa *et al*., 2007	Islamic Commitments
43	Conferences on Islamic economics;	Belal *et al*., 2015; Haniffa *et al*., 2007	Islamic Commitments
44	Commitments in operating within Shari'ah principles/ideals	Belal *et al*., 2015; Haniffa *et al*., 2007	Islamic Commitments
45	Commitments in providing returns within Shari'ah principles	Belal *et al*., 2015; Haniffa *et al*., 2007	Islamic Commitments

	3.3 Disclosure of contribution to Health:		
46	Establishment of health care center for rural people for free medical services	Khan *et al*., 2010	Health
47	Donation of cash money for construction of hosital/clinics/medical college etc. (e.g. cancer hospital; eyes hospital)	Khan *et al*., 2010	Health
48	Provide procurement facilities of any medicine/medical equipement/materials (e.g. operation theater for kidney hospital; ambulance; equipement for poor Thalassemia patients etc.)	Khan *et al*., 2010	Health
49	Health campaign (free medical camp/clinic)	Ullah *et al*., 2015	Health
50	Sponsoring in medical research	Ullah *et al*., 2015	Health
51	Sponsoring Seminar on health issues & awareness program (e.g. HIV/AIDS assistance programme)	Ullah *et al*., 2015; Khan *et al*., 2010	Health
	3.4 Disclosure of contribution to Education & others:		
52	Establishment educational institutions (Schools, College, Madrasha, Libraries; Laboratory);	Ullah *et al*., 2015; Belal *et al*., 2015	Education
53	Sponsoring science fair, math olympiad, Quiz competition, art exhibition etc. (local & international)	Ullah *et al*., 2015; Belal *et al*., 2015	Education
54	Funding scholarship program;	Ullah *et al*., 2015	Education
55	Patronizing general & technical education;	Sobhani *et al*., 2012	Education
56	Donation to the universities for constructing research center;	Khan *et al*., 2010	Education
57	Scholarships to the research students of different universities;	Khan *et al*., 2010	Education
	3.5 Human Resource Development (HRD) Disclosure		
58	Commitment to HR development	GRI, 2013	Training & Education (GRI)
59	Employee compensation, welfare or donation	GRI, 2013; Rahman *et al*., 2019; Rahman *et al*., 2020	Economic Performance (GRI)
60	Basic salary of men to women by employee category	GRI, 2013; Rahman *et al*., 2019; Rahman *et al*., 2020	Equal Remuneration for Woman & Man (GRI)
61	Information concerning provided fund	Sobhani *et al*., 2012	Human Resource Development

62	Male-female ratio in employment	GRI, 2013	Employment (GRI)
63	Executive profile/list of corporate senior officials	GRI, 2013	Employment (GRI)
64	Training employees through in-house programmes (e.g. leadership program; disability antidiscrimination program or career development programs	GRI, 2013; Rahman *et al*., 2019; Rahman *et al*., 2020	Training & Education (GRI)
65	Percentage of employees receiving regular performance & career development reviews	GRI, 2013	Training & Education (GRI)
66	Information about trainers & trainees	GRI, 2013	Training & Education (GRI)
67	Reward/ Promotion & recognition for better performance;	Sobhani *et al*., 2012; Ullah *et al*., 2015; Belal *et al*., 2015	Human Resource Development
	3.6 Human Rights Disclosure (HRD)		
68	Healthy & safe workplace for staff	GRI, 2013	Occupational Health & safety (GRI)
69	loan facilities to the employees;	Sobhani *et al*., 2012	Human Rights Disclosure
70	Provisions for maternity & paternity leaves	GRI, 2013; Rahman *et al*., 2019; Rahman *et al*., 2020	Employment (GRI)
71	Disclosure on child labour or free from child labour	GRI, 2013; Rahman *et al*., 2019; Rahman *et al*., 2020	Child Labour (GRI)
72	Equal opportunity;	Ullah *et al*., 2015	Human Rights
73	Employee benefits & welfare;	Belal *et al*., 2015; Khan *et al*., 2010	Employee information
74	Managerial remuneration;	Muttakin *et al*., 2015	Employee information
75	Creating Job opportunities	Ullah *et al*., 2015; Belal & Abdelsalam, 2015	Employee information
76	Increasing employees financial & economic awareness;	Ullah *et al*., 2015	Employee information
	3.7 Product & Service Responsibility Disclosure		
77	Different types of products & services (Glossary/definition of products)	GRI, 2013	Product & service & labelling (GRI)

78	Research & development' for products & services	GRI, 2013	Customer Health & Safety
79	Good customer relation;	Ullah *et al*., 2015	Consumer
80	Complaints received & resolution information	GRI (2013), Sobhani et al., 2012	Customer Privacy (GRI)
81	Policy & compliance mechanism for protecting financial privacy of customers;	Ullah *et al*., 2015; Belal *et al*., 2015	Consumer
82	Service to disable clients;	Khan, *et al*., 2009	Product & Service Information
83	Product & consumer safety/ Fund security;	Ullah *et al*., 2015	Consumer
84	Procedures for assessing & screening environmental & social risks in business lines	GRI, 2013; Rahman *et al*., 2019; Rahman *et al*., 2020	Product Portfolio (GRI)

Sources: Adapted from GRI, 2013; Sobhani *et al*., 2012; Ullah *et al.* (2015); Belal & Abdelsalam (2015); Khan *et al*., 2010; Haniffa *et al*., 2007; Khan *et al*., 2009; Muttakin *et al*., 2015; Belal *et al*., 2009; Rahman *et al*., 2019; Rahman *et a*l., 2020.