# What determines forward-looking information disclosure in Bangladesh?

Pappu Kumar Dey
*Department of Accounting and Information Systems, Jahangirnagar University, Dhaka, Bangladesh*
Manas Roy
*BRAC Bank Limited, Dhaka, Bangladesh, and*
Mohsina Akter
*Department of Accounting and Information Systems, Jahangirnagar University, Dhaka, Bangladesh*

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## Abstract

**Purpose** – The study aims to examine the level and extent of forward-looking information (FLI) disclosure and identify the determinants driving the FLI disclosure (FLID) in the context of an emerging and developing economy.

**Design/methodology/approach** – The sample includes annual reports of the top 30 listed companies in Bangladesh for the years 2013–2017. The content analysis approach is used to examine the practice of FLID and to determine the extent of FLID based on the index. Multiple linear regression analysis is performed to identify the determinants of FLID.

**Findings** – This research finds that board size, auditor's global affiliation, leverage and profitability have a substantial positive impact on FLID. By contrast, firm size and listing age have a significant negative association with FLID. Moreover, contrary to our expectation, female representation in the boardroom has an inverse effect on FLID. This study, however, does not suggest any significant impact of board independence.

**Research limitations/implications** – Small sample size may limit the generalizability of the findings. Besides, the FLID index score may be affected by the subjective judgment while analyzing the content of the annual report.

**Practical implications** – The findings of this paper may assist the regulators and policymakers in incorporating this new reporting paradigm in regulations. Alternatively, the current research can serve as a basis to further understand the importance of FLID for the stakeholders.

**Originality/value** – This empirical study contributes to the current FLI literature in Bangladesh. A handful of studies have been done to examine the nature and level of FLID and find out the determinants of FLID in the developing countries. To the best of the authors' knowledge, no study yet has been explored on FLID and its determinants by classifying them as qualitative and quantitative in Bangladesh.

**Keywords** Annual report, Bangladesh, Determinants, DS30 companies, Firm characteristics, Forward-looking disclosure

**Paper type** Research paper



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## 1. Introduction

Information disclosed in the annual reports can be differentiated into backward- and forward-looking information (FLI) (Kılıç and Kuzey, 2018; Hussainey, 2004). Backward-looking information is past financial results along with their related disclosures (Aljifri and Hussainey, 2007). These are mostly retrospective and barely provide prospects that are more relevant for an informed decision. Whereas, FLI refers to future forecasts and current plans that provide information about the company's prospects (Celik *et al.*, 2006). As the economic environment is too dynamic to depend only on past information, publicly traded firms disclose FLI about their prospects that may give competitive advantages in the financial markets (Kılıç and Kuzey, 2018). FLI disclosure (FLID) is theoretically uninformative if it does not change from the previous year, especially after a major change in firm performance (Hassanein and Hussainey, 2015).

FLI contains economic and non-economic forecast related to information that affects the future performance of the firms (Aljifri and Hussainey, 2007; Celik *et al.*, 2006; Uyar and Kilic, 2012). Economic estimates contain the following year's estimated sales or revenue, projected cash flows, probable net profit, etc. Non-economic forecasts are non-financial disclosures related to risks, organization's plans, valuation of chances, uncertainties and estimated data that extensively affect the actual outcomes from expected targets. The terms "estimate," "expect," "forecast," "predict," "anticipate" or other similar terminologies are used to identify FLI (Aljifri and Hussainey, 2007), which should usually be included in management commentary.

FLID has been getting an increasing volume of care in the current corporate reporting paradigm all over the world. The frequency and quality of FLI can ensure capital market effectiveness by reducing information asymmetry in particular. The role of FLI in the financial disclosure atmosphere is very crucial because the capital market also reacts to non-financial information along with past financial disclosure. The past financial information may not fully satisfy stakeholders' varied information needs. The stakeholders frequently want to know about the imminent forecast that will describe the future happening of the organization. The management evaluates current market trends to answer the stakeholders with the descriptions about what the firm is planning and proposing to do. Thus, FLID has become a concerning issue for the preparers.

Firms disclose corporate information in different ways such as annual reports, interim reports, conference calls, press releases and legal communication of specialists (Aljifri and Hussainey, 2007). Among these sources, the annual report has only been used for this study because of several reasons. First, it is the most preferred published source of information (Shehata, 2014). Second, it is believed to be a significant, prime and available source for information than all other sources to users, particularly for external users. Finally, the annual report is audited, timely, accurate and consistent, which is also supported by prior studies (Nurunnabi *et al.*, 2011; Petty and Guthrie, 2000).

The disclosure of FLI is perceived to be more relevant to external users, capital providers in particular who give more attention to the company's future predictions compared to previous performance (Hussainey, 2004). This significance motives several researchers to study on FLID, and its association with different firm attributes, particularly in developing country context in the recent years (e.g. Buertey and Pae, 2020; Mahboub, 2019; Mousa and Elamir, 2018). They document firm characteristics and different corporate governance attributes are the main determinants of FLID. Moreover, it reduces information uncertainty (Bravo, 2016; Firmansyah and Irwanto, 2020) and increases firm value (Hassanein *et al.*, 2019).

Bangladesh is an interesting context of corporate research because of the emerging capital market (Biswas, 2020). Corporate disclosure reduces the information asymmetry problem and generally leads to the efficiency of the capital market. Firms can also get benefits by providing additional voluntary corporate information to their investors and other creditors in

terms of the lower cost of capital or debt (Rouf and Akhtaruddin, 2018). However, the overall quality of the voluntary corporate disclosures in Bangladesh is not satisfactory (Ullah *et al.*, 2019), though several companies are trying to provide good quality of corporate disclosure, including different types of voluntary information as a part of voluntary reporting. As a part of voluntary reporting, FLI is also disclosed by the companies in Bangladesh. Many previous studies on corporate disclosure, including social, environmental, climate change, risk management and intellectual capital, have been explored in the context of Bangladesh. But, there is a dearth of research on FLID. To the best of our knowledge, no study yet has explored the FLID and its determinants in Bangladesh's perspective. Besides, the study contributes to the present literature by classifying the FLID as both qualitative and quantitative. This study, thus, tries to fill the scarcity of literature on FLID in the Bangladesh context.

This paper aims to investigate the level and extent of FLID in the publicly available annual reports of the listed firms of Bangladesh. We, more importantly, identify the determinants, including essential corporate governance and firm characteristics, that drive the disclosure of FLI in a developing country setting.

This paper makes several contributions in an emerging economies context. Following the previous literature, we identify a list of 17 items for the FLID index and perform content analysis to calculate the index score. The panel data for five years (2013–2017) are constructed to perform ordinary least squares (OLS) regression, which includes the year and industry dummies to fix the year and industry effect in the model. Firms in Bangladesh normally disclose qualitative information related to FLI, where few companies quantify FLI along with qualitative disclosure. The results suggest that board size, auditor type, leverage and profitability have a significant and positive impact on FLID. By contrast, gender diversity in the board, firm size and listing age have an inverse effect on the level and extent of FLID. However, the representation of independent directors does not have any substantial impact.

The rest of the paper is constructed as follows. Section 2 discusses the prior literature and develops the hypotheses based on the literature. In Section 3, we explain the sampling and data collection process, and the methods we use to analyses the data. Section 4 illustrates the results and findings of our empirical investigation. Conclusion, major findings and limitations are discussed, and the direction for future research have been outlined in the final section.

## 2. Literature review and hypothesis development

Several theories can be used to explain the firm's voluntary information disclosure practice (Enache and Hussainey, 2020). Moreover, these disclosure theories: agency theory, signaling theory, information cost theory, stakeholder theory, legitimacy theory, etc. are complementary (Enache and Hussainey, 2020). Following the previous literature (Agyei-Mensah, 2017; Enache and Hussainey, 2020; Kılıç and Kuzey, 2018), we use the agency and stakeholder theories to explain FLID in the Bangladesh context.

The agency theory explains the affiliation between the manager and shareholders (Jensen and Meckling, 1976). It asserts that management and separation of proprietorship cause agency cost creating information asymmetry (Jensen and Meckling, 1976). Information asymmetry is caused when the agent takes superior information opportunities as opposed to the principals. Thus, the firm may disclose more corporate information as a mechanism to reduce this asymmetry (Enache and Hussainey, 2020; Firmansyah and Irwanto, 2020). Grounding this notation, FLID reduces information asymmetry, which leads to lower agency cost (Hassanein and Hussainey, 2015; Kılıç; Kuzey, 2018) and hence the lower cost of capital (Enache and Hussainey, 2020). To mitigate this asymmetry, firms provide a higher level of FLID that sustains a superior assessment of the upcoming performance of the firms (Kılıç and Kuzey, 2018).

While the agency theory mainly focuses on shareholders' interest, other stakeholders are also important from the economic, governance and social perspectives. The stakeholder theory suggests fair treatment of all stakeholders (O'Dwyer, 2002). Stakeholders, however, are treated differently by the management because of their differential power on the firms (Van der Laan Smith *et al.*, 2005). Moreover, stakeholders' information needs are diverse. A higher volume of corporate disclosure, including voluntary information, may help firm satisfy their stakeholders covering these diverse needs (Enache and Hussainey, 2020). Therefore, FLID can meet the demand of stakeholders through increasing their ability to assess future performance and prospects of the firm.

Past researches have focused on the association between FLID and firm characteristics (Mahboub, 2019; Mousa and Elamir, 2018) and its consequence on firm value (Hassanein *et al.*, 2019). Mahboub (2019) examines the factors affecting FLID in Lebanese commercial banks and documents positive impact of profitability, liquidity and capital expenditure. Whereas, Menicucci (2013) investigates Italian listed firms and also finds a significant impact of profitability on the level of FLID. Similarly, Alkhatib (2014) studies the Jordanian Stock Exchange and documents a positive impact of profitability and globally affiliated external auditors. Aljifri and Hussainey (2007) suggest that leverage ratio and profitability have a significant relationship with the extent of FLID in UAE companies. In recent years, few researchers study the influence on information uncertainty and firm value. For instance, Firmansyah and Irwanto (2020) study the manufacturing companies in Indonesia and document a significant inverse association between FLID and information uncertainty. Hassanein *et al.* (2019) sample annual reports of UK firms and show a positive impact of FLI on firm value, particularly on low-performing firms.

Like other corporate disclosure literature, corporate governance attributes are also examined in FLID research. Uyar *et al.* (2013) have studied Turkish firms and documented the positive impact of corporate governance. Better corporate governance improves disclosure practice (Wang and Hussainey, 2013). More specifically, higher board size (Wang and Hussainey, 2013), a larger proportion of independent directors (Buertey and Pae, 2020), greater gender diversity in the board (Kılıç and Kuzey, 2018) have a significant positive impact on FLID. Attributes of the audit committee are also examined by the researchers in recent years. Bravo and Alcaide-Ruiz (2019) suggest the presence of females with financial and accounting expertise in the audit committee enhances FLID. This similar association is also documented by Liu (2015) in the Chinese context. Agyei-Mensah (2017) studies comparative two countries in sub-Saharan Africa and suggests that the least corrupt country has a higher level of FLID along with a higher level of transparency.

To identify the determinants of FLID, the following hypotheses have been developed. The directors of a board determine the strategies and policies that managers follow (Akhtaruddin *et al.*, 2009). The board can impact administrative decisions to increase FLID because of the monitoring role of directors (Al-Najjar and Abed, 2014). The boardroom generally consists of both executive and non-executive members. A smaller board is generally effective than a large board due to the coordination and communication-related problems (Wang and Hussainey, 2013). On the other hand, the bigger board with greater variety includes financial experience and expertise that impacts on the FLID and its extent (Elzahar and Hussainey, 2012; Wang and Hussainey, 2013). However, an insignificant association between FLID and board size is also documented in the previous studies (Buertey and Pae, 2020; Elzahar and Hussainey, 2012; Kılıç and Kuzey, 2018; Tan *et al.*, 2015; Uyar and Kilic, 2012). Akhtaruddin *et al.* (2009) and Al-Najjar and Abed (2014) found a substantial impact of board size on FLID. So, the following hypothesis is suggested.

*H1.* There is a positive association between board size and FLID.

The inclusion of independent directors enhances the transparency and accountability of the board to the capital providers and ensures the best utilization of corporate resources. Thus, a higher proportion of independent directors decreases agency cost and generates pressure for improved disclosure (Forker, 1992). If independent directors accomplish their monitoring and controlling role, the quality of information is improved (Forker, 1992), and more disclosure is estimated (Eng and Mak, 2003; Haniffa and Cooke, 2002). Some prior studies (Al-Najjar and Abed, 2014; Elzahar and Hussainey, 2012; Kılıç and Kuzey, 2018; O'Sullivan *et al.*, 2008; Uyar and Kilic, 2012) find that the percentage of independent directors has no substantial impact on FLID. While, some other studies (Buertey and Pae, 2020; Dey and Faruq, 2019; Liu, 2015; Wang and Hussainey, 2013) document the association between board independence and corporate disclosure. Based on the agency theory and discussions, the following hypothesis is suggested.

*H2*. The higher proportion of independent directors increases FLID.

Board diversity means the difference among board members comparative to their several features, such as age, gender, race, education, personalities, expertise and skills (Johnson *et al.*, 2001). A gender-diversified board brings more standpoints and thoughts to board negotiations and leads the board to make better decisions (Barako and Brown, 2008; Bear *et al.*, 2010). Female directors encourage more participative communication between directors (Bear *et al.*, 2010). In this respect, the presence of different viewpoints in boardroom improves a company's capability to achieve the needs of divergent groups of stakeholders with investors, lenders analysts, creditors and auditors (Harjoto *et al.*, 2015). There is a substantial positive association between board gender diversity and FLID (Frias-Aceituno *et al.*, 2013; Kılıç and Kuzey, 2018). We presume a positive association between the level of FLID and gender diversity.

*H3*. The proportion of female directors has a positive impact on the level and extent of FLID.

Auditor type is a broadly used variable used to explain the nature and extent of corporate disclosure. An auditor plays a vital role in improving the reporting practices of the firms (Hail, 2002). Audit firms having global affiliation can guide their clients regarding corporate reporting practices because they have superior experience because of internationalization (Wallace *et al.*, 1994). Moreover, an audit firm with global affiliation needs to maintain an international standard and ensure better disclosure of corporate information. Aljifri and Hussainey (2007) and Wallace *et al.* (1994) suggest an insignificant association between auditor type and corporate reporting. By contrast, Uyar and Kilic (2012) and Dey and Faruq (2019) find a significant positive association between an audit firm's global affiliation and disclosure quality. Thus, we presume the following.

*H4*. There is a positive relationship between an auditor's international affiliation and FLID.

A higher cost of capital is faced by a leveraged company because leverage denotes higher risk. Companies with higher debt in capital strategy are disposed to high agency cost (Alsaeed, 2006). This cost might be reduced by providing more corporate information that reduces information asymmetries (Inchausti, 1997). The levered companies give more details to their creditors to fulfil their information needs (Uyar and Kilic, 2012). According to the agency theory, leveraged companies can reduce agency cost and the cost of capital by disclosing corporate information (Barako, 2007; Jensen, 1982), and leveraged companies can also minimize risk premiums through better information dissemination (Aljifri and Hussainey, 2007). Aljifri and Hussainey (2007) and Wang and Hussainey (2013) find a significant relationship between disclosures and leverage, while some other studies

(Al-Najjar and Abed, 2014; Kılıç and Kuzey, 2018; Menicucci, 2013; Uyar and Kilic, 2012) suggest an insignificant association. We hypothesize the following.

*H5.* There is a positive association between leverage and FLID.

The profitable company can disclose additional information to promote an optimistic impression on the stakeholders (Alsaeed, 2006). The improved analysis and discussion of favorable and positive results to stakeholders are given by highly profitable firms (Hassanein and Hussainey, 2015). Previous studies (Aljifri and Hussainey, 2007; Alkhatib, 2014; Mahboub, 2019; Qu *et al.*, 2015) document a positive impact of profitability on corporate non-financial disclosures. Again, some studies (Al-Najjar and Abed, 2014; Kılıç and Kuzey, 2018; Mousa; Elamir, 2018; Uyar and Kilic, 2012) do not find any significant relationship between disclosures and profitability. However, it is expected that profitable firms disclosure their positive activities and performance to impress external stakeholders through better disclosure in their annual reports. Hence, the following hypothesis is proposed.

*H6.* There is a significant positive relationship between profitability and FLID.

Firm size is one of the most broadly used variables to explain the nature and extent of corporate disclosures. It is commonly measured using a proxy of the total assets. A significant relation between corporate disclosures and firm size has been found in the several literatures (Al-Najjar and Abed, 2014; Ho and Taylor, 2013; Kent and Ung, 2003; Kılıç and Kuzey, 2018; Mousa and Elamir, 2018; Uyar and Kilic, 2012; Wang and Hussainey, 2013). One reason for this positive association might be that large companies give more corporate information than a small one (Mathuva, 2012; Mousa and Elamir, 2018) for bigger stakeholders' pressure. Besides, future earning-related information is provided by larger firms because of their stable performance (Kent and Ung, 2003). But, some previous studies (Al-Najjar and Abed, 2014; Aljifri and Hussainey, 2007; Mahboub, 2019; Menicucci, 2013) also do not find any significant association between FLID and firm size. By contrast, a small firm needs to raise more capital, thus discloses more corporate information and the prospect to attract potential investors and creditors. We presume better FLID by smaller firms and hypothesize the following.

*H7.* A small firm discloses more FLI in the annual report than a large firm.

The extent of corporate disclosures and reporting is improved by firm age (Akhtaruddin, 2005; Owusu-Ansah, 1998). The extent of disclosures is poor for younger firms due to competitive disadvantage, information processing cost, and lack of experience (Owusu-Ansah, 1998). Moreover, old firms use their expertise and resources to increase their reputation (Akhtaruddin, 2005). A significant positive association between disclosure and firm age is also documented by Hossain and Hammami (2009), while Alsaeed (2006), Mahboub (2019) and Uyar *et al.* (2013) find no significant association. Conversely, some other research (Li *et al.*, 2012) suggests significant negative relation between listing period and voluntary disclosures because new companies need to attract capital providers, and corporate disclosure is a way of convincing the resource providers. We use the listing period as a proxy of the firm's age. Based on the above discussion, we postulate the following:

*H8.* A newly listed firm has a greater level and extent of FLID.

## 3. Data and methodology

This study samples the DS30 index (as on May 7, 2018) which is one of the two indices classified and updated by the Dhaka Stock Exchange (DSE). These DS30 index firms are the leading listed companies that cover around 51% of the total equity market capitalization.

Moreover, these top 30 firms are considered viably investable companies in terms of market capitalization, financial viability, liquidity and base value. Most of the companies in Bangladesh disclose FLI in a heterogeneous way because this type of corporate reporting is mostly voluntary. The selection of the top 30 firms might reduce the risk of heterogeneity because of similar corporate attributes and performance.

We have collected data from the secondary sources, annual reports in particular. Annual reports for the years 2013–2017 of the respective company have been collected. Annual reports of the company are the most preferred and reliable source of information for external users (Shehata, 2014). It is also argued that annual reports are the significant, prime and frequent source of information than all other sources. Furthermore, annual reports are externally audited, timely, more reliable and consistent, which is supported by prior studies (Nurunnabi *et al.*, 2011; Petty and Guthrie, 2000). During collecting annual reports, we made our best effort to minimize the number of missing annual reports. At first, we collected annual reports form the respective firm's website. If we did not find any particular year, we further browsed the website of some other financial portal and even physically visited the DSE library where financial and annual reports might be found. Despite these efforts, the firm-year observation is reduced to 138 from potentially 150 due to missing annual reports and firms listed after 2013.

A standard FLID index (see Appendix) is developed based on the disclosure index used by Ho and Taylor (2013); Kilic and Kuzey (2018) and Liu (2015). We also consider the corporate reporting culture and norms of the country and concise to 17 items of the index that are can be disclosed by the firms, both qualitative and quantitative. Narrative sections of annual reports have been analyzed to comprehend the disclosure practice. These narrative sections include governance report, director's report, remuneration report, director's responsibility statement, financial summary, financial history and shareholder's information. It also includes a largely voluntary unit such as CEO's statement, chairman's statements, financial and operating review, people and environment and community report. This complies with the prior research (Al-Najjar and Abed, 2014; Hussainey and Aal-Eisa, 2009; Kılıç and Kuzey, 2018). Self-constructed is a commonly used measure for investigating disclosure practice. FLID can be qualitative, quantitative or both. For each item of the index, we assign 0 for non-disclosure, 1 for only qualitative or quantitative disclosure and 2 for both qualitative and quantitative. The final score is calculated as the proportion of the maximum total possible score.

For examining data in this study, content analysis practice is adopted. Content analysis is defined as a scientific and numerical methodology in social science research, which depends on the knowledge of human communication, for example, through writing. This means that the capability to understand written texts, phrases or terms (Alkhatib, 2014; Kılıç and Kuzey, 2018). To analyze the relationship in the research hypothesis, a multivariate linear regression using STATA has been conducted using the following model:

$$\begin{aligned}\mathrm{FLID}_{i,t} = {} & \beta_0 + \beta_1 \mathrm{BSIZE}_{i,t} + \beta_2 \mathrm{BINDP}_{i,t} + \beta_3 \mathrm{BGDIV}_{i,t} + \beta_4 \mathrm{ADTAF}_{i,t} + \beta_5 \mathrm{LEV}_{i,t} \\ & + \beta_6 \mathrm{ROA}_{i,t} + \beta_7 \mathrm{FSIZE}_{i,t} + \beta_8 \mathrm{LAGE}_{i,t} + \{\textit{year effect}\} + \{\textit{industry effect}\} + \varepsilon_{i,t}\end{aligned}$$

where subscript $i$ refers to an individual firm and $t$ refers to a particular year.

(1) FLID, average score of self-constructed FLID index;

(2) BSIZE, natural logarithm of the total number of board members;

(3) BINDP, proportion of independent directors in the boardroom;

(4) BGDIV, proportion of female directors in the boardroom;

(5) ADTAF, 1 if the firm's external auditor has any affiliation with the globally renowned audit firm, and 0 otherwise;

(6) LEV, ratio of the total liabilities to total assets;

(7) ROA, ratio of the net income to the total assets;

(8) FSIZE, natural logarithm of the total assets; and

(9) LAGE, natural logarithm of total years since listing on the DSE plus one.

## 4. Results and discussion

Table 1 exhibits the descriptive statistics regarding dependent and independent variables used in our analysis.

On average, 35.8% of the FLID items are disclosed by the companies with 9.7% of standard deviation. The mean board size is 2.19 as measured by the logarithm of board size that implies around ten members represent the boardroom, where almost 23% of the total members are represented by independent directors. The ratio of female directors is only 14.7% with 13.3% standard deviation, which suggests a wider variation of gender diversity in the board. In total, 61% of the total assets is externally financed. The average profitability of the firms is only 7.3%. Firm size is measured by the natural log of total assets, and the average value is 24.51 with 1.27 standard deviation. The listing age is also measured by the log of the total listing period, with mean 2.657 with 0.91 standard deviation indicating considerable deviation of listing age. A substantial number (about 74%) of audit firms that are the statutory auditor of the sample firms have affiliation with internationally renewed audit firms. DS30 firms are top-listed companies having higher equity market capitalization that might be a reason behind the significant number.

Table 2 shows the Spearman correlations between the variables. The correlation matrix for both dependent and independent variables is used to identify the presence of an econometric problem of data set used in the model before running the regression analysis. The maximum correlation of 0.498 between LEV and FSIZE and −0.586 between LEV and ROA suggests the non-existence of potential multicollinearity problems in the model. In addition, we check the variance inflation factor (VIF) of the explanatory variables to assess the presence of multicollinearity (results untabulated). The result ranges from 1.07–1.93, and all these are acceptable values (less than 10) of the VIF test. Thus, the result further assures the non-existence of the collinearity problem between the variables.

**Table 1.** Descriptive statistics

| Variable | Observations | Mean | Standard deviation | Min | Median | Max |
|---|---|---|---|---|---|---|
| *Panel A: continuous variables* | | | | | | |
| FLID | 138 | 0.358 | 0.097 | 0.147 | 0.353 | 0.588 |
| BSIZE | 138 | 2.192 | 0.295 | 1.609 | 2.197 | 3.045 |
| BINDP | 138 | 0.229 | 0.087 | 0 | 0.222 | 0.571 |
| BGDIV | 138 | 0.147 | 0.133 | 0 | 0.125 | 0.429 |
| LEV | 138 | 0.614 | 0.264 | 0.066 | 0.647 | 0.970 |
| ROA | 138 | 0.073 | 0.069 | 0.000 | 0.046 | 0.267 |
| FSIZE | 138 | 24.51 | 1.27 | 21.20 | 24.35 | 27.53 |
| LAGE | 138 | 2.657 | 0.911 | 0 | 3.045 | 3.738 |

| *Panel B: indicator variable* | | | | | |
|---|---|---|---|---|---|
| Variable | Observations | Samples with 1 | % | Samples with 0 | % |
| ADTAF | 138 | 102 | 73.91 | 36 | 26.09 |

Table 3 summaries the regression result of FLID on different corporate attributes, including board characteristics. Column 2 reveals the main result of our model that includes both year and industry dummies to control the year and industry effect in the model. Board size, representation of independent and female directors are the essential attributes of the boardroom that affect the level and extent of corporate reporting, non-financial disclosures in particular.

The coefficient estimate 0.068 with standard error (SE) 0.033 of BSIZE reported in column 2 indicates the positive impact of board size on FLID, and this result is statistically significant at the 5% level. Hence, we can accept the first hypothesis (*H1*) suggesting a significant positive association between board size and FLID. However, our result fails to identify any significant impact of board independence on the level and extent of FLID, as the coefficient estimate of BINDP is 0.104 with SE 0.109. So, we reject *H2* and propose the insignificant impact of the ratio of independent directors on FLID. By contrast, the negative estimate (−0.183) with SE (0.072) reveals the significant association between board gender diversity and FLID, but this negative association is contrary to our expectation. This negative result

| | FLID | BSIZE | BINDP | BGDIV | ADTAF | LEV | ROA | FSIZE | LAGE |
|---|---|---|---|---|---|---|---|---|---|
| FLID | 1 | | | | | | | | |
| BSIZE | 0.088 | 1 | | | | | | | |
| BINDP | 0.199* | −0.212* | 1 | | | | | | |
| BGDIV | −0.022 | −0.163 | 0.201* | 1 | | | | | |
| ADTAF | 0.163 | −0.138 | 0.053 | −0.042 | 1 | | | | |
| LEV | 0.095 | 0.347* | −0.097 | −0.034 | 0.012 | 1 | | | |
| ROA | 0.205* | −0.212* | 0.168* | 0.212* | 0.068 | −0.586* | 1 | | |
| FSIZE | −0.017 | 0.362* | 0.039 | −0.047 | 0.063 | 0.498* | −0.359* | 1 | |
| LAGE | −0.148 | 0.452* | −0.103 | −0.204* | 0.044 | 0.172* | −0.042 | 0.023 | 1 |

**Note(s)**: The sample comprises of 138 firm-year observations. Spearman correlation is significant at the 5% level and denoted by *

**Table 2.**
Spearman correlations

| Variable | Expected sign | (1) | (2) |
|---|---|---|---|
| BSIZE | + | 0.105*** (0.027) | 0.068** (0.033) |
| BINDP | + | 0.259*** (0.082) | 0.104 (0.109) |
| BGDIV | + | −0.119** (0.060) | −0.183** (0.072) |
| ADTAF | + | 0.041** (0.016) | 0.037** (0.015) |
| LEV | + | 0.146*** (0.035) | 0.151*** (0.039) |
| ROA | + | 0.564*** (0.128) | 0.502*** (0.166) |
| FSIZE | − | −0.016** (0.006) | −0.031*** (0.009) |
| LAGE | − | −0.038*** (0.008) | −0.046*** (0.010) |
| Constant | | 0.416*** (0.136) | 0.946*** (0.240) |
| Year dummies? | | No | Yes |
| Industry dummies? | | No | Yes |
| Observations | | 138 | 138 |
| $R^2$ | | 28.5% | 59.3% |
| Adjusted $R^2$ | | 24.0% | 51.6% |

**Note(s)**: The table exhibits the estimates of FLID. Column 1 reports the coefficients of regression without including the year and industry dummies, whereas column 2 includes both year and industry dummies. Robust standard errors are reported in parentheses. 5 and 1% statistical significance from *t*-statistic is denoted by ** and ***, respectively

**Table 3.**
Regression of FLID

indicates the inclusion of more female directors on the board reduces the disclosure level of FLI. However, a similar result is also found by Dey and Faruq (2019) for voluntary intellectual capital disclosure in the Bangladesh context. Family-concentrated boardroom might be the reason for this result.

The coefficient estimate 0.037 (SE = 0.015) of ADTAF in column 2 signifies a significant positive impact of auditor type on FLID. So, we cannot reject *H4* and suggest that the audit firm's global affiliation rises the FLID level by 3.7% point. This significant positive result supports the finding of Dey and Faruq (2019) and Uyar and Kilic (2012).

The estimate of LEV also explains the significant positive relation between FLID and leverage. Thus, we accept *H5* and suggest that highly levered firms disclose more FLI in the annual report than lower leverage firms. Debt holders' perspective of the agency theory also suggests higher disclosure pressure of high levered firms. This result coincides with Alijifri and Hussainey (2007), though in contrast to Kilic and Kuzey (2018) and Uyar *et al.* (2013) who suggest a significant negative association between leverage and voluntary corporate disclosure.

The coefficient estimate 0.502 (SE = 0.166) of ROA indicates a significant positive association between profitability and FLID, which is consistent with *H6*. A profitable firm discloses more FLI because they use this positive performance-related information as an instrument to impress and convince their external users, investors and creditors in particular. Alijifri and Hussainey (2007), Alkhatib (2014) and Qu *et al.* (2015) find a similar positive impact of a firm's profitability on non-financial disclosure, whereas Kilic and Kuzey (2018) and Uyar and Kilic (2012) do not suggest any significant association.

Firm size is another explanatory variable that has a significant effect on the extent of FLID. The coefficient estimate suggests a negative association that explains smaller firms have a greater level of disclosure than larger firms. Thus, we can reject the null hypothesis. The small company looks for more capital at a lower cost, and therefore, they need to attract capital providers through a better level of corporate disclosure.

The negative coefficient estimate (=−0.046) with SE (=0.01) in column 2 indicates new firms disclosure more FLI in the annual report than older firms. Thus, this inverse association supports H8. This negative association coincides with the result of Li *et al.* (2012). Hence, the newly listed firm has a greater level of FLID.

Self-constructed FLID score is affected by the judgmental decision during the item-wise analysis of the annual report. We, thus, also calculate another FLID score that weights the quality of FLI, more specifically higher weighted given on quantitative FLI because quantification of FLI is decision-useful for the stakeholders. The regression of this weighted FLID score shows almost similar results. The statistically significant determinants are also confirmed by this additional analysis.

## 5. Conclusion

Using a sample of 138 year-firm observations of the top 30 companies listed on the DSE over a five-year sample period from 2013–2017, this paper examines the level and extent of FLID in the annual reports and the factors that determine FLID. A self-constructed FLID score is calculated through the content analysis of the annual reports. The eight-firm attributes, including boardroom attributes: board size, independence and gender diversity, audit firm's global affiliation, leverage, profitability, firm size and listing age, have been considered to find out the potential determinants of FLID. The panel regression outputs give interesting insights into the corporate reporting context of an emerging economy. The study documents the positive influence of board size on the level and extent of FLID, though board independence does not suggest any substantial impact. However, surprisingly more representation of females in boardroom reduces the FLID for our sample firms. The family-led board might be an important factor for this inverse impact. Auditor type, leverage and profitability have a significant positive effect on the level and extent of FLID. On the contrary,

firm size and listing period negatively affect FLID. A smaller firm may need to attract their shareholders and other creditors to raise funds at low cost. Thus, small firms may disclose more non-financial information to reduce information asymmetry among investors and creditors. Similarly, newly listed firms also disclose more FLI for reducing asymmetry and ensuring the collection of the future funds with minimum cost.

These results have some implications that add to previous literature by exploring the factors associated with FLID. To the best of the authors' knowledge, this is the first study exploring the level and extent of FLID and finding the determinants of FLID in Bangladesh considering both qualitative and quantitative disclosure. This study complements previous literature highlighting the significant impact of firm characteristics on FLID. The findings of the study also provide a comprehensive understanding of current FLID practice in Bangladesh and may be useful for policymakers and preparers of corporate reports and will assist the investors, creditors and other stakeholders making their investment and economic decision.

This study also has some limitations related to the following aspects. First, the sample size of 30 companies is relatively small compared to the total number, where nearly 300 companies are listed on the DSE. Second, the study is limited to only the annual report to collect data, while other relevant sources of information such as press releases, websites and prospectuses of the firms are not considered. Finally, the self-constructed disclosure score is affected by the judgmental decision.

This study is limited to only the DS30 companies in Bangladesh. Therefore, further research can focus on a particular industry, cross-country relationship or can include additional explanatory variables. Besides, the self-constructed disclosure index is also subject to some limitations, so different measure analysis might be performed to extract the disclosure level and quality. The value relevance of FLID may be further studied, particularly in the voluntary disclosure and emerging economics perspectives, e.g. Bangladesh. Moreover, further research can focus on interviews or semi-structural interviews of preparers, regulators, investors, academics and others to get further insight into FLID.

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## Appendix
## FLID index items

| No. | Items | No. | Items |
|---|---|---|---|
| 1 | Advertising and marketing plan | 10 | Industry or market risks |
| 2 | Capital expenditure plan | 11 | Investment projects |
| 3 | Dividend per share/rate | 12 | Product research, innovation and development |
| 4 | Environmental risks | 13 | Political risks |
| 5 | Expected cash flows | 14 | Increased production/service |
| 6 | Expected market share | 15 | Quality control and commercial policies |
| 7 | Expected profitability | 16 | Sales target/improved export |
| 8 | Financial risks | 17 | Share price/earnings per share |
| 9 | Growth opportunities | | |

**Corresponding author**
Pappu Kumar Dey can be contacted at: pappudey@juniv.edu