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Abstract

This study aims to explore the impact of audit characteristics and gender diversity on firm performance across family and non-family firms in Bangladesh. Using data of 61 non-family and 48 family firms from 2013 to 2019, this study applies system generalised method of moments approach to carry out regression analysis. Next, the consistency of results is detected by a full sample interaction analysis. In case of non-family firm, this study documents that Big4 audit firms (Big4) and female directors on board (FDR) have significant positive impact on firm performance. Conversely, audit meeting frequency (AMF) contributes negatively to the firm performance. Unfortunately, audit committee size (ACS) and audit committee independence (ACI) have no significant contribution on firm performance. In case of family firms, this study finds that ACS and ACI have significant negative impact on firm performance. Besides, Big4, AMF and FDR have no significant contribution on firm performance. It reflects that corporate governance mechanisms in family firm are not working well and even to some extent detrimental to the firm performance. It, ultimately, demands for reforms in corporate governance framework and incorporating new dimensions for family firms.

Keywords

Audit committee, Bangladesh, female directors, family firms, system GMM

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Introduction

This article attempts to improve the understanding about whether corporate governance tools—required by regulators and employed by firms, namely, audit characteristics and board gender diversity—add value to family and non-family firms. This study focuses on the impact of audit characteristics, that is, audit committee (AC) effectiveness, external audit quality and board gender diversity on financial performance of family and non-family firms of an emerging economy—Bangladesh.

To improve the effectiveness of corporate AC, the Blue Ribbon Committee (BRC) provided a set of recommendations on audit committee size, independence, financial literacy and expertise of members, frequency of audit committee meetings, authority over the appointment and compensation of the external auditor, disclosures regarding AC charters, and correspondence with the external auditor and shareholders (Blue Ribbon Committee, 1999). Due to some hallmarked corporate collapses (Xerox, Enron, WorldCom, Royal Ahold, and Parmalat), the demand of effective internal AC got momentum. It, consequently, reflected in the Sarbanes-Oxley Act (SOX), enacted in the United States and promulgated by the US Securities and Exchange Commission (Bédard & Gendron, 2010). This act requires that AC must be entirely composed of independent directors and comprise at least one who has financial literacy (Aldamen et al., 2012). However, ignoring cultural and institutional framework difference, many emerging economies including Bangladesh imitated or adopted the US regulations (Bédard & Gendron, 2010). For example, in recent corporate governance guidelines of Bangladesh known as ‘Corporate Governance Code (CGC) 2018’ the composition of AC should comprise with all non-executive directors (including at least one independent director) except the chairperson of the board (Bala, 2018).

Many studies (Aldamen et al., 2012; Chen & Li, 2013; Klein, 1998) work to identify the impact of independence, size and other characteristics of the board of directors and AC on firm performance and value. Nelson and Devi (2013) argue that working as a vital corporate governance tool, AC enhances the quality of earnings through ensuring internal control and the credibility of financial reporting. It ultimately ensures quality reporting, which reduces the information asymmetries among stakeholders. Moreover, quality reporting attracts investors to the firm and thus stimulates to capture profitable investments and maximise wealth of firm. It actually motivates to explore the role of audit characteristics such as audit committee size, audit committee independence and audit committee meeting frequency, and so on, on the firm performance. Next, the opportunistic behaviour of management and lack of independency, which are usual in Bangladesh (Ghosh et al., 2020), compromise the integrity of financial reporting. Alzoubi (2016) demands for quality external audit to regulate such management practices and improve the quality of financial reporting. In this study, the impact of external audit quality is also considered. Further, Harris et al. (2019) emphasise the benefits of gender diversity on corporate board (see also Srinidhi et al., 2011). Besides, Muttakin et al. (2012) identify that a good extent of gender diversity in board makes the board discussion lively and interactive. Occasionally, it increases

the productivity of male counterpart if a female director becomes an officer-in-charge. Thus, this study examines the role of gender diversity in board on firm performance.

Arguing the divergent role of corporate governance mechanisms between family and non-family firms, some recent studies (Al-Okaily & Naueihed, 2019; Leung et al., 2014) examine the moderating effect of family ownership concentration on such relationship. The existing corporate governance regulation in Bangladesh like those of manifold other countries does not discriminate between family and non-family firms ('a one size fits all' regulation). However, in case of governance structure and agency problem, family firm largely differs from non-family firm, and so typical corporate governance tools largely fail to perform in the family firms (Al-Okaily & Naueihed, 2019). Therefore, the one size fits all corporate governance regulations may not be suitable for family firms that have little or no Type I agency problem—the conflict of interests between owners and managers (Ali et al., 2007; Ho & Kang, 2013). Moreover, the corporate governance prescriptions about board and its committees based in the Anglo-American context are suitable for firms with dispersed ownership, and hence, characterised by true separation of ownership and control, which are largely absent especially in family firms with highly concentrated ownership. Next, Mustakallio et al. (2002) argue that family businesses need different governance mechanisms, for example, family council in order to resolve conflicts, build trust and cohesion and share vision among family members. Therefore, it is imperative to empirically examine the impact of traditional corporate governance tools on family firm's performance separately.

This study contributes to the existing literature concerning corporate governance in the following dimensions. First, the majority of existing studies in this area focused on developed economies. A few studies in the context of Bangladesh (Alam & Akhter, 2017; Rahman et al., 2019; Rana et al., 2017) explore the link between audit characteristics and firm performance. Next, this study extends the existing literature in the context of Bangladesh by investigating such relationship in family and non-family firms separately following Al-Okaily and Naueihed (2019) and Leung et al. (2014). Further, this study encompasses both operating efficiency (gross profit margin) and overall financial performance (earnings per share) along with the larger number of firm year observation, while previous studies focused on only overall performance. Moreover, this study uses GMM approach to estimation, which can handle dynamic endogeneity problem between dependent and independent variables.

The rest of the article is approaching as follows: section 2 presents the extant literature and develops the hypotheses followed by research methodology in section 3; section 4 demonstrates the empirical results; and the article is finally concluded some policy recommendations and limitations in section 5.

Literature Review and Hypotheses Development

One of the two major streams of agency theory research, as Eisenhardt (1989) argued, is concerned about how corporate governance mechanisms can curb self

serving actions of managers and reduce agency costs. Positivist agency theory proposes that information systems can control managerial opportunism in firms (Eisenhardt, 1989). For example, Fama (1980) and Fama and Jensen (1983) describe how efficient capital and labour markets and board of directors can play roles to curb managerial opportunism. Audit committee (AC), a sub-committee of the board, plays a significant role in corporate governance by restricting management's opportunistic behaviour (Sultana, 2015) through overseeing the entire financial reporting and auditing process and, monitoring the functioning of internal control mechanisms and risk management practices (Al-Okaily & Naueihed, 2019; Bhuiyan et al., 2007; Owens-Jackson et al., 2009; Persons, 2009; Rahman et al., 2019). To play its role effectively, AC needs substantial director resources in terms of number of directors, directors' time spent in meetings, directors' financial expertise and experience (Sultana, 2015). Therefore, it is argued that audit committee effectiveness is enhanced by the committee's size (Al-Okaily & Naueihed, 2019), independence (Klein, 2002), financial expertise (Kusnadi et al., 2016; Sultana, 2015), experience (Sultana, 2015) and frequency of audit committee meetings (Sultana, 2015).

A number of previous studies (for example, Aldamen et al., 2012; Al-Okaily & Naueihed, 2019; Chen & Li, 2013; Hamdan et al., 2013) linked audit characteristics and firm performance. AC effectiveness is found to have significant impact on financial reporting quality, internal audit quality and external audit quality, and hence companies with more effective ACs are more likely to make better financial decisions (Velte, 2017). Consequently, financial reports of those firms seem to be more trustworthy to investors, which in turn are supposed to enhance market and operating performance of the firms. Dao et al. (2013) argue that US firms with higher AC members' experience (as measured by average AC members' age) have negative impact on cost of equity capital, which is widely recognised to increase operational efficiency and profitability. Similar effect on cost of equity capital has also been reported by Chen and Li (2013), who argue that voluntary adoption of stringent AC requirements where all members are independent and have financial expertise are supposedly linked to better operational efficiency and performance.

Audit Committee Size

Audit committee size reflects the amount and diversity of AC resources in terms of skills and knowledge (Karamanou & Vafeas, 2005). Resource dependence theory suggests that firms can achieve better performance when AC size is larger, AC can utilise its diverse expertise and experience to improve monitoring and benefit shareholders and other stakeholders (Pearce & Zahra, 1992; Saleh et al., 2007). However, family directors possess high and diverse level of family business experience and cultural background (value overlap and commitment) that enable the firms to do without larger additional director resources (García-Ramos & García-Olalla, 2011). Given the family dominant boards in family firms, like Jaggi and Leung (2007), it can be argued that monitoring effectiveness of AC in family firms is lower and cannot significantly improve firm performance.

Similarly, Al-Okaily and Nauihed (2019) note that larger AC in terms of members significantly contribute to the firm performance in non-family firms, but that contribution is insignificant in family firms. Therefore, the first hypothesis is:

H₁: The impact of audit committee size on firm performance will be significantly different between family and non-family firms.

Audit Committee Independence

Independent directors in audit committees are supposed to strengthen the monitoring role of AC and improve corporate governance quality. Kent et al. (2010) find that AC independence has positive impact on the quality of financial information, external audit and internal control and enhance investors' perceptions about the firm (Bédard & Gendron, 2010). Consequently, it can be expected that audit committee independence positively influences firm performance. However, Leung et al. (2014) find the impact of board independence on the firm performance is very low. As a result, there is no conclusive evidence regarding the connection between AC independence. Moreover, AC is less effective in family controlled firms as the members must remain loyal to family members to develop informal personal relationships with them to ensure their future reappointment (Al-Okaily & Naueihed, 2019). As AC members in family firms cannot oppose and therefore have to remain loyal to the controlling family members who hire them, their independence in such firms is diluted, and AC effectiveness is hence compromised. Thus, this study assumes:

H₂: The impact of audit committee independence on firm performance will be significantly different between family and non-family firms.

Audit Committee Meeting Frequency

The AC must meet to perform its monitoring role. The number of AC meetings held reflects the diligence, extent of commitment and time spent for monitoring, while fewer meeting is considered as lack of commitment of the AC and/or insufficient time spent for monitoring (Bédard & Gendron, 2010). The CGC 2018 requires that AC of each listed firm should arrange meeting at least for four times in a year (BSEC, 2018). However, the finding of Bédard and Gendron (2010) regarding the link between the frequency of meetings and AC effectiveness are mixed. The impact of AC meeting frequency is found positive in respect of accounting conservatism (Sultana, 2015), quality of accounting information (Vafeas, 2005) and internal control (Krishnan & Visvanathan, 2007). Moreover, recurrent AC meetings help AC to monitor financial reporting actively, and thus firms achieve lower cost of debt (Anderson et al., 2003). Next, Al-Okaily and Naueihed (2019) find that AC meeting frequency has significant positive impact on performance of non-family firms and insignificant effect on that of family

firms (see also Bédard et al., 2004). Conversely, some studies (for example, Alqatamin, 2018) find negative impact, and sometimes even insignificant, on firm performance. In Bangladesh, Rahman et al. (2019) find negative association between AC meeting frequency and firm performance. This indicates that the larger number of meetings does not necessarily translate into effective monitoring, and sometimes indicates inefficiency of the AC.

However, AC meeting frequency may not improve monitoring of family firms as informal mechanisms such as family gatherings and the family council is more frequently used for discussions and exchange of important information among family directors for monitoring of business operations (Habbershon & Williams, 1999). Family meetings are used to resolve conflicts among family business owners and the family council acts as a corporate governance mechanism in such firms (Dana & Smyrniotis, 2010). Moreover, Khan et al. (2015) report that family owners themselves act as more effective controllers than other types of large shareholders because of their higher interest in the firm, long-term investment horizon and concern for reputation. In addition, family owners have direct access to information of the firm operations. Consequently, it can be argued that these firms demand for and depend more on informal family exchanges rather than formal meetings for the purpose of monitoring. Therefore, this study hypothesises:

H₃: The impact of audit committee meetings on firm performance will be significantly different between family and non-family firms.

External Audit Quality

The external statutory audit is the single most important external corporate governance mechanism that is supposed to add value directly to financial reports. Like many previous studies, this study uses Big4 audit firm as the indicator of external audit quality. The Big4 audit firms have more competent human resource and better financial and technological resources to provide services to large companies than small local audit firms, which have limited number of highly competent employees and limited financial and technological resources to provide with personalised services, and they can be expected to meet client requirements (Sawan & Alsaqqa, 2013). Some studies (DeFond et al., 2014; DeFond et al., 2017) argue that Big4 audit firms have significant positive impact on quality of accounting information. Next, many studies (Afza & Nazir, 2014; Al Ani & Mohammed, 2015; Alqatamin, 2018; Farouk & Hassan, 2014) document positive significances between Big4 audit firm and firm performance.

In Bangladesh, Big4 accounting firms currently provide audit and advisory services coalescing with local member firms (currently Rahman Huq as KPMG, Nurul Faruk Hasan and Co. as Deloitte, A. Qasem and Co. as EY). It has created a significant improvement in audit scenarios in Bangladesh (Belal et al., 2017). Rahman et al. (2019) find that Big4 significantly contributes to the firm performance in Bangladesh. However, Kabir et al. (2011) report that Big4 auditor affiliation does not have overall positive impact on earnings quality in Bangladesh. Next,

Siddiqui et al. (2013) argue that Big4 affiliated audit firms do not receive audit fee premium in Bangladesh. It indicates that Big4 affiliated firms' audit quality is not significantly higher/perceived to be higher by stakeholders. While many previous studies (Kabir et al., 2011; Siddiqui et al., 2013) were conducted when Big4 firms operated through affiliate firms only, Big4 firms provide services through full members now. Based on the above scenario, this study expects that Big4 audit has significant influence on their clients' performance. However, family firms in Bangladesh tend to exhibit less demand for high quality audits in Bangladesh. Khan et al. (2015) document that family firms in Bangladesh pay significantly lower audit fees and appoint low ranked audit firms than their non-family counterparts do. Conversely, in export oriented industries family firms pay higher audit fees and go for hiring quality auditors. It is a positive sign. Based on the above discussion, we formulate the following hypothesis:

H₄: The impact of external audit quality (Big4) on firm performance will be significantly different between family and non-family firms.

Board Gender Diversity

Catalyst (2004) argues that firm with diversity produces better financial results. Diversity in skills, knowledge and experience is recognised as a prerequisite for better decision making. Board gender diversity can be supported by using various theoretical perspectives. According to agency theory, the board is entrusted with the monitoring of management actions to reduce agency problems (Finegold et al., 2007). Female directors add another facet to the oversight lens since the diversity of backgrounds is argued to increase effectiveness in monitoring (Low et al., 2015). Stakeholder theory suggests that the board should look after the interests of not only the shareholders but also other stakeholders, for example, customers, employees, suppliers and other parties that are of importance to the firm (Finegold et al., 2007). Female directors exhibit increased sensitivity to social and environmental concerns, and it is, therefore, expected that firm will perform better in these areas, which will increase the firms' reputation. Moreover, resource dependence theory argues that female directors on board tend to enhance board human and relational capital of board, and provide better understanding especially about female consumer markets, wider and sustained ties with external parties (Carter et al. 2003; Hillman & Dalziel, 2003). Besides, legitimacy theory suggests that by adopting more gender diverse boards, firms can respond to the pressures from institutional investors and labour markets, and attain increased legitimacy and business advantages (Singh et al., 2007). This, in turn, can strengthen firm performance.

The empirical findings of gender diversity nexus firm value and performance are mixed in nature (Finegold et al., 2007). Carter et al. (2003) and Erhardt et al. (2003) in the context of the USA, Campbell and Minguez-Vera (2008) in the context of Spain, and Julizaerma and Sori (2012) in the context of Malaysia find the positive association. However, some studies (Carter et al., 2010; Marimuthu

& Kolandaisamy, 2009; Wang & Clift, 2009) find insignificant or even negative results. In spite of strong theoretical support, such negative and insignificant results are highly ambiguous (Low et al., 2015). In addition, Campbell and Minguez-Vera (2010) and Wang and Clift (2009) explain that the conflicting results may have arisen from poor estimation methods, small sample size, short term view of performance and lack of control for endogeneity between gender diversity and firm performance. In Bangladesh, Meah and Chaudhory (2019), Muttakin et al. (2012) and Rashid and Pervin (2019) find positive impact of female directors on firm performance.

Moreover, the role of female directors on corporate board varies between family and non-family firms. Muttakin et al. (2012) argue that most of the female directors on corporate board in Bangladesh are appointed based on family relations and friendship; the inclusion of wives, daughters and sisters-in-law of sponsor directors emphasises the fact that female directors are appointed regardless of their educational and skill background in Bangladesh. Family firms tend to hire more female directors than non-family firms, and thus there will be different roles of those hired female board members on firm performance in family and non-family firms. For example, Muttakin et al. (2015) find that female directors have negative impact on CSR disclosure quality in Bangladesh and female directors further decrease CSR disclosure in family firms. Thus, above arguments have led to develop the following hypothesis:

H₅: The impact of gender diversity on corporate board on firm performance will be significantly different between family and non-family firms.

Methodology

Sample Selection and Variable Measurement

This study uses the hand collected data from the annual reports of 109 listed manufacturing firms in Dhaka Stock Exchange (DSE). However, this study has dropped some firm years due to unavailability of annual reports and insufficient reporting. Hence, total 109 firms are selected over a period of 7 years from 2013 to 2019, which result in 681 firm years. Besides, this study does not consider the firms before 2013 as the current corporate governance regulation has been greatly modified in 2012 and is reflected in the annual reports in 2013. Table 1 gives an overview on the breakdown of the collected sample.

Table 1. Breakdown of Sample Selection.

Industry Distribution	Population (Total Firms)	Sample (Selected Firms)	Non-family Firms	Family Firms	Percentage (%)
Cement	07	06	03	03	85.71
Ceramics	05	04	03	01	80.00

(Table 1 continued)

(Table 1 continued)

Industry Distribution	Population (Total Firms)	Sample (Selected Firms)	Non-family Firms	Family Firms	Percentage (%)
Food and Allied	17	12	05	07	70.59
Jute	03	02	01	01	66.67
Tannery	06	02	01	01	33.33
Power and Fuel	19	12	10	02	63.16
Pharmaceuticals	30	22	10	12	73.33
Textiles	52	28	16	12	53.85
Engineering	36	19	11	08	52.78
Paper and Printing	03	02	01	01	66.67
Total	178	109	61	48	61.00

Source: Author's own development.

Table 2. Variable Segment and Measurement Technique.

Variables	Short Name	Measurement
Dependent Variables		
Gross profit margin	GPM	The ratio of gross profit to total sales revenue
Earnings per share	EPS	$\frac{\text{Net Income} - \text{Dividends on Preferred Stock}}{\text{Average Outstanding Shares}}$
Independent Variables		
Audit committee size	ACS	The number of directors in the audit committee
Audit meeting frequency	AMF	Number of audit committee meetings in a year
Audit committee independence	ACI	The ratio of independent directors in audit committee
External audit quality	Big4	If audited by big-4 firm, then valued 1, otherwise 0.
Female director ratio	FDR	The ratio of female directors in board
Family dummy	FD	If the firm is family firm, then this study assigns 1, otherwise 0 for all non-family firms.
Firm Specific Control Variables		
Director ownership	D O W N	The percentage of shares held by the directors.
Foreign ownership	F O W N	The Percentage of shares held by the foreign owners.
Large ownership	L O W N	The percentage of shares held by the institutional shareholders

(Table 2 continued)

Variables	Short Name	Measurement
Board independence	<i>BIND</i>	The ratio of independent directors in board
Board meeting	<i>BM</i>	The frequency of board meetings in a year.
Board size	<i>BS</i>	The number of directors in board
Age	<i>AGE</i>	The number of years from incorporation
Aggressive investment decision	<i>AID</i>	The ratio of current assets to total assets
Leverage	<i>LEV</i>	The ratio of total long-term debts to total assets

Source: Author's own development.

Identification of Family and Non-family Firms

Family firms are separated from non-family firms based on several standards. Some studies use the percentage of shares held by family members or family members on corporate board to define family-controlled firms (Kahveci & Wolfs, 2019; Razzaque et al., 2016; Tan & Amran, 2016).

La porta et al. (1999) identify family-dominated firms at 20% cut-off point, which is later followed in the studies of Cascino et al. (2010) and Setia-atmaja et al. (2011). Following the argument of Cascino et al. (2010) not to rely on a single measure of identifying family firms, this study considers the characteristics suggested by Meah (2021) to segregate family firms from non-family firms. Meah (2021) identifies family firms: (a) using the non-financial data of annual reports, where the relationship between chairman and CEO/MD is clearly stated—if the chairman and CEO/MD of a firm are from the same family that firm is defined as family-controlled firms; (b) using the position of female director as chairman or CEO/MD—if a firm is run by a female head that firm is identified as family firm but this condition is kept out of consideration in case of MNCs; (c) using the surname of board of directors—if the corporate board of a firm consists of more than 50% directors including chairman and CEO/MD with the same surname that firm is referred to family-led firm; and (d) using the primary data—if there is a doubt on the identification of firm types, information from reliable person related to that firm is used to define whether the firm is running with family-dominance.

Model Specification

To identify the impact of audit characteristics and board gender diversity on firm performance, the following model is estimated for both family and non-family firm sub-samples.

$$Firm\ Performance_{it} = \alpha_0 + B'.X_{it} + \delta FDR_{it} + \Phi'.Z_{it} + \varepsilon_{it} \quad (1)$$

Here, i represents the i -th firm and t (2013, ..., 2019) represents time period for each firm. *Firm Performance* comprises both gross profit margin (GPM) and earnings per share (EPS). X and Z represent column vectors of audit characteristics and firm specific control variables, respectively, affecting firm performance. Next, B and Φ represent the coefficient column vectors of audit characteristics and firm specific control variables affecting firm performance. Finally, δ represents the effect of board gender diversity (FDR) on firm performance. The following model represents the full form of column vectors and coefficient column vectors of audit characteristics and board gender diversity.

$$\begin{aligned} \text{Firm Performance}_{it} = & \alpha_0 + \beta_1 ACS_{it} + \beta_2 AMF_{it} + \\ & \beta_3 ACI_{it} + \beta_4 Big4_{it} + \delta FDR_{it} + \Phi' Z_{it} + \varepsilon_{it} \end{aligned} \quad (2)$$

Here, the regression coefficients ($\beta_1, \beta_2, \beta_3$ and β_4) represent the impact of audit characteristics on the firm performance of both the family and non-family firms.

To cross check the results, the dummy variable (FD) is created by assigning 1 for all family firms and 0 for all non-family firms. A full sample interaction analysis is conducted by using following model.

$$\begin{aligned} \text{Firm Performance}_{it} = & \alpha_0 + \lambda_1 ACS_{it} + \lambda_2 AMF_{it} + \lambda_3 ACI_{it} + \\ & \lambda_4 Big4_{it} + \theta FDR_{it} + \varpi FD_{it} + \phi_1 ACS * FD_{it} \\ & + \phi_2 AMF * FD_{it} + \phi_3 ACI * FD_{it} + \phi_4 Big4 * FD_{it} \\ & + \phi_5 FDR * FD_{it} + \Phi' Z_{it} + \zeta_{it} \end{aligned} \quad (3)$$

Here, the regression coefficients ($\lambda_1, \lambda_2, \lambda_3$ and λ_4) represent the impact of audit characteristics on firm performance. Next, θ represents the effect of board gender diversity (FDR) on firm performance. Again, ϖ represents the impact of dummy variable (FD) on firm performance. Finally, the regression coefficients ($\phi_1, \phi_2, \phi_3, \phi_4$ and ϕ_5) represent the impact of interaction effect of audit characteristics and board gender diversity on firm performance. This study takes all interaction terms ($ACS * FD, AMF * FD, ACI * FD, Big4 * FD$ and $FDR * FD$) in square form to account the multicollinearity problem in interaction analysis. The pair wise correlation is well below from 90% level (see also, Al-Okaily & Naueihed, 2019). The definition and measurement of variables are given in (Table 2).

Applied Statistical Tools

Endogeneity is a potential problem while this study investigates the link between audit characteristics, board gender diversity and firm performance (Leung et al., 2014). Instead of firm performance being determined by audit characteristics and gender diversity, it is quite possible that audit characteristics and female presence on the board are determined by firm performance. Besides, the omitted variables bias and measurement error can create the endogeneity problem (Greene, 2012; Roodman, 2006). Therefore, this study uses a theoretically better estimation approach (system GMM method) than previous studies to control for such

problem. This system GMM approach uses levels equation to obtain a system of two equations, that is, one in differenced form and another in levels form. This second equation helps to obtain additional instruments. Therefore, in second equation, the variables, which are in levels form, are instrumented with their own first difference. Consequently, it increases efficiency. Besides, the system GMM has been used to remove endogeneity problem (the regressors may be correlated with the error terms) and to remove firm specific unobserved (inborn) heterogeneity (i.e. the firm specific fixed effect may be correlated with the error terms) (Blundell & Bond, 1998). Moreover, system GMM has augmented difference GMM estimation through the introduction of an additional assumption, which generates additional set of moment conditions to leverage. The Equation 2 and Equation 3 are estimated by second step system GMM. In system GMM, Sargan J-statistic is used for testing over identifying restrictions (Roodman, 2006). The higher the *p*-value of Sargan J-statistic, the better the GMM result is. The estimated results of Equation 2 and Equation 3 are provided in Table 5 and Table 6, respectively.

Empirical Results

Descriptive Statistics

Table 3 summarises the descriptive statistics of dependent, independent and control variables for full sample year. The sample firms enjoy an average of

Table 3. Summary Statistics of the Full Sample.

Variables	Mean	SD	Q1	Median	Q3
GPM(%)	22.44	23.46	13.51	20.26	31.04
EPS	6.60	16.23	0.92	2.23	5.17
ACS	3.36	0.6248	3	3	4
AMF	3.48	1.85	1	4	4
ACI(%)	38.72	14.32	33.33	33.33	50.0
Big4	0.154	0.361	0	0	0
FDR(%)	16.19	15.22	0	14.29	28.57
DOWN(%)	36.97	21.36	26.24	36.25	50.46
FOWN(%)	5.67	17.67	0	0	29.0
LOWN(%)	20.09	15.08	5.85	14.05	23.53
BIND(%)	24.95	9.26	20.0	25.0	28.57
BM	8.66	5.42	5	8	10
BS	7.324	2.145	5	7	8
AGE	16.80	11.57	6	16	27
AID(%)	52.60	20.0	37.41	53.85	65.51
LEV(%)	27.34	22.14	22.05	33.51	50.34
FD	0.45	0.50	0	0	1

Source: Author's own development.

22.44% gross profit margin and 6.60 EPS (in Bangladeshi Taka). Average percentage of shares held by directors (DOWN), foreign entities (FOWN) and corporate institutions (LOWN) are 36.97%, 5.67% and 20.09%, respectively. A corporate board including approximately 7 members appoints nearly 25% independent directors and 16% female directors who meet more than 8 times in a single financial year. An audit committee includes an average of 39% independent members out of 3.36 members who meet for 3.48 times in a single year. Bangladeshi manufacturing firms welcome an average of 15.42% Big4 auditors and include nearly 27% long-term debts in their capital. Total assets are largely dominated by current assets, which represents 52.60% and average firm age is approximately 17 years. Finally, 45% of sample years are found as family-controlled, whereas the rest are non-family firms.

Table 4 presents the difference of mean tests of all variables used in this study. In this table, it is documented that family firms include 309 firm years (45% of total observations) and non-family firms include 372 firm years (55% of total observations). Table 4 also reveals that the mean values of all variables (dependent, independent and control variables) except LOWN and AID are statistically different from family to non-family firms. Gross profit margin (GPM) and accounting performance (EPS) are higher in non-family firms (24.40% and 9.83 BDT respectively) compared to family firms (20% and 2.71 BDT respectively), and this variation is statistically significant at 1% level. Thus, it is expected that there will be a significant variation of impact of AC characteristics and gender diversity on firm performance measures between family and non-family firms.

Table 4. Results of Mean Difference Tests.

Variables	Mean		t-Statistic
	Family Firms	Non-family firms	
<i>GPM</i> (%)	20	24.40	2.4***
<i>EPS</i>	2.71	9.83	5.84***
<i>ACS</i>	3.31	3.40	1.86*
<i>AMF</i>	3.65	3.35	-2.11**
<i>ACI</i> (%)	38.13	39.20	0.97*
<i>Big4</i>	0.0647	0.2285	6.04***
<i>FDR</i> (%)	21.81	11.52	-9.32***
<i>DOWN</i> (%)	44.18	30.98	-8.43***
<i>FOWN</i> (%)	1.98	8.74	5.05***

(Table 4 continued)

(Table 4 continued)

Variables	Mean		t-Statistic
	Family Firms	Non-family firms	
<i>LOWN</i> (%)	23.09	17.59	-0.68
<i>BIND</i> (%)	26.30	23.83	-3.49***
<i>BM</i>	9.21	8.20	-2.42***
<i>BS</i>	6.98	7.61	3.81***
<i>AGE</i>	17.66	16.09	-1.76*
<i>AID</i> (%)	52.89	52.37	-0.3350
<i>LEV</i> (%)	38.89	36.04	-1.68*

Source: Author's own development.

Note: *** $p < .01$ denotes significant at 1% level, ** $p < .05$ denotes significant at 5% level, * $p < .1$ denotes significant at 10% level.

Findings and Interpretation

From the analysis (Table 5), in case of listed manufacturing non-family firms of Bangladesh, this study finds that audit meeting frequency (AMF) has significant

Table 5. Regression Results (System GMM Approach).

Variables	Non-family Firms		Family Firms	
	GPM Model 1 Coefficient	EPS Model 2 Coefficient	GPM Model 3 Coefficient	EPS Model 4 Coefficient
<i>ACS</i>	0.0084 (0.126)	0.4185 (0.782)	-0.2310*** (0.004)	-2.3792** (0.018)
<i>AMF</i>	-0.0091** (0.049)	-0.8946*** (0.006)	0.0368 (0.141)	-0.8945 (0.652)
<i>ACI</i>	0.0268 (0.437)	1.5169 (0.796)	-2.0783*** (0.000)	-8.453** (0.028)
<i>Big4</i>	0.0231* (0.082)	3.5827** (0.027)	0.0173 (0.775)	6.0669 (0.271)
<i>FDR</i>	0.1105* (0.080)	9.5749* (0.075)	0.5950 (0.285)	7.7487 (0.175)
<i>DOWN</i>	-0.0514 (0.226)	-9.8823 (0.160)	0.0514** (0.026)	4.4578** (0.001)

(Table 5 continued)

(Table 5 continued)

	Non-family Firms		Family Firms	
Variables	GPM Model 1 Coefficient	EPS Model 2 Coefficient	GPM Model 3 Coefficient	EPS Model 4 Coefficient
FOWN	-0.0730 (0.177)	4.8531 (0.636)	-0.5486 (0.125)	5.5228 (0.428)
LOWN	-0.1166** (0.030)	3.2197 (0.656)	0.3767 (0.273)	12.3081*** (0.002)
BIND	-0.0271 (0.699)	-5.1619 (0.811)	-1.1237*** (0.000)	-12.3085*** (0.002)
ln BM	-0.0018 (0.940)	-2.5634 (0.645)	-0.3099** (0.043)	-8.7281*** (0.000)
ln BS	0.1570** (0.026)	12.8661** (0.031)	0.6837 (0.421)	11.5627* (0.075)
ln AGE	-0.0032 (0.750)	3.160 (0.324)	-0.1762 (0.377)	-0.5567 (0.493)
AID	-0.1286*** (0.002)	10.9035 (0.160)	-0.6070 (0.240)	8.9533*** (0.000)
LEV	-0.0333 (0.595)	5.8803 (0.475)	-0.2273 (0.517)	-0.3068 (0.456)
CONSTANT	0.1337 (0.852)	12.516 (0.312)	2.4627* (0.069)	-9.423** (0.024)
AR(2)	0.333 (0.739)	-1.128 (0.259)	0.744 (0.457)	-1.280 (0.201)
J-Statistics	15.869 (0.666)	20.972 (0.104)	11.777 (0.546)	23.715 (0.127)

Notes: *** $p < .01$ denotes significance at 1% level, ** $p < .05$ denotes significance at 5% level, * $p < .10$ denotes significance at 10% level.

Probability value (p -value) has been presented in parentheses).

The null hypothesis of Sargan test is 'the instruments as a group are exogenous'. Hence, p -value higher than 10% shows good results.

In robust estimation, Stata reports the Hansen J statistic instead of the Sargan with the same null hypothesis. Besides, AR (2) reflects that results are devoid of autocorrelation problem.

negative impact, while external audit quality (Big4) has significant positive impact on the firm performance. It indicates that the performance of non-family firms will decrease with the increased level of AC meeting, and will increase with statutory audit by Big4 audit firms. Meanwhile, this study does not find any statistical significance of AMF and Big4 in case of family firms. This result proves empirically posited idea (García-Ramos & García-Olalla, 2011; Ho & Kang, 2013) that the corporate governance mechanisms work to a small extent or are sometimes even detrimental to the firm performance of family firms. Next, this study does not find any statistical significance of audit committee size (ACS) and audit committee independence (ACI) in case of non-family firms of Bangladesh.

It indicates that the financial performance of the firms is not associated with ACS and ACI. Actually, it means that independent directors in the AC fail to contribute or fall behind in decision-making either intentionally or unintentionally in Bangladesh. Besides, it signalises the lack of independence of independent directors in AC of non-family firms. This problem is exaggerated by the existence of weak stock market control mechanisms and poor legal protection in developing countries like Bangladesh. Meanwhile, in case of family firms, this study finds that ACS and ACI have significant negative impact on the firm performance (see also, Boubaker & Nguyen, 2014). This result again indicates the failure of corporate governance mechanism in family firms (see also, Al-Okaily & Naueihed, 2019). The large AC size with the existence of more independent directors may not align the interests of the family shareholders with those of family managers as family firms are devoid of ordinary agency problem between managers and shareholders. Again, Boubaker and Nguyen (2014) argue that in public family firms, smaller AC size works well in respect of facilitating decision-making and reducing free-riding problems. Therefore, this study argues that the corporate governance mechanism is not working well in the listed manufacturing firms of Bangladesh, and to some extent, detrimental to the firm performance of public family firms. Finally, the presence of female directors in board (FDR) has significant positive impact on financial performance of public non-family firms (see also, Hillman & Dalziel, 2003). However, this study does not find any statistical significance of FDR in listed family firms. It indicates that women with embellished educational background are independently appointed in public non-family firms and contribute to the firm performance. Meanwhile, in public family firms, women who are mostly appointed based on family decision regardless of educational qualification fail to contribute to the firm performance (see also, Muttakin et al., 2012).

Robustness Check

To cross check the consistency of results, this study carries out following additional analysis (Table 6). First, this study generates a dummy variable (*FD*) to separately identify the family impact and run full sample interaction analysis. The results are presented in Table 6. The test results reveal the consistency of previous findings. Family dummy (*FD*) has significant positive impact on firm performance. It indicates the positive impact of family effect on the firm performance of listed manufacturing firms of Bangladesh (see also, Al-Okaily & Naueihed, 2019). Besides, the interaction of audit characteristics (except $ACS * FD$) and board gender diversity with family dummy shows the consistent results. This study does not find any significance of $ACS * FD$ on firm performance. The non-tabulated results of firm specific control variables are consistent with main findings.

Results of control variables are not presented in this table due to space limitations. Here, the Hansen J statistic reflects that the instruments as a group are exogenous. Besides, AR (2) reflects that results are devoid of autocorrelation problem.

Table 6. Regression Results (System GMM Approach).

Variables	GPM Model 1 Coefficient	GPM Model 1 P-value	EPS Model 2 Coefficient	EPS Model 2 P-value
<i>FD</i>	0.826**	0.045	5.109**	0.036
<i>ACS</i>	0.0134	0.563	1.001	0.367
<i>AMF</i>	-0.0078*	0.075	-0.2143**	0.027
<i>ACI</i>	0.1178	0.313	5.2736	0.109
<i>BIG4</i>	0.0012*	0.056	2.8456**	0.028
<i>FDR</i>	0.623**	0.043	0.7237**	0.045
<i>ACS*FD</i>	-0.0849	0.313	-1.1341	0.440
<i>AMF*FD</i>	0.1232	0.306	-0.2829	0.426
<i>ACI*FD</i>	-2.0959***	0.000	-7.3913**	0.048
<i>Big4*FD</i>	0.0345	0.133	3.4513	0.213
<i>FDR*FD</i>	1.0201	0.274	7.3589	0.292
<i>CONSTANT</i>	-0.0220	0.944	0.4898	0.965
<i>AR(2)</i>	1.137	0.255	-1.567	0.1171
<i>J-Statistics</i>	18.466	0.360	13.684	0.396

Source: Author's own development.

Notes: *** $p < .01$ denotes significance at 1% level, ** $p < .05$ denotes significance at 5% level, * $p < .10$ denotes significance at 10% level.

Conclusion and Policy Implications

This study attempts to examine the impact of audit characteristics and gender diversity on firm performance in family and non-family firms. The empirical results from system GMM method reveal that gender diversity and Big4 auditing firms positively and significantly influence the level of performance, whereas the frequency of AC meetings negatively and significantly affects that performance in non-family firms. Moreover, the impact of ACS and ACI is significantly negative in family firms. The impact of all other corporate governance variables on firm performance is statistically insignificant in family and non-family firms.

Rahman et al. (2019) find the negative significant impact of AC meetings on firm performance in Bangladesh. It is probable that the members may involve in unnecessary and unproductive discussions during their meetings; thus there should be a precise and clear agenda, which would be discussed on the meetings held by AC so that they can utilise their time, efforts and other resources in a pre-planned issue that will add value to the firm. Muttakin et al. (2012) argue that most of the female directors on corporate board are the wives, daughters and other relatives of sponsor directors who are appointed based on family identity instead of proper educational background to create more family control in firms. Consequently, they cannot play their role on firm, which is consistent with these

findings that the role of female directors is insignificant in family firms. It is also revealed in the results from the interaction analysis that family firms also want to ensure firm performance but none of the independent variables (audit characteristics and gender diversity) contribute to that; it implies that there must be some other factors or conditions instead of audit characteristics and gender diversity that help family firms enjoy better firm performance. Mustakallio et al. (2002) argue that family businesses need different governance mechanisms, for example, family council in order to resolve conflicts, build trust and cohesion and share vision among family members.

This study tries to extend the existing literature on auditing, gender diversity and firm performance in family and non-family firms. The findings of this investigation could be useable for the policy makers who are thinking about corporate governance reforms. Investors can get insights about the weak corporate governance existence in family firms due to the insignificant and negative role of audit characteristics and gender diversity on firm performance, and take proper investment decisions.

This study contains some limitations. First, AC member expertise and female director literacy/skills are not considered in our study. Second, financial sector is not included in the sample selection to draw a generalised conclusion. Third, market firm performance measurement Tobin'Q is absent as a proxy of profitability. Future research can be done on the following areas: consideration of financial sector, inclusion of AC expertise and female director literacy, application of cross-cultural contexts, and so on. Moreover, sample before and after the modification and application of CGC 2018 could be used to make a comparison between the efficiency of CG before and after 2018.

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