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Article

Board gender diversity and corporate social responsibility

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ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

Board gender diversity and corporate social responsibility

Sanyaolu Wasiu Abiodun^{1*}, Sanni Micheal Rotimi², Sultanova Menslu³, Kenzhin Zhaxat⁴, Kuangaliyeva Tursynzada⁵ and Adesina Biola Hammed⁶

Abstract: While board gender diversity (BGD) and corporate social responsibility (CSR) have become topics of global interest among practitioners, regulators and academicians, most existing studies, particularly on Nigerian banks, have majorly concentrated on the effect of BGD on financial performance. It has also been observed that the few studies on banks have mostly viewed the nexus from static perspective. To the best of our knowledge, there is no study that has used dynamic data analysis approach involving generalised method of moment (GMM) on BGD and CSR nexus of Nigerian banks. To this extent, this study aims to examine the effect of BGD on CSR of 12 listed deposit money banks in Nigeria from 2012 to 2021 using dynamic analysis involving GMM. The study is anchored on three theories, which are stakeholders' theory, legitimacy theory and gender socialization theory. Findings show that BGD has no significant positive effect on CSR, implying that BGD does not affect firm commitment to CSR endeavours. The study recommends that more women should be appointed to the boardroom and given equal opportunities as their male counterparts in corporate and strategic decision-making so as to foster good relationship with stakeholders. The outcome of our study is of significant relevance to bank stakeholders such as managers, regulators, policy-makers and academicians on the need for more women representation and participation in corporate and strategic decision-making.

Subjects: Corporate Finance; Banking; Business, Management and Accounting

Keywords: board gender diversity; corporate social responsibility and generalized method of moment

1. Introduction

The main objective of this study is to investigate the effect of board gender diversity (BGD) on corporate social responsibility (CSR) in Nigerian listed deposit money banks (DMBs). The investigation is motivated by the rising social challenges as evidenced in poverty, social inequality and corruption. These challenges are calling for firms' attention to uphold sustainability in their operations by embarking on strategies and policies that will reduce these challenges. Gender diversity in the board room and the embracement of CSR are the viable tools these challenges can be overcome.

CSR is used by firms to attain competitive advantage. CSR research has excelled in management sciences since the 1950s (Bergamaschi & Randerson, 2016; Moura-Leite & Padgett, 2011; Novitasari et al., 2023). Thus, it has become a topic of intense debate among researchers, organizations and standard setters (Dwekat et al., 2020). The concept has gained more prominence recently due to the great role it plays in ensuring long-run balance between firm commercial viability and loyalty to the society (Galant & Cadez, 2017). Thus, firms' success is not achievable in isolation of prioritising and satisfying the interest of all stakeholders who affect and are affected by their operation.

CSR refers to the activities, processes and status of a company in relation to its obligation to stakeholders (Hsu & Cheng, 2012; Novitasari et al., 2023). It signals firms' ethical behavior beyond legal compliance (Yazdani et al., 2022). It is a concept in management that integrates social responsibility to the environment, stakeholders and the broader society into firm philosophy (Blowfield, 2005). The application and relevance of CSR are sacrosanct for attaining firm strategy and activities that are geared at reducing cost, improving the productivity of labour, effective risk management, enhancing public image or improving proper environmental management (Ienciu et al., 2012).

From the theoretical perspective, legitimacy theory argues that firms use CSR endeavour to make their activities conform with the societal norms in order to improve their corporate image. According to stakeholders' theory, firm must prioritize the interest of all its stakeholders who affects and are affected by the operation of the business. In the submission of Freeman (1984), firm must seek to satisfy the interest of all its stakeholders such as shareholders, creditors, competitors, government, the society and customer in order to achieve its main economic objective. This argument invalidates the postulation of the agency theory of Jensen and Meckling (1976), which sees firm as comprising the principal and the agents and that the agents are only responsible and accountable to the principals by taken courses of action that satisfy their interest.

Companies are now seeing CSR as an integral part of their corporate management practice (Crane et al., 2017), and the activity has been popularized by the disclosure of CSR reports by multinational companies in order to outline their efforts and achievements on CSR (Frerichs & Teichert, 2023). However, CSR is a voluntary endeavour, but in the recent time, the pressure from stakeholders has made the practice more popular among firms. Thus, firms must engage in philanthropic activities in order to gain competitive advantage and have good relationship with its stakeholders. Companies engage in CSR for several motives, including improving their corporate image (Siregar & Bachtiar, 2010), fostering their rapport with the clients, government, community, regulatory authorities and other stakeholder (Williams & Pei, 1999), reducing asymmetry information between the managers of the company and their stakeholders (Jizi et al., 2014) and legitimating firm activities for improved economic outcomes (Deegan, 2002).

Board of directors (BoDs) is an important aspect of corporate governance (CG) that addresses the conflict of interest between the managers and stakeholders (Harjoto et al., 2015). Firm's CSR policy is the fundamental duty of the BoDs (Krüger, 2009). Among the very many components of BoDs that are crucial in addressing the agency crisis between managers and stakeholders, BGD stands unique. The role of BGD in improving firm outcomes has attracted series of attention within the academic and professional milieu (Nguyen et al., 2020; Perryman et al., 2016; Sanyaolu et al., 2022). This attention has been awakened and sustained by the perceived role of female directors on business decisions such as compliance, governance, risk-taking and relationship with stakeholders (Greene et al., 2020).

Different agency, behavioural, economic, governance, psychological and social-based theories have argued that boardroom homogeneity can lead to sub-optimal decision-making, which can have a negative consequence on governance and performance (Nguyen et al., 2020). The issue of

women underrepresentation is even of particular relevance in most African countries, such as Nigeria where women representation at the top-echelon decision-making level is minimized, and their responsibility in the society is limited to domestic chores such as child bearing, child rearing, home upkeep and many other domestic responsibilities. This menace in the argument of Chijoke-Mgbame et al. (2020) is due to the ambiguous cultural belief that sees women as having a supportive role to men in the society.

In order to address women underrepresentation at the corporate level, the past few decades have witnessed an increased clamour for more women representation, particularly following the collapse and failure of world most reckoned with entities and the global financial crisis. These collapses were significantly brought in connection to poor CG practice arising from low boardroom homogeneity manifesting in the form of low diversity, lack of independence and transparency (e.g., Elmagrhi et al., 2019, 2020). Arising from this, some countries of the world such as Norway, Iceland, Germany, France, Denmark and Malaysia have stipulated gender quota in corporate organizational level in order to improve boardroom gender diversity (Baker et al., 2019).

Flowing from the foregoing, it is apparent that BGD has implication on firm financial and non-financial performance such as CSR endeavour. Empirical findings in the literature have shown that women have high inclination towards charitable and benevolent activities; thus, they can facilitate the accomplishment of CSR and firm outcomes (Baker et al., 2019; Conyon & He, 2017). Drawing on the social role theory, men are perceived as being personally oriented by exhibiting traits such as aggressiveness, ambitiousness, strength and dominance, while women are perceived as being publicly oriented by exhibiting traits such as love, help, concerns about others well-being (Eagly & Johannesen-Schmidt, 2001).

There is no gainsaying in the fact that many studies have been carried out on BGD-firm outcome nexus. However, very many of them focused on BGD and financial performance (Chijoke-Mgbame et al., 2020; Kajola et al., 2019; Oyedokun, 2019). Some studies have focused on BGD and CSR (Ajaz et al., 2020; Al Fadli et al., 2019; Kazempour et al., 2018) in other climes. Studies in the Nigerian contexts on BGD and CSR have majorly concentrated on the some subsection of non-financial sectors (Issa et al., 2020; Musa et al., 2022). Besides the fact that these study did not focus on the banking sector, it was also observed that they have investigated the nexus between BGD and CSR from static perspective by adopting ordinary least square, fixed and random effects as analytical tools. However, there are few studies that have been conducted in the banking sector such as those by Igbekoyi et al. (2021) and Ozordi et al. (2020). The major gaps observed in the work of Igbekoyi et al. (2021) are that it only focused on 10 banks without considering the fact that there is existence of micro-numerousity of data that would have warranted the appropriateness of census sample. Also, the data for the study were not recent to reflect the current development in BGD and CSR. Its failure to include other BoDs and firm-level variables that can also influence CSR is yet one of the shortcomings of the work. In regard of the investigation by Ozordi et al. (2020), its major shortcomings are that it also concentrated on only 10 listed DMBs and the fact that the study proxy the dependent variable with sustainability reporting rather than CSR.

Arising from the identified gaps in the literature, this study contributes to the literature in many ways; first, it concentrates on the banking sector, which is one of the most important sectors in Nigeria. The fundamental role played by the sector requires it to be well governed so as to position it well for performing its role of financial intermediation. Thus, investigation on BGD, which is an integral part of CG mechanism for monitoring and checkmating the excesses of the appointed directors, and how it affects CSR, which has become an integral part of firm surviving strategy in the ever dynamic environment, meets scholarly attention. Second, the fact that there is a dearth of empirical investigation in the Nigerian banking sector is another contribution of this study to the literature. Third, this study contributes to the literature by using dynamic data analysis technique involving the estimation of generalized method of moment, which is efficient in addressing the issue of endogeneity inherent in CG research. This technique had not been used by studies

conducted on Nigerian banks. Fourth, the study contributes to the literature by using recent data that reflect the recent development in BGD and CSR differently from studies conducted by Igbokoyi et al. (2020) and Ozordi et al. (2020), which used old data. Fifth, in order to ensure data amplexness and make generalization of findings reliable, the study used 12 out of the 13 listed DMBs. The inability to use the entire 13 banks is because Eco-Bank, which is one of the population did not disclose consistent information for the refecned periods.

The main and specific objective of this study is therefore to examine the effect of BGD on CSR of listed DMBs in Nigeria. The question this study seeks to answer is “what is the effect of BGD on CSR of listed DMBs in Nigeria?” The remaining parts of the work are structured as follows: section 2 focuses on the background. Theoretical framework forms the basis of section 3, while empirical review and hypothesis development were done in section 4. Section 5 addresses the issue of research design adopted. Section 6 focuses on discussion of findings, while conclusion, recommendation and suggestions for future research form the basis of section 7.

2. Background

BGD and CSR are becoming important issues in today's business world. The interest in these branches of knowledge is due to social, economic and environmental challenges that manifest in the form of high rate of poverty, poor standard of living, high gender inequality and high environmental impact of firm operation on the society to mention but few. In order to address this menace, there had global been mandatory and voluntary intervention of regulators, policy-makers, shareholders and other stakeholders on BGD and CSR issues. For instance, Norway introduced a mandatory benchmark of 40% women representation on corporate board and voluntary 25% women representation in the UK. The issue of CSR endeavour has also been mandated by some other countries of the world such as Malaysia, Germany and Iceland, while it is voluntary but encouraged in some countries, Nigeria inclusive. This development points to the fact that the issues of BGD and CSR are gradually becoming of significant relevance in the society.

The Nigerian banking sector is dominated by DMBs arising from the significant contributions they make to the social, environmental and economic sectors of Nigeria. Flowing from this, the sector must be well governed. BGD and CSR are therefore an encouraged endeavours in the Nigerian banking sector for effective and efficient governance that is tailored towards achieving business. From the regulatory perspective, the Financial Reporting Council of Nigeria in November 2022 proclaimed its interest in adopting the International Sustainability Reporting Standards (ISRS) of International Sustainability Standard Board (ISSB) when issued in 2023. The standards is aimed at globalizing sustainability reporting practices, of which BGD and CSR are parts of the cardinal issues emphasised in sustainability reporting.

Therefore, the investigation of the effect of BGD on CSR in Nigerian banks is worthwhile for considerable number of reasons. First, the banks are parts of the companies that are under the regulation and scrutiny of the Financial Reporting Council of Nigeria; thus, they must adopt the ISRS which centres on sustainability including BGD and CSR. Second, most Nigerian banks operate in other advanced countries of the world where gender equality and women representation are mandatory endeavours. Thus, this study in addressing the identified gaps advanced the literature in so many ways. First, it concentrates on Nigeria where the issue of BGD is still at the rudimentary level, cupped with the high level of social inequality that deprives women equal opportunities to education, access to financial resources and involvement and participation in social and economic endeavors. These inequalities have relegated the role of women in society to mere home chores such as child bearing and rearing, cooking, washing and so on. Thus, these inequalities deprive them from having equal opportunities, capability, competence and wherewithal to contribute meaningfully to social, economic and political issues compared to their male counterparts. Going by these factors, and worsened by the weak legal and institutional framework regarding women participation at the social, economic and political levels, most of these women, asides their home responsibility, features more in the informal sectors of the economy

where they are not afforded sufficient fortunes as compared to their male counterparts who dominate the formal sectors. All these pooled together hinder women chances of involving and participating in corporate BoDs. Second, the banking sector of Nigeria is the major bedrock of the economy as it serves as the main agent of fund mobilization in the economy. Thus, strong legal, institutional and CG structure is important in order for the sector to efficiently discharge this role of fund mobilization (Sanyaolu et al., 2022).

Thus, the presence of female on the board can act as an effective controlling and monitoring mechanisms for improving CG practices so as to improve banks' CSR and FP. Thus, the investigation of the effect of BGD and CSR meets the scholarly attention for the above highlighted number of reasons.

3. Theoretical literature review

Many theories are relevant in explaining the nexus between BGD and CSR. Prominent among these theories are stakeholders' theory, legitimacy theory and gender socialization theory. Stakeholder theory is a theory that advances the shortcomings of the agency theory which only sees the appointed managers as being accountable to only the shareholders. The stakeholder theory views an organization as having responsibility on the wider stakeholder groups who affects and are affected by the organization. The theory is based on the philosophy that an organization depends on its stakeholders such as employees, customers, investors, local communities, public bodies, NGOs, etc., and the stakeholders also depend on the organisations (Freeman, 1984). Due to this interaction, firm has to consider these stakeholders in their strategic decision-making, by including in their strategies the policies that will satisfy the interest of these stakeholders' group so as to win their supports in attaining its long-term success and sustainability as they are affected by the interaction with the stakeholders (Castelo Branco & Lima Rodrigues, 2007). Thus, firm must have good interaction with the stakeholders in order to achieve its long-term goals and sustainability. One way of achieving this is through philanthropic activities and gifts to the host society. According to Roberts (1992), CSR activities are used by firm to demonstrate their social performance and also used to maintain a good relationship with the stakeholders in order to be sustainable in their activities.

The nexus between BGD and CSR can also be explained by legitimacy theory. This theory states that companies may engage in CSR in order to legitimate their activities so as to improve their public image and boost their relationship with their stakeholders. They do this by ensuring that their activities are in consonance with societal norms. Engaging in CSR is a way of tailoring firm's activities towards societal norms in order to improve firm corporate image and garner more support from the public. Women directors have been seen as a mechanism for facilitating this legitimacy (Majeed et al., 2015) by serving as an alert to CSR activities due to their sensitivity to community matters (Muttakin et al., 2015). Thus, women on the BoDs could prompt firm engagement in CSR in order to meet up with societal expectations.

Another pertinent theory that explains the nexus between BGD and CSR endeavour is "gender socialisation theory". The theory emphasizes the differences in the way men and women act and attribute this difference to divergent interest and traits which emanate from their social interactions (Liu, 2018; Nadeem et al., 2020). These differences in interest and traits can go a long way in determining how men and women behavior at the corporate level. Thus, female directors on the board will differ in decision-making and courses of action with men. According to Adams and Funk (2012), women in the boardroom are perceived to exhibit traits of universalism and benevolence by championing and supporting courses of action that promotes the welfare of all people and nature. Thus, women have been argued to be more sensitive to environmental and CSR issues (Zahid et al., 2020).

4. Empirical literature review and hypothesis development

4.1. Empirical review

Gaio and Gonçalves (2022) using a sample of 268 firms from 11 countries in Europe comprising 9 industries and subjecting the data to a regression analysis. BGD has a positive and significant

effect on CSR. The major concern of this study is the fact that the gender practices of the referenced countries differ significantly from that of Nigeria. For instance, women representation and participation at the corporate, social, and political strata is a compulsory legal endeavour as opposed to Nigeria where the role of women is restricted to domestic chores. Also, women participation and representation in the above-referenced strata is a mere appearance as women are not given equal opportunities as their male counterparts. Thus, the above-mentioned facts indicate that findings in Europe cannot be transferred to Nigeria. Issa and Fang (2019) in Arab Gulf countries investigated the nexus between BGD and CSR by aggregating data of 244 non-financial listed firms in six countries in Arab Gulf from 2012 to 2014. BGD was found to have a positive and significant effect on CSR disclosure. The institutional and legal environments, particularly those relating to gender issue in Arab, significantly differ from that of Nigeria. For instance, issues bothering on women representation and participation in the society are guided by Islamic religious etiquette which, in an attempt to protect women, discourages them from partaking in some difficult social, political and economic endeavours. On the other hand, the issue of women participation and representation in Nigeria is determined and restricted by cultural belief which perceives women in the society as a less important compared to male. In Jordan, Al Fadli et al. (2019) analysed the effect of BGD on CSR reporting by obtaining data ranging from 2006 to 2015 for 80 selected non-financial companies. BGD was found to have a significant positive effect on CSR reporting. Yasser et al. (2017) investigated the nexus between BGD and CSR in Malaysia, Pakistan, and Thailand. BGD has a significant effect on CSR. In Iran, Kazempour et al. (2018) using data of 110 listed companies in Tehran for data set ranging from 2012 to 2017 and using regression analysis as an analytical technique. The finding shows that BGD and CSR have a significant effect on each other. Ajaz et al. (2020) using data of selected 100 firms in Pakistan ranging from 2010 to 2015 found a significant negative effect of BGD on CSR. Institutional environments in these clans are also different from that of Nigeria. Musa et al. (2022) analysed the nexus between BGD and CSR in the listed manufacturing firms in Nigeria using data spanning from 2010 and 2019. BGD was found to positively and significantly affect CSR. Boukattaya and Omri (2021), using data of non-financial French firms spanning from 2011 to 2016, found that BGD has a significant positive effect on CSR, while it has a negative effect on corporate social irresponsibility. In Italy, Harjoto and Laksmana (2018), utilizing the data of 156 Italian firms for data spanning from 2002 to 2014 and adopting GMM estimation techniques, show that BGD has a positive significant effect on CSR.

Aside from these studies conducted in other climes, some studies have also been conducted in Nigeria (Issa et al., 2020). The major gaps observed in these studies are that they were conducted outside the banking sector, and they analysed the data using static approach such as ordinary least square, fixed effect and random effect. For instance, Issa et al. (2020) investigated the effect of BoDs' diversity on CSR of the listed oil and gas companies in Nigeria by sampling eight oil and gas companies listed on the Nigeria Exchange Group and obtaining data spanning from 2012 to 2018. The result of the panel-corrected standard error reveals among others that BGD has a significant positive effect on CSR. The major gap observed in this work is its focus on the oil and gas sector. Musa et al. (2020) analysed the effect of BGD on CSR of the listed manufacturing firms in Nigeria using data spanning from 2010 to 2019. The fixed effect regression analysis documents that BGD has a significant positive effect on CSR of the listed DMBs. The studies suffer some limitations, including the use of static regression analysis, the study was conducted outside the banking sector, and the fact that it fails to include some other BoD variables that have implication for CSR.

Few studies have however been conducted in the banking sector. Such studies include those by Igbekoyi et al. (2021) and Ozordi et al. (2020). For instance, Igbekoyi et al. (2021), using feasible generalized least square on data of 10 banks purposively selected ranging from 2010 to 2018, found female directors on corporate social performance of the listed DMBs in Nigeria. The result of the FGLS reveals that female composition, female board expertise and female board independence have a significant positive effect on CSR. The major gap observed in this work is that it only focused on 10 banks when there is micro-numerosity of data. The appropriate sample should have been

the total population in order to avoid sampling risk. Also, the years under consideration are considered too old to reflect the current development in BGD and CSR. The study did not also consider other BoDs and firm-level variables that can also influence CSR. Ozordi et al. (2020) investigated the effect of BGD on sustainability responsiveness of the listed DMBs in Nigeria by using data of 10 banks spanning from 2013 to 2016 and subjecting the obtained data to regression analysis. The study found that BGD has no significant effect on sustainability reporting. The major gap observed in the work is the use of static regression analysis and the fact that it considers the effect of BGD on sustainability reporting rather than CSR.

4.2. Hypothesis development

The nexus between BGD and CSR is well documented in empirical and theoretical literature (Al Fadli et al., 2019; Igbekoyi et al., 2021; Issa & Fang, 2019; Issa et al., 2020; Kazempour et al., 2018; Ozordi et al., 2020). Most of the existing authors have demonstrated a significant effect of BGD on CSR (Al Fadli et al., 2019; Igbekoyi et al., 2021; Issa & Fang, 2019; Issa et al., 2020; Kazempour et al., 2018). The argument in support of this positive and significant nexus had earlier been put forward by Muttakin et al. (2015) that female directors are seen as an alert to CSR activities as they are regarded as being more sensitive to community matters; thus, women on the BoDs could prompt firm engagement in CSR in order to meet up with societal expectations as women participation on the board is argued to attract broader experience and knowledge, which improves the quality of decision-making (Barako & Brown, 2008). Also, women are perceived to support charitable and philanthropic endeavors (Angelidis & Ibrahim, 2011). According to the social and ethical views, increased female representation would achieve greater just and fair society (Brammer et al., 2007). Rose (2007) and Sealy (2010) also argue that BGD, besides adding legitimacy, also project positive image and reputation of a firm which are crucial for long-term success. Thus, it can be concluded that women representation on the board would lead to good deliberation in favour of firm commitment to CSR which will in turn balance the interest of wider stakeholders' group.

Prior literatures have argued that BGD is a CG variable which increases board control, decision-making, and building good relationship with the stakeholders' group including society (Carter et al., 2003; Ellis & Keys, 2003). Thus, from a theoretical perspective, the gender socialization theory has also argued that women have high inclination to support charitable and philanthropic endeavour than men arising from the fact that they exhibit traits such as universalism and benevolence by championing and supporting courses of action that promote the welfare of all people and nature (Adams & Funk, 2012). The study therefore hypothesises in the alternate form that:

H1: BGD has a significant effect on CSR of listed DMBs.

5. Research design

Due to the secondary nature of this study, an *ex post facto* research design is adopted. This research design is appropriate when data for a study relate to the past events that the researcher has no control over. Researchers such as Igbekoyi et al. (2021), Musa et al. (2022), Ozordi et al. (2020) and Sanyaolu et al. (2022) have all adopted this research design in their prior works.

5.1. Population of the study

The population of the study is the entire listed DMBs in Nigeria Exchange Group. As at 2022, there are 13 listed DMBs in Nigeria.

5.2. Sample and sampling technique

Due to the fact that there is micro-numerosity of data arising from small population size, this study proposes a census sample. This technique implies that the entire population will be selected as the sample. However, due to the fact that a particular bank "Eco Bank" fails to present relevant

information, which prevents the extraction of consistent and relevant data, the study is eventually chooses 12 banks as the sample size by using purposive sampling technique. The sampled banks correspond to almost 92% of the population which is a good representation of the entire population.

5.3. Source of data

The data of the 12 sampled banks were gotten from their financial statements from 2012 to 2021.

5.4. Method of data analysis

The study conducts both descriptive and inferential statistics to analyse the data. The descriptive statistics comprises the descriptive analysis and correlation analysis. On the other hand, the inferential comprises regression analysis involving fixed and random effects and GMM. Hausman (1978) conducted a study to select the appropriate model between the fixed and random effects (Table 1).

5.5. Data collection

Out of the listed DMBs in Nigeria, only 12 that presented relevant and consistent data for the referenced periods were selected.

5.6. Variable description

CSR is the dependent variable of the study. It is measured as the ratio of CSR spending over the total net profit before tax. BDG is the explanatory variable, while board size, board meeting, liquidity ratio, capital adequacy ratio, bank age and natural logarithm of profit before tax are the control variables of the study.

The study includes board size as a control variable of the study as optimum board size, as argued by Jensen and Meckling (1976), can serve as an effective tool for reducing agency problem which will in turn improve firm performance such as those relating to economic and social performance. This presupposes that having board size that is neither too small nor too much will improve firm performance by reducing agency crisis and facilitating effective and efficient decision-making. Thus, the inclusion of board size as a control variable is justified. As to board meeting, this study argues that the number of meeting held by the board is an indication of how diligent and committed the board is in ensuring that the goals and objectives of the organization are achieved. Holding regular meetings could provide an avenue for discussing and deliberating on organization's goals and objectives and the strategies of achieving these goals and objectives. As argued by Eluyela et al. (2018) and Sanyaolu et al. (2020), board must meet regularly in order to improve the quality of decision-making that are central to the actualization of firms' financial objectives. Besides the attainment of firm financial and economic objective which forms the basis of board activities, social performance is also one of the prominent issues to be discussed at the board meeting arising from its implication on firm performance. Therefore, board that meets regularly stands a better chance of improving their commitment to CSR endeavor. Liquidity is an important variable that can also have serious implication for firm corporate social performance. Since most of the CSR endeavour undertaken by firms and banks inclusive are done in monetary terms, banks must be liquid so as to have the cash resources in fulfilling this endeavor. Thus, the inclusion of liquidity ratio as a control variable is justified. Capital adequacy is also an important construct in determining firms' commitment to CSR. Banks that use more of equity capital may be less committed to CSR as this may represent a transfer of profit that will reduce retained earnings. Thus, it is expected that capital adequacy will have a negative effect on CSR endeavour. With respect to bank age, older banks, due to their experience, are able to identify the essential resources that are needed for their survival and for maintaining their reputation through social actions (Baccouche et al., 2010). Profitability matters significantly in determining firms' engagement and the extent of CSR. Profitable companies, in an attempt to improve future profit, might invest in CSR activities as a legitimating tool in improving their reputations (Legendre & Coderre, 2013). Also, since most CSR endeavours involve expending some certain amount of money,

profitable banks may have this money resources in engaging such endeavour. Thus, a positive and significant effect of profitability and CSR is expected.

5.7. Model specification

The model of the study is as stated below:

$$CSR_{it} = \beta_0 + \beta_1LagCSR + \beta_2BGD_{it} + \beta_2_{it} + \beta_3BS + \beta_4BM_{it} + \beta_5LDR_{it} + \beta_6LAGE_t + \beta_7LPBT_{it} + \beta_8CAR_{it} + e_{it}$$

where

Lag CSR_{it} = previous year of corporate social responsibility of bank *i* in period *t*

BGD_{it} = board gender diversity

BS_{it} = board size of bank

BM_{it} = board meeting

LDR_{it} = loan to deposit ratio, a surrogate for liquidity

LPBT_{it} = natural logarithm of profit before tax

LAGE_{it} = natural logarithm of bank age

CAR_{it} = capital adequacy ratio

e_{it} = stochastic error term

6. Empirical result and discussion

This table 2 shows the statistical attributes of the variables of the study.

CSR has a mean of 1.6% and ranges from 0.000 to 0.001. This shows that the rate of commitment is abysmally low compared to banks' total net profit before tax. The standard deviation, which is not too far from the mean, implies that the datum is normally distributed. The kurtosis value which is above 3 shows that there is an outlier. BGD is averaged 23.4% and ranges from 0.00 to 0.454; the wide margin between the standard deviation and the mean means that there is a wide dispersion of the variable from the mean. The kurtosis value which is below 3 indicates that there is no outlier in the variable. Board size is averaged 13.3 and ranges from 6 to 20. The higher disparity between the mean and the standard deviation indicates that there is a wide variation from the mean. The kurtosis shows that there is absence of outlier. Board meeting is averaged 6.3 and ranges from 1 to 16. The wide gap between the man and the standard deviation indicates that there is a large variation from the mean value. The kurtosis, which is more than 3, indicates that there is possibility of an outlier in the variable. Loan to deposit ratio is averaged 0.64 and ranges from 0.35 to 1.25. The significant difference between the mean and the standard deviation shows that there is large dispersion from the mean. The kurtosis value shows that the variable is leptokurtic, indicating a larger than normal distribution. The log inverse of age is averaged 3.7 and ranges from 1.61 to 4.86. The larger difference between the mean and the standard deviation indicates that there is high dispersion from the mean. The kurtosis value also shows larger than normal distribution. Natural logarithm of profit before tax is averaged 17. 2 and ranges from 14.9 to 19.4. The larger difference between the mean and the standard deviation indicates that there is high dispersion from the mean. The kurtosis value shows normal than larger distribution, indicating the absence of an outlier. Capital adequacy ratio is averaged 16 and ranges from -1.547 to 0.9. The larger difference between the mean and the standard deviation indicates that there is high dispersion from the mean. The kurtosis value also shows larger than normal distribution

The table 3 above shows the absence of multicollinearity since none of the variables has a correlation coefficient in the neighborhood of 82% as suggested by Gujarati (2003). The result of the variance inflation factor presented in the correlation matrix above shows that the mean of the IVF of 1.414 is far below the threshold of 5.0, which according to Baltagi (2011) is the benchmark. Also, none of the individual variables has a coefficient that is up to 1, which is the benchmark. This means that none of the variable has suffered redundancy; thus, confirming the result of correlation analysis that there is absence of multicollinearity.

6.1. Regression analysis

The regression analysis for BGD and CSR is shown in Table 4.

The Hausman result indicates that fixed effect is appropriate in drawing inferences. The adjusted R^2 of 0.178 means that almost 18% variation in CSR is accounted for by the explanatory variables. The F -statistics of 4.579 (0.00) implies that the model as a whole is fit. The Durbin-Watson statistics of 2.044756 means that there is absence of autocorrelation as it is more than the threshold of 2. The result indicates that the previous year CSR has a spontaneous effect on the current year CSR, given the probability value which is significant at 1%. The implication of this is that most of the banks under reference do increase their CSR spending over time. BGD is found to have no significant positive effect on CSR. This implies that the female directors on the board may be so minute to the entire board members, thus making their voice and opinion not to be heard on the board. Also, the female directors may just be a stereotype, appointed to the board for mere presence, without be given the opportunity of contributing immensely to firm policy and strategies such as on charitable and philanthropist endeavor. The result of the finding is in tandem with that of Gaio and Gonçalves (2022), Issa and Fang (2019), Kazempour et al. (2018) and Musa et al. (2022), which found no significant positive effect of BGD on CSR (Table 5).

Navigating to the control variables, BS does not significantly affect CSR in Nigerian listed DMBs. The result of the finding is not in tandem with that of Musa et al. (2022) that found positive and significant effect of BS on CSR. BM has a positive but no significant effect on CSRI of listed DMBs in Nigeria. This implies that larger board may not be efficient in making quick and unique decision as more time may be needed in reaching a comprise on a particular issue that are capable of promoting firm image such as CSR activity. BM has a positive but no significant effect on CSR of listed DMBs in Nigeria. This implies that too much meeting frequency may be a mere waste or organisation resources and time that would have been channeled to beneficial endeavour such as

Table 1. Name of the listed deposit money banks

S/N	Bank
1	First Bank of Nigeria
2	Access Bank
3	Zenith Bank
4	United Bank for Africa
5	Guaranty Trust Bank
6	Union Bank
7	Unity Bank
8	First City Monument Bank
9	Wema Bank
10	Fidelity Bank
11	Sterling
12	Stanbic IBTC
13	Eco Bank of Nigeria

Source: Extracted from the Nigerian Exchange Group, 2023.

Table 2. Name of the selected listed deposit money banks

S/N	Bank
1	First Bank of Nigeria
2	Access Bank
3	Zenith Bank
4	United Bank for Africa
5	Guaranty Trust Bank
6	Union Bank
7	Unity Bank
8	First City Monument Bank
9	Wema Bnak
10	Fidelity Bank
11	Sterling
12	Stanbic IBTC

Source: Extracted from the Nigerian Exchange Group, 2023.

Table 3. Description of variables

Variable	Abbreviation	Measurement	Source
Corporate social responsibility	CSRI	Corporate social responsibility spending/ net profit before tax	Gaio and Gonçalves (2022); Issa and Fang (2019); Al Fadli et al. (2019)
Board gender diversity	BGD	Women directors/total board size	Sanyaolu et al. (2022); Sanyaolu et al. (2021)
Board size	BS	Total number of directors on the board	Nadeem et al. (2017) ; Sanyaolu et al. (2022).
Board meeting	BM	Number of meetings held by board of directors in a year	Eluyela et al. (2018); Sanyaolu et al. (2020).
Liquidity	LDR	Proportion of loan to total deposit	Sanyaolu et al. (2019); Kajola et al. (2019) ; Kajola et al. (2021).
AGE	LAGE	Natural logarithm of bank age since incorporation to date	Kajola et al. (2021); Sanyaolu et al. (2019).
Profitability	LPBT	Natural logarithm of profit before tax	Ilaboya and Ohiokha (2016).
Capital adequacy ratio	CAR	Equity/total asset	Sanyaolu et al. (2019); Sanyaolu et al. (2020); Sanyaolu et al. (2020); Kajola et al. (2021).

Source: Researchers' compilation, 2023.

CSR activity. Liquidity ratio was also found to have a positive but no significant effect on CSR. This implies that the zeal of bank to remain liquid so as to be able to meet up with the withdrawal demand of the depositors may make them to be less committed to CSR endeavor as it may be considered as an activity that is capable of transferring bank's financial resources that would have been used to build their liquidity position. Age has a significant positive effect on CSR. This indicates that older banks are more committed to CSR spending in order to portray good public image and win the legitimacy of major stakeholders. This finding is in line with that of Al Fadli et al. (2019) that reported a significant positive effect of age on CSR. On the other hand, profitability has a significant but negative effect on CSR. This implies that profitable banks may be less committed

Table 4. Descriptive statistics

	CSR	BG	BS	BM	LDR	LAGE	LPBT	CAR
Mean	0.016	0.234	13.283	6.300	8.079	3.717	17.537	8.910
Median	0.009	0.250	14.000	6.000	0.642	3.526	17.742	0.134
Maximum	0.201	0.455	20.000	16.000	767.515	4.860	20.785	356.368
Minimum	-0.005	0.000	6.000	1.000	0.036	1.609	14.482	-1.547
Std. Dev.	0.024	0.106	2.974	2.469	70.286	0.706	1.462	38.458
Skewness	4.821	-0.626	0.0387	1.177	10.734	-0.430	-0.011	6.768
Kurtosis	34.574	2.916	2.352	5.010	116.487	3.187	2.436	57.691
Jarque-Bera	5,449.254	7.880	2.130	47.904	66,144.71	3.882	1.546	15,871.55
Probability	0.000	0.019	0.345	0.000	0.000	0.144	0.462	0.000
Sum	1.885	28.098	1,594.000	756.000	961.451	445.990	2,034.346	1,069.165
Sum Sq. Dev.	0.069	1.328	1,052.367	725.200	582,931.7	59.332	245.686	176,004.9
Observations	120	120	120	120	120	120	116	120

Researchers' computation, 2023 using E-views 9

Table 5. Correlation analysis

	CSR	BG	BS	BM	LDR	LAGE	LPBT	CAR	VIF	1/V
CSR	1.000									
BG	0.212	1.000							1.263	.792
BS	-0.070	-0.100	1.000						1.224	.817
BM	0.001	-0.084	0.298	1.000					1.111	.900
LDR	-0.073	-0.149	-0.053	-0.051	1.000				1.138	.879
LAGE	0.057	-0.0120	0.364	0.159	-0.026	1.000			1.141	.877
LPBT	-0.376	-0.299	-0.010	-0.088	0.200	-0.159	1.000		2.139	.468
CAR	-0.150	-0.339	-0.212	-0.089	0.270	-0.055	0.406	1.000	1.881	.532
Mean									1.414	

Researchers' computation, 2023 using E-views 9

Table 6. Result of the fixed-effect regression

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.227	0.106	-2.132	0.036
CSR(-1)	0.398	0.147	2.716	0.008
BG	0.013	0.031	0.423	0.673
BS	0.000	0.001	0.285	0.776
BM	0.002	0.001	1.454	0.150
LDR	-1.500	2.740	-0.055	0.956
LAGE	0.106	0.023	4.668	0.000
LPBT	-0.010	0.004	-2.929	0.004
CAR	1.460	7.230	0.2017	0.841

Adjusted R-squared 0.178

F-statistic 4.579 Prob (F-statistic) 0.000

Durbin-Watson stat = 2.045

Hausman test: 0.000

Researchers' computation, 2023 using E-views 9

to CSR endeavour arising from the fact that they may see no reason for investing in CSR in order to make profit as they are already profitable. Another factor that may reduce bank's endeavour to CSR is that it may be termed as a mere diversion of their resources that would have been used in financing growth opportunities to CSR endeavour. This finding contradicts with that of Febrina and Setiany (2020), which found a significant positive effect of profitability on CSR. The implication for the positive but highly insignificant effect of capital adequacy on CSR implies that their availability of capital or otherwise does not influence bank's decision on commitment to CSR endeavour (Table 6).

In order to confirm the stability of the initial proxy for BGD, the study advanced further by using an alternative proxy "gender representation" following the critical mass approach that the presence of at least three directors on the board is a voice that would enhance the performance of the female director in contributing to firm performance. The result above shows that the model is consistent with the initial fixed-effect regression analysis conducted using the proportion of female directors to the total directors on the board (Table 7).

Table 8 shows the effect of BGD on CSR using the generalized method of moment. Due to the heterogeneity issue that is inherent in CG research, this study advances further by conducting

Table 7. Alternative measure for BGD

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.225	0.108	-2.086	0.040
CSR(-1)	0.404	0.146	2.764	0.007
GR	0.001	0.007	0.185	0.854
BS	0.000	0.001	0.134	0.894
BM	0.002	0.001	1.437	0.155
LDR	-1.100	2.750	-0.040	0.968
LAGE	0.106	0.024	4.489	0.000
LPBT	-0.010	0.004	-2.870	0.005
CAR	1.130	7.190	0.157	0.876
Adjusted R-squared 0.397				
F-statistic 4.563 Prob (F-statistic) 0.000				
Durbin-Watson stat = 2.046				
Hausman test: 0.000				
Researchers' computation, 2023 using E-views 9				

a difference GMM. The GMM is an effective tool in eliminating this possible homogeneity. As argued by Chapple and Humphrey (2014) and Chijoke-Mgbame et al.,(2020), women may be interested in or self-select to high-performing firms or high-performing firms may be more oriented towards appointing female directors as a way of satisfying their stakeholders and legitimating their activities. This lack of clarity as to the main driver of women presence and participation on the board is a common source of endogeneity influencing board attributes and firm financial and social performance (Adams & Ferreira, 2009). Thus, some unobservable factors that could affect both BGD and CSR simultaneously could exist (Chijoke-Mgbame et al, 2020).

The result indicates that the previous year CSR has a spontaneous effect on the current year CSR, given the probability value which is significant at all levels of significance. The implication of this is that most of the banks under reference do increase their CSR spending over time. With respect to the independent variable, BGD has a positive but no significant effect on CSR. The coefficient implies that a percentage increase in BGD will suggest almost 14.6% increase in CSR. The

Table 8. Result of difference GMM for BGD and CSR

Variables	Coefficient	Std. Error	t-Statistic	Prob.
CSRP(-1)	0.158	0.056	2.809	0.006
BG	0.146	0.115	1.269	0.208
BS	0.004	0.003	1.597	0.114
BM	1.870	0.004	0.004	0.997
LDR	0.001	0.002	0.592	0.556
LAGE	0.126	0.035	3.555	0.001
LPBT	-0.012	0.004	-3.095	0.003
CAR	0.000	0.004	0.111	0.912
Mean dependent var 0.001547				
S.E. of regression 0.150157				
J-statistic = 3.231275				
Prob (J-statistic): 0.519894				
Instrument rank 12				
Researchers' computation, 2023 using E-views 9				

Table 9. Alternative measurement for BGD

Variables	Coefficient	Std. Error	t-Statistic	Prob.
CSRP(-1)	0.235	0.029	8.011	0.000
GR	-0.001	0.015	-0.036	0.972
BS	0.001	0.002	1.795	0.076
BM	0.001	0.003	0.179	0.858
LDR	0.002	0.003	0.766	0.446
LAGE	0.133	0.049	2.721	0.008
LPBT	-0.014	0.003	-4.220	0.000
CAR	-0.001	0.002	-0.247	0.805
Mean dependent var 0.001547				
S.E. of regression 0.250401				
J-statistic = 2.724929				
Prob (J-statistic): 0.519894				
Instrument rank 12				
Researchers' computation, 2023 using E-views 9				

Table 10. Arellano-Bond serial correlation test

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	-1.178019	-0.020720	0.017589	0.2388
AR(2)	-1.380668	-0.066886	0.048445	0.1674
Researchers' computation, 2023 using E-views 9				

implication of this finding is that the presence of female directors on the board does not affect firm CSR. This could arise from the fact that the female directors on the board may be so minute to the entire board members which makes their voice and opinion not to be heard on the board. Also, the female directors may just be a stereotype appointed to the board for mere presence without being given the opportunity of contributing immensely to firms policy and strategies such as on charitable and philanthropist endeavor. The result of the finding is in tandem with that of Gaio and Gonçalves (2022), Issa and Fang (2019), Kazempour et al. (2018) and Musa et al. (2022) that found no significant positive effect of BGD on CSR. The result of this finding does not provide support for legitimacy theory that BGD can be a legitimating tool for firms to maintain a good relationship with its stakeholders. Thus, the study fails to reject the null hypothesis that BGD has no significant effect on CSR of the listed DMBs in Nigeria (Table 9).

Navigating to the control variables, BS does not significantly affect CSR in Nigerian listed DMBs. This implies that larger board may not be efficient in making quick and unique decision as more time may be needed in reaching a comprise on a particular issue that are capable of promoting firm image such as CSR activity. The result of the finding is not in tandem with that of Musa et al. (2022) that found a positive and significant effect of BS on CSR. BM has a no significant positive effect on CSR of listed DMBs in Nigeria. This implies that too much meeting frequency may be a mere waste or organization resources and time that would have been channeled to beneficial endeavour such as CSR activity. Liquidity ratio was also found to have a positive but no significant effect on CSR. This implies that the zeal of bank to remain liquid so as to be able to honour the withdrawal demand of the depositors may make them to be less committed to CSR endeavor as it may be considered as an activity that is capable of transferring bank's financial resources that would have been used to build their liquidity position. Age has a significant positive effect on CSR.

This indicates that older banks are more committed to CSR spending in order to portray good public image and win the legitimacy of major stakeholders. This finding is in line with that of Al Fadli et al. (2019) that reported a significant positive effect of age on CSR. On the other hand, profitability has a significant but negative effect on CSR. This implies that profitable banks may be less committed to CSR endeavour arising from the fact that they may see no reason for investing in CSR in order to make profit as they are already profitable. Another factor that may reduce bank's endeavour to CSR is that it may be termed as a mere diversion of their resources that would have been used in financing growth opportunities to CSR endeavour. This finding contradicts with that of Febrina and Setiany (2020) that found a significant positive effect of profitability on CSR. The implication of the positive but highly insignificant effect of capital adequacy on CSR implies that the availability of capital or otherwise does not influence bank's decision on commitment to CSR endeavour (Table 10).

In order to confirm the stability of the initial proxy for BGD, the study advanced further by using an alternative proxy "gender representation" following the critical mass approach that the presence of at least three directors on the board is a voice that would enhance the performance of the female director in contributing to firm performance. The result above shows that the model is similar to the initial difference GMM except for the fact that the alternative proxy for BGD has a negative coefficient as against the positive which the initial proxy had. However, this does not call for concern as the proxy is significantly insignificant on CSR.

6.2. Post estimation test

The result of the Arellano-Bond serial correlation test above shows that there is no problem of serial correlation as the probability of AR(2) is not significant. Thus, our model is stable.

7. Conclusion, recommendations and suggestions for future studies

7.1. Conclusion

This study investigated the effect of BGD on CSR of 12 listed DMBs in Nigeria. BGD is found to have no significant positive effect on CSR. The study provided a novel dimension to BGD and CSR relationship by using dynamic data estimation technique involving GMM. This has not formed the basis of any prior study in Nigeria. Thus, the study contributes to the literature by focusing on the banking sector where there is a high degree of internationalization of bank's operation. The result of this study has significant implications for a wide range of stakeholders such as regulators, academician and bank managers. The outcome of our study demonstrates the importance of enacting legislations that will improve women board representation in order to benefit fully from BGD. Bank managers would benefit from the outcome of this study as it will serve as a tool for legitimating their activities and having good public image and cordial relationship with the banks' stakeholders. These will in turn improve their performance. BGD would strengthen the CG mechanism for improved monitoring and control by serving as an antidote to agency problem. Also, it will facilitate effective and efficient decision-making and serve as a means of ensuing firms' sustainability. From the pragmatic perspective, this study contributes by bridging the gap between theory and practice and giving policy directions as to the reasons why banks in Nigeria should include more female directors on the board so as to foster firm relationship with all stakeholders as women are considered to be more philanthropic nature. The study did not provide support for legitimacy theory that firms engage in CSR activities in order to legitimate their activities and that BGD can strengthen firm CSR endeavour. The study concludes that BGD has no significant effect on CSR of listed DMBs.

7.2. Recommendation

The recommendation emanating from the finding is that policymakers and regulators should increase women presence and participation on the board by enacting laws that would stipulate a minimum gender quota such as 33% women presence and representation in order to improve CSR endeavour. Also, there should be stiff penalties in place for banks that fails to comply with this law so as to serve as deterrence to others. Also, the shareholders should encourage women

presence and participation in the boardroom by emphasizing this in the annual general meeting. This is necessary and beneficial to shareholders since women presence and representation would result in high level of commitment to CSR endeavour which will in turn improve firm financial performance upon which shareholders wealth maximization is based.

7.3. Suggestion for future studies

Although this study contributes to knowledge, it has its own limitations, which can form the basis for future studies. The major limitation of this study is its focus on only Nigerian listed DMBs. Similar study should be extended to the Nigerian non-financial sector of the economy.

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