

Corporate Board Diversity and Human Capital Disclosure: Evidence from Nigeria

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ABSTRACT

It is said that humans are all-encompassing. They are the driving force behind every business' success. Without employees, businesses would be unable to function and have no one with whom to interact. Although, there is an advancement in automated systems and artificial intelligence, human beings still continue to be the main drivers of innovation and production. Therefore, the purpose of this study is to investigate how board diversity affects the disclosure of human capital in Nigerian listed companies. Data were collected from four hundred and forty-four financial years (forty-four firms in Nigeria from 2015-2024) of listed non-financial services firms in order to examine the effect of board diversity on Human Capital Disclosure. The study analysed the data by means of descriptive statistics to provide summary statistics for the variables. Similarly, the study adopted Ordinary Least Square (OLS) regressions to test the hypotheses using STATA software. The results of the regression analysis showed that board gender diversity, board education, and the gender makeup of the audit committee all significantly improve the disclosure of human capital. The result however exhibited that board nationality does not improve the disclosure of human capital of the firms.

ملخص

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يُقال إن الإنسان كائن شامل، وهو القوة المحركة وراء نجاح أي نشاط تجاري. فبدون الموظفين، لا يمكن للمؤسسات أن تؤدي وظائفها أو أن تتفاعل مع بيئتها. وعلى الرغم من التقدم الحاصل في أنظمة الأتمتة والذكاء الاصطناعي، فإن البشر لا يزالون يشكلون المحرك الأساسي للابتكار والإنتاج. ومن هذا المنطلق، تهدف هذه الدراسة إلى تحليل أثر تنوع مجلس الإدارة على الإفصاح عن رأس المال البشري في الشركات المدرجة في نيجيريا. تم جمع البيانات من 444 سنة مالية (44 شركة غير مالية مدرجة في نيجيريا خلال الفترة 2015–2024)، من أجل دراسة العلاقة بين تنوع المجلس والإفصاح عن رأس المال البشري. وقد استخدمت الدراسة الإحصاءات الوصفية لتلخيص متغيرات الدراسة، واعتمدت على نموذج المربعات الصغرى العادية (OLS) لاختبار الفرضيات، باستخدام برنامج STATA. أظهرت نتائج التحليل أن تنوع النوع الاجتماعي في مجلس الإدارة، ومستوى التعليم لدى الأعضاء، وكذلك التوازن الجندي في لجنة التدقيق، تسهم جميعها بشكل معنوي في تحسين الإفصاح عن رأس المال البشري. في المقابل، لم يُظهر تنوع الجنسيات في مجلس الإدارة تأثيراً معنوياً على الإفصاح عن رأس المال البشري لدى الشركات.

RESUMÉ

On dit que les êtres humains sont universels. Ils sont le moteur de la réussite de toute entreprise. Sans employés, les entreprises ne pourraient pas fonctionner et n'auraient personne avec qui interagir. Bien que les systèmes automatisés et l'intelligence artificielle aient progressé, les êtres humains restent les principaux moteurs de l'innovation et de la production. Par conséquent, l'objectif de cette étude est d'examiner comment la diversité au sein des conseils d'administration influe sur la divulgation du capital humain dans les sociétés cotées en bourse au Nigeria. Les données ont été collectées sur quatre cent quarante-quatre exercices financiers (quarante-quatre entreprises au Nigeria entre 2015 et 2024) d'entreprises cotées du secteur des services non financiers afin d'examiner l'effet de la diversité au sein des conseils d'administration sur la divulgation du capital humain. L'étude a analysé les données à l'aide de statistiques descriptives afin de fournir des statistiques sommaires pour les variables. De même, l'étude a adopté des régressions par la méthode des moindres carrés ordinaires (OLS) pour tester les hypothèses à l'aide du logiciel STATA. Les résultats de l'analyse de régression ont montré que la diversité des genres au sein du conseil d'administration, le niveau d'éducation des membres du conseil d'administration et la composition par genre du comité d'audit améliorent tous de manière significative la divulgation du capital humain. Les résultats ont toutefois montré que la nationalité des membres du conseil d'administration n'améliore pas la divulgation du capital humain des entreprises.

Keywords: board diversity, board gender, board education, foreign directorship, human capital disclosure, Blau index.

JEL Classification: C23, R41

1. Introduction

The issue of corporate governance has been more prominent in recent years in the global community, with a growing focus on the significance of diversity in company boards. The relationship between corporate board diversity and the publication of human capital-related information has been a central focus as firms aim to improve openness and accountability (Modupeola & Christian, 2021; Loulou-Baklouti, 2023; Olaoye & Oladele, 2024; Yahaya, 2025). With the growing emphasis on corporate social responsibility and ethical business practices by both global and domestic stakeholders, the significance of diversity in corporate governance goes beyond just adherence to regulations (Ojo & Umar, 2024; Oyerogba & Ogungbade, 2020; Onyeka & Amahalu, 2022; Ojo & Umar, 2024). Understanding the complexities of how different viewpoints within corporate boards affect the communication of information on human capital, and how this impacts public perceptions and sustainable business practices is crucial.

Meanwhile, the study of human capital (HC), which supports company feat, progress, and enduring sustainability, from a number of perspectives, is becoming more and more attractive to academic and professional researchers. HC gives businesses the motivation and vigour they require to strive in the market. It is regarded as a crucial value generator and a strategic component for boosting businesses' competitiveness (Ojo & Umar, 2024; Francoeur et al., 2019; Oyerogba & Ogungbade, 2020). HC consists of personnel competencies, capabilities, expertise, skills, and/or knowledge that the entities may use to create competitive advantages or provide goods (Lerro *et al.* Kingori, 2025). HC has the capacity to cover the discrepancy between a firm's book worth and its market worth (Ahangar, 2011; Baker et al., 2020; Kingori, 2025). Through, value generation efficiency from human innovation, the businesses' operational structure, and the link between customers and suppliers, human capital improves enterprises' competitive advantage (Malik *et al.*, 2012; Modupeola & Christian, 2021). The central concept in intellectual capital research is HC. The Industrial Training Amendment Act of 2011 amended the Industrial Training Act in Nigeria which requires businesses to

develop relevant skills in order to build a pool of domestic HC to fulfil the desires of the economy. According to (Kingori, 2025; Naciti, Cesaroni & Pulejo, 2021; Abhayawansa & Abeysekera, 2008), some countries disclosed more human capital information than in others and mostly, companies placed less importance on human capital compared to structural capital and relational capital.

By decomposing information that is not frequently provided in a company's statement of financial position, human capital disclosure (HCD) closes the knowledge gap between management and stakeholders (Ojo & Umar, 2024; Modupeola & Christian, 2021; Eccles & Mavrinac, 1995; White *et al.*, 2007). The goal is to satisfy users' information needs by providing information on how businesses manage these priceless resources (Striukova *et al.*, 2008; Gowthorpe, 2009). Despite the acknowledged overall value which HCD created for firms which are not yet formalized. Based on Human Development Index (HDI) report from the United Nations Development Programme for 2020 (UNDP), Nigeria ranks 161 out of 189 countries and territories with a 2019 HDI value of 0.539, placing it in the low human development category. This poor level of human development affects national production and slows national development. Many factors such as lack of sufficient institutional support, inadequate infrastructure, a national culture of corruption, and weak enforcement are obstacle to human capital growth and development in Nigeria (Anakwe, 2002; Gbadamosi & Adisa, 2022; Olaoye & Oladele, 2024). The Nigeria Code of Corporate Governance (NCCG) requires firm to be transparent and disclose sufficient information on human resource policies as part of governance best practice (FRCN, 2018). This initiative is envisioned to enhance human capital development which essentially drives national development. Thus, it is imperative to study this human capital disclosure in order to assess firms' human capital performance.

Mixed conclusions come from a synthesis of the results from studies on human capital disclosure (Abhayawansa & Abeysekera, 2008). For instance, while Bezhani (2010) and Feleaga *et al.* (2013) identified weak and declining reporting habits among organizations, Abeysekera and Guthrie (2005), Raimo *et al.* (2020) as well as other researchers discovered improved human capital disclosure. Studies conducted from developing nations likewise revealed low level disclosures (Olaoye & Oladele, 2024; Musman and Abdulrahman, 2013; Bhasin, 2016; AbdullRazak *et al.*, 2016; Al-Hajaya *et al.*, 2019). Due to lower

transaction costs and the spontaneous growth of human capital in developing countries, there is an increasing need for adequate studies on the human capital disclosure incentives of enterprises in these countries (Jibril & Isa, 2025; Abeysekera & Guthrie, 2005).

Nigeria is endowed with massive human capital stands to benefit from firm disclosures and promote efficient of labour and capital market. A crucial technique for providing information on a company's performance on its personnel to stakeholders' decision-making is human capital disclosure (Tejedo-Romero & Araujo, 2022; Abdelhaq et al., 2025). According to Hitt *et al.* (2002) companies with broad human capital disclosure may have a competitive advantage in the new global market. Because it closes the knowledge gap between managers and potential investors and lessens information asymmetry, human capital disclosure lowers a firm's cost of equity capital for businesses (Abdelhaq et al., 2025; Cormier *et al.*, 2009). This makes it easier to finance new business endeavors (Modupeola & Christian, 2021; Shane & Cable, 2002). Despite its importance, there is little or few research if any on the disclosure of HCl in developing countries especially Nigeria. Hence, this study augments literature with evidence on HCD in Nigeria and would support policy makers and stakeholders in decision making processes.

The lack of empirical research on how diversity in top-level corporate leadership may affect the disclosure of vital human capital metrics like workforce composition, talent development initiatives, and diversity and inclusion strategies hinders our understanding (Modupeola & Chritian, 2021; Loulou-Baklouti, 2024; Francoeur *et al.*, 2019). Diversity in corporate governance extends beyond regulatory compliance as global and domestic stakeholders emphasise corporate social responsibility and ethical business practices. Understanding how corporate board opinions affect human capital communication is critical (Kingori, 2025; Modupeola & Chritian, 2021; Baker *et al.*, 2020). This impacts society's view of the organisation and helps create sustainable business plans. Although several scholars have studied corporate governance and disclosure procedures in Nigeria, there is little evidence on the relationship between corporate board diversity and human capital disclosure. This paper examines how diversity on corporate boards affects human capital disclosure in Nigerian companies to overcome this important shortcoming.

Agency theory is extended by this study to analyse how corporate board diversity improves transparency and accountability, encouraging thorough disclosure of non-financial information like human capital. This study will also help explain how business diversity affects managerial conduct disclosure quality in Nigeria's weaker institutional framework. Finally, the study shows how corporate board diversity can strengthen corporate legitimacy by improving the disclosure of human capital practices that meet societal expectations for equity, inclusivity, and sustainable development, especially in an era when trust in corporate institutions is low. Therefore, the study will show how external reporting techniques and internal governance structure improve business conduct sustainably. This report informs policymakers, corporate executives, and stakeholders about Nigerian corporate board diversity and human capital disclosure.

2. Literature Review

According to stakeholder theory, businesses function within complex multi-party contexts where interested parties have a range of different expectations (Cots, 2011). To meet the needs of stakeholders, NCCG compels corporate boards to disclose voluntary human capital. This would promote participation in many levels of activities (Michelon & Parbonetti, 2012). The staff development programs and working conditions are facilitated by human capital exposition, which closes the communication gap. According to the studies by Qestha (2015), Soebyakto *et al.* (2015), Alshadat (2017), and Susanto *et al.* (2019), corporate boards that adopt a communicative human capital disclosure policy have better access to human potential. The disclosure of HC information by businesses, according to Abeysekera (2008), helps to relieve pressure on businesses and their stakeholders to continue amassing capital. In order to enhance communication and transparency, NCCG mandates that companies should ensure that corporate boards have a proper balance of diversity and competencies, including gender and experience, without compromising competence, independence, or integrity.

Earlier studies showed that corporate governance initiatives had influence on firm disclosure performance (Miller and Triane, 2009). For instance, Raimo *et al.* (2020) confirmed a significant positive effect of board diversity on the level of HC information disclosure. Abeysekera (2010) found that larger boards lead to firms disclosing more on HC. Tejedo-

Romero and Araujo (2022) showed that board composition influence the human capital information disclosure. Hence, NCCG initiative on board diversity could promote human capital disclosure in Nigeria leading to human capital development.

2.1 Underpinning Theory

This study considered both agency theory and legitimacy theory as underpinning theories to examine how board diversity serves as a monitoring mechanism that strengthening the transparency and accountability in the corporate reporting. The agency theory broadens the understanding of how diversity influence managerial behavior and quality of disclosure in settings with lower/weaker institutional framework like Nigeria. Whereas, the legitimate theory presents an insight on how board diversity may enrich the legitimate of corporate organizations most especially in Nigeria by strengthening the disclosure of human capital practices that conform with expectations of industries as well as society on sustainable development, inclusivity and equity. Thus, the diverse board role in improving greater openness on HCD becomes main mechanism for building legitimacy and stakeholders' value in Nigeria. Finally, resource dependency theory used in this study to posit board diversity act for strategic asset, and offering access to experience, external networks and required skills. Thus, resources dependence theory provides support in the view of board as a strategic contribution to stakeholder engagement and information transparency.

2.2 Development of Research Hypotheses

Gender: This indicates the number of females on board to total members. More female directors could improve the board's independence because they typically ask questions that male directors might not. In a study by Rynan and Haslams (2005), the authors argued that in a downturn, female are more prospective to assume to leadership responsibilities. The authors continue by stating that shareholders may view their membership on the board as a sign that significant change is on the horizon and grow more hopeful about the future of the business. Gender-diverse boards are involved in social concerns, such as sponsoring more charities and developing deeper contacts with the local community, shareholders, and further stakeholder clusters (Williams, 2003; Bernardi & Threadgill, 2010). The NCCG requires firms to ensure gender diverse for effective

performance. Prior studies show that female on the boards would positively relate to firm human capital disclosure performance (Kılıç and Kuzey, 2016; Wu, 2016). Tedejo-Romero *et al.* (2017) and Giuseppe *et al.* (2021) revealed that presence of female on boards is helpful to improved voluntary disclosure of intellectual capital. However, other studies (Dan and Arianti, 2017; Firmansa *et al.*, 2018) found that female board member reduce intellectual capital disclosure (ICD). A recent study by Rabiou *et al.* (2022) showed that only twenty-seven percent of board members across listed firms are female. This indicates low gender diversity of boards and may not really influence human capital disclosure among Nigerian firms. Thus:

H₁: Board gender will not influence HCD significantly

Audit Committee Gender Diversity: The gender makeup of the audit committee is defined as the proportion of female members among all members of the AC. In order to safeguard the interests of the shareholders, an audit committee is required to keep an eye on the way the business is run and its internal control system. According to the code of corporate governance, a firm's audit committee (AC) is intended to monitor legal compliance and ethical business practices. Therefore, it is important to emphasize the AC's responsibility in oversight and monitoring. In research of eight (8) Nigerian listed banks from the 2014–2017 financial years, Oziegbe and Ofe (2020) found that diversity in AC gender is significant on ICD. Additionally, Alqatamin (2018) discovered that in Jordan gender diverse-board improve firm performance. Thus, the following hypothesis is formulated:

H₂: Audit committee gender will not influence HCD significantly

Foreign Directorship: It is generally accepted that a large pool of qualified candidates with more extensive industry experience would be available for the board if there were foreigners on it. Foreign members can offer essential expertise that domestic members lack due to their various experiences (Lee & Farh, 2004). The law permits foreigners to register businesses in Nigeria, own 100% of them, and serve as directors. Since the foreign board members are aware of how important it is for their home nations to disclose information about human capital, they may use this knowledge in their individual companies, which would improve HC. Without the Combined Expatriate Residence Permit and Aliens Card, a

foreign director is not permitted to hold the position of Managing Director or sign a bank account for a business (CERPAC). The NCCG, however, says nothing about the foreign directorship.

Globalization makes firms to adapt their governance structures to comprise more foreigners with global experience on their boards to harness access to foreign resources (Carpenter, 1998; Oxelheim *et al.*, 2013). Bokpin and Isshaq (2009) opined that foreign directorship in Africa is associated with leads better governance and disclosure. Thus, foreign board diversity could affect the HCD especially if they come from countries with stronger stakeholder rights (Hooghiemstra *et al.*, 2015). However, Isa *et al.* (2022) reported only 27.16 percent of the directors on the boards of listed firms in Nigeria are foreigners. Some researchers found a negative and significant link between foreign ownership and HCD. More foreigners on boards reduce the amount of information disclosed on HC. Thus, we hypothesize:

H₃: Foreign directorship will not have a significant influence on HCD.

Board Education: Diversity in educational background is characterized as knowledge or skill gaps that contribute to the development of the most effective responses to problems as well as formulation and evaluation of strategic decision-making. Board members' capacity to absorb innovations and new concepts rises with education (Carmen *et al.*, 2005). It measures the directors' expertise, cognitive style, and skill set (Hambrick and Mason, 1984), all of which contribute to formulating and evaluating the best solutions for problems during the process of strategic decision-making (Ruigrok *et al.*, 2006). Educational diversity is becoming increasingly crucial in today's corporate environment as the economic system becomes more complex (Mahadeo *et al.*, 2012).

In order for the boards to be efficient and effective, the NCCG demands a balance of education. Directors benefit from education because it broadens their perspectives and improves their thinking, which helps them grasp the interests of more stakeholders (Welford, 2007). However, Goodstein *et al.* (1994) showed that the ability of the company's board of directors to change corporate strategy is negatively impacted by diversity in formal educational background. According to Wallace and Cooke's (1990) research, directors with a background in accounting and business education may be able to offer greater insight to boost the management

teams and the company's credibility. Isa *et al.* (2022) discovered that board educational diversity influences intellectual capital disclosure of quoted firms in Nigeria.

In particular, directors' training in accounting and financial management fallouts in an improved level of disclosure to surge the company's reputation and the management's credibility (Wallace *et al.*, 1990). In a study by Isa *et al.* (2022), the authors found that about 63% of board directors have degrees in accounting, finance, management, or economics. Their findings point to a wide range of educational backgrounds among the board members of the listed companies, which translates into acceptable transparency in the development of HC resources and policies. However, these studies did not disaggregate HC information. Thus:

H₄: Board education will have a significant influence on HCD.

3. Data and Methodology

3.1 Research design

The research design for this study is called an ex post facto research design. When using an ex post facto design, the researcher does not have direct control of the independent variables because the manifestations of those variables have already taken place and are not inherently manipulated (Kerlinger & Rint, 1986). This is because an ex post facto design seeks to reveal possible relationships by observing an existing condition or state of affairs and searching back in time for plausible contributing factors.

3.2 Population of the Study

The population of the study is made up of all quoted companies on the Nigerian Stock Exchange as at January 1, 2024. The companies are classified under eleven sectors, as follows: agriculture; construction/real estate; consumer goods; financial services; healthcare; industrial goods; information & communications technology; natural resources; oil & gas; services; utilities; and conglomerates. The population consisted of 171 firms under the 11 sectors.

3.3 Procedure for Sample Selection

The population of the study comprises of forty-four listed firms which are stratified on sectoral clusters. After applying the five filters, four hundred and forty (440) firms-years observation were selected, however, fifteen of them did not qualify because they had been delisted during the study period or were not quoted as of the first of January 2015. Data were collected from forty-four listed non-financial firms for the period of 10 years between 2015-2024 (440 firm-year observations) of listed non-financial services firms in order to examine the effect of board diversity on Human Capital Disclosure. The study analysed the data by means of descriptive statistics to provide summary statistics for the variables. Similarly, the study adopted Ordinary Least Square (OLS) regressions to test the hypotheses using STATA software. Thus, descriptive statistics, correlation and regression analyses techniques were adopted for analysis of data in this study.

3.4 Measures

In this section the constructs for the paper are categorized into two dimensions (presented in Table 1): human capital disclosure (dependent) and corporate board diversity (explanatory variables). Human capital disclosure was measured as the proportion items disclosed to the total items expected to be disclosed (Ax & Maton, 2008; Yi & Davey, 2010; Alshhadat, 2017). If a specific index item is disclosed 1 is assigned, and 0 if it is not. Board diversity is proxy using board gender diversity, board education and board nationality. Hence the Table 1 below explain measured in line with previous researchers.

Table I: Variable Measurements

Variable	Acronym	Measurement	source
Human Capital Disclosure:	HCD	Sum of scores over total expected scores	Li <i>et al.</i> , (2008), Yi <i>et al.</i> , (2010), Alshhadat (2017), Al-Sartawi (2018), Al-Hajaya (2019)
1. Employees count of a firm	HCD-1		
2. Qualification of directors and employees	HCD-2		
3. Training policies and programmes	HCD-3		
4. Work-related knowledge acquired	HCD-4		
5. Entrepreneurial spirit	HCD-5		
6. Employee equality	HCD-6		
Board Gender Diversity	BDG	Gender diversity is defined using Blau Index $BLAU\ Index = 1 - \sum_{i=1}^n P_i^2$ where P_i is the percentage of members in each gender and n is the total number of genders.	Nadeem (2019)
Board Nationality	BDN	Foreign directors on the board divided by the total number of board members	Darmadi (2011), Talavera <i>et al.</i> , (2018)
Board Educational	BDE	Percentage of board members with backgrounds in finance and accounting divided by the entire board.	Rasmini <i>et al.</i> , (2014), Ali & Oudat (2021)
Audit Committee Gender	ACG	Female audit committee members as a percentage of all audit committee members	Isa and Farouk, (2018), Oziegbe <i>et al.</i> , (2020)
Board Size	BDS	The ratio of executive and non-executive directors.	Abeysekera, (2010), Hataneet <i>et al.</i> , (2017)
Firm Size	FMS	Natural logarithm of total assets	Ferreira <i>et al.</i> , (2012), Alshhadat (2017), Isa (2019)
Auditor Type	ATP	If the big four auditors or one of their affiliates conducted the audit, the dummy variable 1 is adopted, otherwise 0.	Ferreira <i>et al.</i> , (2012), Gan, <i>et al.</i> , (2013) Firmsaet <i>et al.</i> , (2018)

Source: Authors' Compilation 2023

3.5 Model specification

Descriptive statistics were used to summarise the data into a manageable format and to investigate the impact of corporate board diversity on the disclosed human capital by the chosen firms. The hypothesized null hypotheses in this study were tested using multiple regression analysis. In order to test hypothesis H1, H2, H3 and H4, the study used the following empirical models:

$$HCD_{it} = \beta_0 + \beta_1 BDG_{it} + \beta_2 BDN_{it} + \beta_3 BDE_{it} + \beta_4 ACG_{it} + \beta_5 BDS_{it} + \beta_6 FMS_{it} + \beta_7 ATP_{it} + \varepsilon_{it}$$

HCD_{it} = Human Capital Disclosure; BDG_{it} = Gender Diversity; BDN_{it} = Nationality Diversity; BDE_{it} = Educational Diversity; ACG_{it} = Audit committee Diversity; BDS_{it} = Board Size; FMS_{it} = Firm size; ATP_{it} = Auditor Type; ε_{it} = the stochastic disturbance/Error term; and β_0 = Constant, β_1 = Constant

Where the subscripts it represents the measure for firm i at time t.

4. Data Analysis and Results

4.1 Summary of Descriptive Statistics

The table revealed that the mean human capital disclosure score was about 0.317. This means that non-financial services firms in Nigeria disclosed human capital at an average of 32%. The minimum human capital disclosure level is 0% and the maximum disclosure level is 55%. The mean board gender diversity score for the non-financial services companies under study was 0.439, which means that 43% of these companies' boards were typically made up of women. The range of values between 0 and 0.60 indicated that there were businesses during the study period with no women on their boards. The highest value implies that there was a firm that had 60% of women on the entire board. Board nationality had a mean value of 0.260, indicating that 26% of the directors on the boards of the companies were, on average, foreigners. The minimum value of 0 and the maximum value of 0.67 implied that within the firms and the study period, there were firms that did not have any foreign director on their boards. The highest value implies that there was

a firm that had 67% of foreign on the entire board. The summary statistics of board diversity and HCD are presented in Table 2.

Table 2: Descriptive statistics

Var.	Observation	Mean	Std. Dev.	Minimum.	Maximum
HCD	440	0.317	0.112	0	0.550
BDG	440	0.439	0.115	0	0.600
BDN	440	0.260	0.202	0	0.670
BDE	440	0.624	0.103	0.2	0.880
ACG	440	0.190	0.159	0	0.670
BDS	440	8.797	2.468	4	17.00
FMS	440	7.019	0.878	4.670	9.261
ATP	440	0.600	0.490	0	1

Note: This table provides results of descriptive statistics which summarily described the study variables.

Board members education showed 0.20 for least and 0.88 were recorded as the extreme. Further, 63% of board members had backgrounds in accounting, business, or economics on average. The audit committee's gender composition has a mean value of 0.19. The values range from 0 to 0.67, with 0 being the lowest and 0.67 the highest. Board size had an average mean value of eight (8), the lowest is 4 and the highest is 17. Firm size has an average of 7 with a lower value of 4.70 and higher value of 9.26. Auditor type was 0.60 on average. The lowest and maximum values are 0 and 1, respectively.

4.2 Correlation Analysis

As shown in Table 3, the relationships between board gender, board nationality, board education, AC gender composition, board size, firm size, auditor type are direct with human capital disclosure with the *beta* of 0.22, 0.13, 0.11, 0.25, 0.18, 0.33, 0.21 correspondingly. The connexion between board gender with board education and auditor type are mild and directly related. However, board gender diversity showed a weak AC gender composition and board size. In addition, board gender showed a weak and converse connexion with board nationality and firm size. Board nationality is found to be mildly and positive related to all other explanatory variables except, board education which is weak and positively related. However, the relationship between board nationality and AC gender composition is negative. The relationship between board education to all other explanatory variables is found to be weak and

positively related except, AC gender composition which showed a negative relationship. The correlation results of the relationship between board diversity and HC is presented in Table 3.

Table 3: Correlation Matrix

Var.	HCD	BDG	BDN	BDE	ACG	BDS	FMS	ATP	VIF
HCD	1.00								
BDG	0.22	1.00							1.28
BDN	0.13	-0.03	1.00						1.35
BDE	0.11	0.34	0.13	1.00					1.23
ACG	0.25	0.17	-0.01	-0.10	1.00				1.25
BDS	0.18	0.04	0.12	0.17	-0.21	1.00			1.64
FMS	0.33	-0.02	0.43	0.13	0.08	0.52	1.00		1.92
ATP	0.21	0.21	0.35	0.14	0.19	0.34	0.48	1.00	1.55

Note: This Table contains the correlation matrix and the VIF results on the variables which is used to examine multicollinearity among the explanatory variables.

From Table 3, the connection between AC gender composition and other explanatory variables is feeble and direct except for board nationality and education which showed feeble and converse connexion. Also, the link among board size and other explanatory variables is found to be weak and positive with the exception of AC gender composition which is negative. However, link between board size with firm size and auditor type is mild and positive. The link between firm size with other explanatory variables is found to be mild and positive except, board education and AC gender composition which is weak and positive. However, a negative and weak association is found between firm size and board gender. The relationship between auditor type with other explanatory variables is found to be mild and positively related except, board education and AC gender composition which is weak and positive.

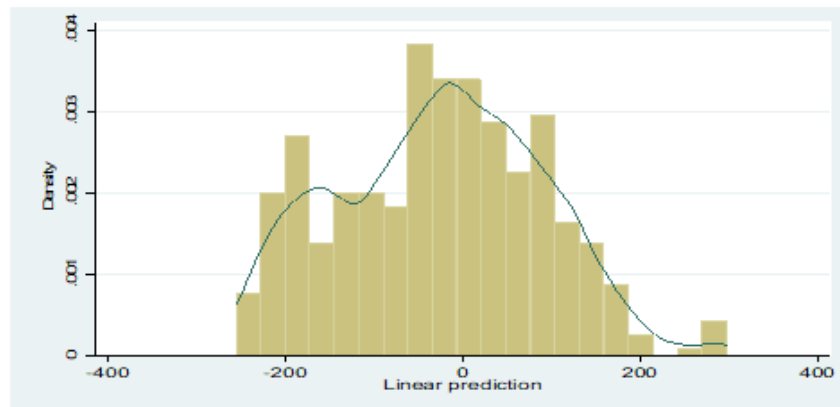
Additionally, the multi-collinearity test is used to check for correlation between the exogenous among the variables. The explanatory variables of the model were examined using VIF to determine whether they exhibit multi-collinearity. When the VIF is greater than 10, it is likely that there is harmful multi-collinearity (Neter *et al.*, 1989 and Gujarati 2003). The test's results revealed that the VIF was 1.28, 1.35, 1.23, 1.25, 1.64, 1.92 and 1.55. Given that the mean VIF is 1.46, multi-collinearity is not present.

4.3 Diagnostics Test

Checking the assumptions of the linear regression model is one of the final steps in multivariate analysis. The assumptions include looking for outliers, performing a normality test, heteroskedasticity, autocorrelation, Breuse Pagan LM test and Hausman test are presented. According to Hair et al. (2018), verifying the assumption is one way to determine whether or not a regression model satisfies the assumption of a linear regression model. In the present investigation, a test for normalcy was carried out utilising the P-plot graph, and a test for heteroskedasticity was carried out use Breusch and Pagan (1980).

4.3.1 Normality Test

In multivariate analysis, one of the most important steps is to check whether or not the data is normal. The process of identifying the distribution pattern of the residual is what we mean when we talk about normality. It is possible to draw a valid conclusion even if the assumption of normality is violated, which means that attaining the assumption of normality is not a necessary requirement to estimate the regression coefficient. However, a violation is possible if the study sample consists of hundreds of observations (Gujarati, 2004). This is because it is possible to draw a valid conclusion even if the assumption of normality is violated. In this study, the P-plot was used to assess for normalcy. A P-plot is a visual assessment of the distribution that helps the reader to judge the physical distribution of the data. This is done by looking at the distribution visually. According to Ghasemi and Zahediasl (2012), this method shows the observed value against their distribution and gives the reader with the form of the gap in the data as well as understanding regarding the outlying value. As a result, the result of the normalcy test is displayed in Figure 1. The conclusion demonstrates that the data does not depart significantly from the normal distribution fitted line.

Figure 1: Residual Plot for Financial Reporting Quality

4.3.2 Heteroskedasticity Test

According to Baltagi, Jung, and Song (2008), the standard error component of multivariate analysis makes the assumption that the disturbances have a variance that is homoscedastic and that they are distributed across a variety of individual variables. The cross-sectional observations are likely to vary if the number of observations increases, and as a result, the data may represent some level of heteroskedasticity (Vogelsang, 2012). On the other hand, heteroskedasticity is not a fatal problem when working with panel data. There are many methods available to identify heteroskedasticity; one of these methods is to use a graphical approach. On the other hand, heteroskedasticity can be identified by the use of a mathematical method. In this particular investigation, the Breusch-Pagan and Cook-Weisberg test for heteroskedasticity is utilised to check whether or not the regression models exhibit homoscedastic behaviour. The assumption that the variance of the error terms is consistent across all of them is made by the null hypothesis. If the p value is more than 0.05, this indicates that the model successfully reject the null hypothesis. Because the p-values for all of the models are higher than the cutoff of 0.05 in Table 4, it may be deduced that there are no issues of heteroskedasticity. This is shown that the fixed effect regression the most appropriate model.

Table 4: Breuch -Pagan / Cook -Weighberg Test Modified Wald test for group wise heteroscedasticity

DV	Chi2 (73)	Prob > Chi2	Null (H0)
HCD	0.8105	0.0951	Rejected

4.3.3 Hausman Specification Test and Model Selection Criteria

In addition to the normality and heteroskedasticity test, a Hausman test was also carried out in this research to determine if a random or fixed effect was more appropriate. The model with a random effect (RE) is stated to be the preferable option in the null hypothesis, but the alternative hypothesis proposes that the model with a fixed effect (FE) is better suitable. Meanwhile, if the p-value is more than 0.05, RE is the method that should be used. On the other hand, if the p-value is lower than 0.05, then the data ought to be estimated by the use of FE. The findings, which are presented in Table 5, point to significant values that are lower than 0.05 (P values that are less than 0.05), which suggests that a model with a fixed effect is the one that should be used for the research.

Table 5: Hausman Specification Test

Variable	Chibar2(01)	Prob > Chi2	Null (H0)
HCD	5.11	0.0058	Rejected

From the result of the Table 5 above, the result of the p-value is less than 0.05(P values that are less than 0.05), which suggests that a model with a fixed effect regression model is appropriate for this study.

4.4 Regression results (Fixed Effect Model)

This section presents and interprets the results of the fixed effect regression model on the relationship between board diversity and human capital development. The R^2 as indicated in Table 4 is higher than the R^2 of 0.206 reported by Li et al. (2016) from Taiwan listed companies. For the purpose of the interpretations, the indicators, such as the coefficient (β), robust standard error, t-values, and p-values were generated and presented. Thus, this study was analysed and interpreted according to the objectives. Thus, Table 4 presents the regression results of model one of the relationships between the board diversity and human capital development.

Table 6: Summary of Fixed Effect Regression

Variables	Coefficients	Std Error	t-stat.	Prob.
Cons	0.028	0.079	0.36	0.717
BDG	0.179	0.056	3.19	0.002
BDN	-0.051	0.308	1.67	0.096
BDE	0.389	0.057	6.89	0.000
ACG	0.107	0.030	3.52	0.000
BDS	0.001	0.003	0.45	0.651
FMS	-0.029	0.009	3.06	0.002
ATP	0.054	0.012	4,51	0.000
R-square = 0.2056				
F-statistics = 18.76				
Prob. = 0.0000				

*:p<0.1; **:p<0.05;***:p<0.01

From Table 4, the proportion of the overall variation in the endogenous variable that the explanatory variables collectively explained was given by the cumulative R-squared (R^2) of 0.2056, which is the multiple coefficients of determination. As a result, it was discovered that other factors, including the percentage of female directors on board, the number of board members with backgrounds in accounting, business, and economics, and other variables, account for 21% of the variation in human capital disclosure. The board diversity and human capital disclosure model is appropriate, according to the F-statistics value of 18.76, which is significant at one percent. It implies that any change in the diversity of the boards of the firms will have direct influence on disclosure of human capital. This means that there is a 99.9% possibility that the link between the variables was not the result of random chance, based on the P-value of F-statistics, which is significant at one percent. As a result, the regression's findings can be relied upon.

The gender diversity coefficient value was 0.179, with a significance level of 0.002, as shown in the table. This demonstrates that gender of the board significantly improved the corporations' disclosure of their human capital. This means that human capital disclosure of firms will improve by the coefficient value for every surge in the proportion of women on board. The null hypothesis, which asserts that board gender does not significant influences human capital disclosure, is therefore rejected. This is consistent with research from Giuseppe *et al.* (2017) and Tedejo-Romero

et al. (2022). Similarly, audit committee gender composition has a coefficient value of 0.107 with a p-value of 0.000. This connotes that the increase proportion audit committee's gender leads to surge in the human capital disclosure by the companies however, this influence is not significant. The null hypothesis is not supported by this result which is equivalent those of Alqatamin (2018) and Oziegbe *et al.* (2020).

Board education is significant at 1% and infers that HCD is directly and significantly influence by the directors' level of training. Although hypothesis four states that board education has no significant effect on disclosure of human capital, the null hypothesis is rejected based on the output of regression analysis. Board nationality coefficient value is -0.051, which is not statistically significant at either 1% or 5%. This proposes that board nationality has a converse but not significant influence on companies' HCD. Therefore, given the findings of the regression analysis, the paper fail to reject the null hypothesis, and the results is not consistence with finding of Othman *et al* (2018).

For control variables, the result in respect of board size as shown on Table III has a beta of 0.001 and p-value of 0.651 which indicates that board size does not have significantly bearing on HCD. The coefficient value for firm size was -0.029, which is significant at 1%. This suggests that larger companies disclosed less information on human capital. The beta value for auditor type is 0.054, which is significant at 1%. This specifies that the type of auditor has direct and significant influence on HCD in Nigeria.

5. Discussion of Findings

This study provided some fresh information on how board diversity affected HCD in the studied firms between 2011 and 2020. Large part of preceding studies was either related to developed countries or other developing countries; researchers in Nigeria have neglected the importance of conducting research on this HCD despite its important to economic growth of the nation. Thus, this evidence from Nigeria is seen as a valued addition to body of information and development of HC literature. Additionally, the longitudinal nature of this study contributes reliable information for understanding of the evolution of HCD phenomena.

Findings from this study are useful for companies to consider the inclusion and appointment of more female particularly those with knowledge in accounting, finance, economics and business management on their board in order to indulge more HCD for stakeholder informed decision on the development of HC and the economy. Additionally, more female in audit committees could improve the efficiency and monitoring capacities of the committee to strengthen the quality of HCDs. Finally, listed non-financial services firms in Nigeria should try to attract and appoint more directors from countries particularly those with record of advance HC development to assist in the development and quality of human capital information.

6. Conclusion and Recommendations

This study examines the effect of board diversity on human capital disclosure of listed non-financial firms in the Nigerian exchange group (NGx). Theoretically, the study extends the applicability of agency theory by examining how corporate board diversity serves as a mechanism that enhances transparency and accountability, hence promoting thorough disclosure of non-financial information such as human capital. This study will improve the comprehension of how corporate diversity may affect the quality of management behaviour disclosure in environments with weaker institutional frameworks, such as Nigeria. The study elucidates how corporate board diversity can bolster corporate legitimacy by improving the transparency of human capital practices that align with societal expectations regarding equity, inclusivity, and sustainable development, particularly in an era characterised by diminished trust in corporate institutions. Consequently, the study will emphasise the relationship between external reporting methods and internal governance structures in promoting sustainable business behaviour.

Practically, this study seeks to enlighten policymakers, corporate leaders, and stakeholders regarding the impact of corporate board diversity on human capital disclosure practices throughout Nigerian industry. Based on the limitations of this study, this study only considers data for Nigeria without consider other African countries, the future studies may consider other African countries data for the robustness and generalization of the study. Also, this study only consider aspect of board diversity such as gender, nationality, education and audit committee, future studies may use other factor of board diversity towards human capital disclosure. Conclusively, this study contributed to the theory and practice, as well as direction for further studies related to the human capital disclosure of listed firms in Nigeria.

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