



BOARDROOM PROFESSIONAL HETEROGENEITY AND CORPORATE SUSTAINABILITY PERFORMANCE: EVIDENCE FROM LISTED MANUFACTURING FIRMS IN NIGERIA

Segun Idowu Adeniyi¹ Amobi Daniel Nwokafor²

¹Department of Accountancy, Nnamdi Azikiwe University, Awka, Nigeria

²Audit House, Lagos, Nigeria

E-mails: si.adeniyi@unizik.edu.ng¹; dramobinwokafor@gmail.com²

Correspondence: dramobinwokafor@gmail.com

Abstract

This study investigated the effect of boardroom professional heterogeneities on sustainability performance of selected listed manufacturing firms. The study specifically investigated the influence of educational heterogeneity and professional certification heterogeneity on sustainability performance. This study adopted ex post facto research design while data was sourced from Annual Reports and Account and Sustainability Reports for data analysis. The population of the study consisted of 30 selected consumer goods manufacturing enterprises listed on the Nigerian Exchange Group (NGX). Judgmental sampling technique was used to select twenty - one (21) consumer goods manufacturing companies as a sample size. The study found that board professional certification heterogeneity and board educational heterogeneity had significant effect on Corporate Sustainability performance. The study recommends among that policymakers and other stakeholders should encourage companies to diversify their boards with members from various educational backgrounds to enhance decision-making and innovation to boost corporate sustainability performance.

Key words: Corporate sustainability performance, Boardroom educational heterogeneity, Boardroom professional certification heterogeneity.

Introduction

The global business landscape is undergoing a significant transformation with an increasing focus on sustainability and ethical business practices (Boone & Maaiké 2018). The convergence of economic, social, and environmental considerations has catalyzed this paradigm shift. Hence, in addition to maximizing the shareholder's wealth, the expectations from corporate organizations now include being socially and environmentally responsible (Oluwatoyin, Agbi, & Mustapha, 2021). Developments in businesses worldwide, particularly in relation to sustainability, indicate the significance of corporate governance mechanisms and the need for firms to integrate these mechanisms into their sustainability strategies to ensure enduring sustainability performance. Corporate sustainability describes the management and coordination of

environmental, social and economic concerns of organizations' stakeholders to ensure responsible, ethical and ongoing success (Ali, Khan, & Rehman, 2022). Hence Sustainability Performance refers to a company's ability to balance economic, social, and environmental goals. However, there is a considerable dearth of empirical research on aspects of boardroom professional heterogeneities that influence corporate sustainability performance (Wagn, 2020). Studies in this regard are mostly uni-dimensional where corporate sustainability is operationalize only in terms of financial or economic performance which focuses more on profitability ratios and tend to disregard the other three dimensions (that is; social, governance and environmental dimensions) of sustainability.

The increasing complexity of business life has forced companies to employ dedicated board members equipped with creative toolkits and different backgrounds to reflect their contribution to operational and financial performance (Bloomberg, 2023). Boards of directors play a critical role in firm survival. Corporate boards assume a monitoring function by overseeing top management team actions, reviewing the use of resources, and evaluating strategic initiatives (Bodolica & Spraggon 2021). The Board of Directors provides a link between the corporation and the environment and the strategic pathway for achieving sustainability in corporations. The interest in the issue of professional heterogeneities has peaked in recent times. Recent attention has been directed at the influence of heterogeneity on the role of Board of Directors and a means of enhancing corporate governance (ACCA, 2015) Therefore, the diversity of board members has drawn the attention of many companies, policymakers, and other related parties with its role in formulating and implementing business strategies (Ciftci et al. 2019). Board heterogeneity is a diverse blend of features, qualities, and proficiency made available by the individuals in the board room as an input to the decision-making process. Previous studies categorised diversity at board level into different classes premised on the features they exhibit in terms of experiences, skills, education, and demographics (Harjoto, Laksmana & Yang, 2018). The corporate board is a vital internal governance mechanism, playing a critical role in mitigating agency problems and enhancing corporate performance (Ciftci et al., 2019). It is composed of team members with different backgrounds that help companies reach their goals. Therefore, boardroom professional heterogeneities refer to the diversity of skills, experiences, and backgrounds of board members.

Existing studies on board diversity and sustainability performance have largely focused on developed economies, with limited research on emerging markets like Nigeria. Specifically, there is a dearth of empirical evidence on the effect of boardroom professional heterogeneities on sustainability performance in Nigeria, leaving a gap in understanding how boardroom professional heterogeneities influences Environmental, Social, and Governance performance in this context.

Objectives

This study investigates the effect of boardroom professional heterogeneities on sustainability performance of selected listed manufacturing firms in Nigeria with a view to providing insights for improving board effectiveness and promoting sustainable business practices. The specific objectives of this study are to:

1. ascertain the effect of Board Educational Heterogeneity on Environmental, Social, and Governance (ESG) performance of listed manufacturing firms in Nigeria
2. determine the effect of Board Professional Certification Heterogeneity on Environmental, Social, and Governance (ESG) performance of listed manufacturing firms in Nigeria.

The study is guided by the following null hypotheses:

- H₁: Board Educational Heterogeneity does not have significant effect on Environmental, Social, and Governance (ESG) performance of listed manufacturing firms in Nigeria
- H₂: Board Professional Certification Heterogeneity does not have significant effect on Environmental, Social, and Governance (ESG) performance of listed manufacturing firms in Nigeria

The study focused on manufacturing firms due to their high environmental and social materiality. Manufacturing activities are resource-intensive and generate significant emissions, waste, effluent, and community health risks compared to service sectors (NESREA, 2007). Additionally, manufacturers with global supply chains face pressure from foreign buyers and ESG investors who demand board-level accountability for sustainability (Ahmad, Dauda & Lemu, 2022). Moreover, restricting the study to listed manufacturing firms enhances data homogeneity and reliability. Listed manufacturing firms are required to publish audited annual reports and corporate governance disclosures, ensuring consistent measurement of board diversity variables and sustainability performance proxies (Nwaobia, Kwarbai & Ogundajo, 2016).

This study is imperative because it will help to highlight the value of diverse perspectives in boardrooms, enhancing decision-making and shows how boardroom professional heterogeneities can drive sustainability initiatives and improve performance.

Literature Review

Corporate Sustainability Performance

Corporate sustainability describes the management and coordination of environmental, social and economic concerns of organizations' stakeholders to ensure responsible, ethical and ongoing performance. Serafeim and Yoon (2022) notes that corporate sustainability involves companies commitment to environmental protection, social

responsibility and governance. Therefore, corporate sustainability performance as the measure of an organization's ability to achieve profitability goals while positively impacts the environment, society, and economy. It moves beyond traditional financial metrics to include Environmental, Social, and Governance factors, such as carbon emissions, labour practices, and community engagement.

Board Heterogeneity

Board heterogeneity refers to the diversity of board members in both observable attributes (e.g., gender, age, nationality) and non-observable attributes (for instance; education, expertise, values) (Li, & He, 2021). It encompasses demographic diversity such as gender, ethnicity, and age and cognitive diversity, including educational and professional backgrounds (Wang, 2023; Oh, Chang, & Jung, 2019). Such diversity enhances governance quality, decision-making, oversight, and firm performance (Shehata et al., 2017). This study focused on board educational heterogeneity and professional heterogeneity.

Board Educational Heterogeneity

Board educational heterogeneity refers to variations in the academic qualifications and educational backgrounds of directors, including levels such as diplomas, bachelor's, master's, and doctoral degrees (Magnanelli et al., 2021; Khan et al., 2023). This heterogeneity influences how directors think, solve problems, and engage in decision-making (Blanco-Oliver., Veronesi. & Kirkpatrick, 2018). Boards composed of members with varied fields of study such as law, business, engineering, and the humanities can address complex issues more effectively and enhance strategic decision-making (Jebran, Chen, & Zhang, 2020). Firms with educationally heterogeneous boards are more likely to embrace innovation, reduce risk aversion, and improve performance

Professional Expertise Heterogeneity

Professional expertise is widely regarded as the root of high productivity, growth, and increased company value (Aboramadan 2021). Professional expertise heterogeneity encompassing an individual's entire professional background, it is typically further structured into industry and functional expertise, Industry expertise accounts for the different sectors an individual has worked in, while functional expertise focuses on the specific tasks and roles performed within a firm. Professional expertise diversity, therefore, captures the different industries and functional backgrounds represented within the corporate board.

Theoretical framework

This study is anchored on Upper Echelons Theory that said the characteristics and experiences of top executives and board members significantly influence organizational outcomes (Hambrick & Mason, 1984 in Fernández et al., 2020). It stated that the

demographic and cognitive diversity of these leaders shapes their perceptions, decisions and ultimately the performance of the organization. The experiences, values and cognitive frames of board members influence information interpretation and strategic decisions. A heterogeneous board brings varied perspectives, leading to richer discussions and more innovative solutions. Diverse boards are likely to have varied risk appetites and strategic orientations. This diversity can result in more balanced and well-considered strategic choices as differing viewpoints are considered and reconciled. This theory advocates that heterogeneous boards are more likely to foster creativity and innovation. Varied expertise and experiences of directors of corporate board can facilitate better ideas and approaches to address organization's ability to innovate and stay competitive. Diverse boards are more likely to represent a broad range of stakeholder interests, leading to improved oversight and commitment to environmental and social responsibilities.

Upper Echelons Theory argues that organizational performance are reflection of the board of directors and top managers who act based on their personalized interpretations of strategic situations. Board heterogeneity in cognition represents variation in board and directors values, risk perception and information processing capacity. The theory provides a robust theoretical basis for predicting that boards with greater heterogeneity will demonstrate stronger commitment to sustainability performance due to broader cognitive perspective.

Empirical Review

Boadi and Osarfo (2019) examined the educational diversity of board members on performance in the banking sector, finding that the educational qualifications of board members are relevant to the financial performance of banks. More specifically, the study underlines that board members with a first degree have a markedly positive influence on board effectiveness and bank performance while this is not the case for board members with PhDs, where a negative effect is found.

Ma, et al. (2019) assessed the influence of top managers on environmental information disclosure. The sample consists of listed manufacturing companies in Shanghai Stock and Shenzhen Stock Exchange for the period 2015 to 2017. The regression analysis revealed that a Master of Business Administration (MBA) educational background has positive effect on environmental information disclosure, while the impact of legal educational background is negative.

Umukoro, et al. (2019) revealed that highly educated directors have an influence on the sustainability report disclosure of 10 Nigerian Deposit Money Banks over the period of 2014 to 2016. In corroborating the finding, Gold, et al. (2021) investigated the influence of an educationally diverse board on sustainability reporting of listed consumer goods in Nigeria for the period 2014-2019. The author reported that board educational

background is positive and significantly affects the sustainability reporting of consumer goods firms in Nigeria

Iyafekhe, et al. (2020) found in their study that board members education level background has no significant impact on sustainability performance of listed deposit money banks in Nigeria. While Aguilera et al. (2021) highlight the importance of “functional expertise” on boards, finding that firms with directors possessing financial expertise exhibit superior financial performance, particularly during periods of economic downturn. Beyond expertise, the broader background of board members also plays a crucial role. Amini and Zhang (2022) explored the impact of “industry specific human capital” on board composition, demonstrating a positive correlation between relevant board member experience and firm risk management effectiveness.

Methodology

This study adopts *ex post facto* research design to investigate the effect of boardroom professional heterogeneities on sustainability performance of listed manufacturing firms in Nigeria. The population of the study consisted of 30 consumer goods manufacturing enterprises listed on the Nigerian Exchange Group (NGX), which were listed on the Nigerian Exchange Group floor as of December 31, 2024. Judgmental sampling technique was used to choose the sample size. This sampling technique was used for researchers to select manufacturing firms that their Annual reports and Accounts with Sustainability Reports are readily available either on their website or in the Nigeria Exchange Group. Therefore, listed manufacturing companies that had not been active on the Nigeria Exchange Group floor for a full ten years (2015–2024) were not included in the sample. Twenty - one (21) manufacturing firms were purposively selected from listed manufacturing firms as a sample size for the periods under reviewed. Data for this study was collected from Annual Reports and Accounts with Sustainability Report of sample size.

Model Specification

This study adapted the model of Musa, et al. (2020) that carried out a similar study of this nature in Nigeria.

The model is restated in a statistical form as follows

$$SPE = f (BLAUBEDH, BLAUBPCH) \quad \text{eq i}$$

In econometric form:

$$SPE_{it} = \beta_0 + \beta_1 BLAUBEDH_{it} + \beta_2 BLAUBPCH_{it} + \mu_{it} \quad \text{eq ii}$$

Equation ii above can be rewritten in its explicit form as follow:

$$SPE_{it} = \beta_0 + \beta_1 BLAUBEDH_{it} + \mu_{it} \quad \text{eq iii}$$

$$SPE_{it} = \beta_0 + \beta_1 BLAUBPCH_{it} + \mu_{it} \quad \text{eq iv}$$

Where:

SPE= Sustainability performance

BLAUBEDH = Educational heterogeneity

BLAUBPCH = Professional Certification heterogeneity

β_0 = the intercept of the model

$\beta_1 - \beta_2$ = Parameters of the regression coefficients

μ_i = Stochastic error term

The dependent variable that is Sustainability performance is measured with Environmental, Social, and Governance (ESG) performance. While independent variable that is boardroom professional heterogeneities are proxy by educational heterogeneity and Professional Certification heterogeneity. These variables are referred to as BLAU, BLAUBEDH, and BLAUBPCH in this study, as it utilise the Blau Index as the measurement method. Educational heterogeneity is measure by percentage of board members with different levels of education (the square of the fraction of Bachelor's degree, Master's degree and PhD is added to the Blau calculation.) with the total number of the board members. Professional Certification heterogeneity is measured by percentage of board members with different professional certificates (the square of the fraction of Accounting (ACA, FCA or ACCA), Engineering (COREN) Law (BL), and Finance (ACIB) is added to the Blau calculation).

The Blau Index is used because it considers both group proportions, such as the proportion of education and professional qualifications of board members. Various studies have utilized the Blau Index to measure board diversity (Dobija et al., 2022; Ren and Zeng, 2022). The calculation for the gender diversity variable on corporate boards according to the Blau Index is as follows:

$$BLAU = 1 - \sum p_i^2$$

Where:

BLAU is the board's Blau Index score. P represents the proportion of the group present in the company (educational qualifications and professional qualifications on the board), and i is the number of categories divided between women and men on the board.

Results and Discussion

Test of Hypothesis

In this study, a set of hypotheses were formulated and subsequently tested

Hypothesis One

H₀: Board educational heterogeneity does not have significant effect on Environmental, Social, and Governance (ESG) scores listed manufacturing firms in Nigeria

H₁: Board educational heterogeneity has a significant effect on Environmental, Social, and Governance (ESG) scores listed manufacturing firms in Nigeria

Table 1 Test of Hypothesis 1

Dependent Variable: SPER

Method: Panel EGLS (Period SUR)

Date: 01/09/26 Time: 07:21

Sample: 2015 2024

Periods included: 10

Total panel (balanced) observations: 209

Linear estimation after one-step weighting matrix

Period SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BLAUBEDH	10860.53	399.9257	27.15638	0.0000
C	-6071.444	1054.176	-5.759423	0.0000
Weighted Statistics				
R-squared	0.745335	Mean dependent var		-0.005466
Adjusted R-squared	0.643484	S.D. dependent var		1.645085
S.E. of regression	0.976646	Sum squared resid		398.7043
F-statistic	757.2643	Durbin-Watson stat		2.080402
Prob(F-statistic)	0.000000			

Source: Eviews 10 Output (2026)

The table 1 showed that the coefficient for board educational heterogeneity on corporate sustainability performance is 10,860.53, with a p-value of 0.0000. This suggests a positive effect of board educational heterogeneity on corporate sustainability performance. The marginal effect of this coefficient means that for every unit increase in board educational heterogeneity, corporate sustainability performance increases by 10,860.53 units, which is a substantial effect. Since the p-value is 0.0000, it is statistically significant at the 5% level, indicating that the effect is robust and reliable. Therefore, we can conclude that board educational heterogeneity has a positive and statistically significant effect on corporate sustainability performance. The model validity statistics also support the strength of this model, with an R-squared of 0.7453, indicating that about 74.53% of the variation in corporate sustainability performance is explained by the board educational heterogeneity variable. The Prob (F-statistic) value of 0.0000 also reinforces the validity of the model, as it indicates that the overall model is highly significant. This means that board educational heterogeneity is a strong predictor of corporate sustainability performance, and the model's explanatory power is considerable.

In summary, since p value is less than 0.05, we reject null hypothesis and accept

alternate hypothesis that stated that board educational heterogeneity have significant effect on corporate sustainability performance of selected listed manufacturing firms on Nigeria Exchange Group.

Hypothesis Two

H₀: Board Professional Certification Heterogeneity does not have significant effect on Environmental, Social, and Governance (ESG) scores listed manufacturing firms in Nigeria

H₁: Board Professional Certification Heterogeneity has a significant effect on Environmental, Social, and Governance (ESG) scores listed manufacturing firms In Nigeria

Table 2 Test of Hypothesis 2

Dependent Variable: SPER

Method: Panel EGLS (Period SUR)

Date: 01/09/26 Time: 07:21

Sample: 2015 2024

Periods included: 10

Total panel (balanced) observations: 209

Linear estimation after one-step weighting matrix

Period SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BLAUBPCH	4634.789	368.7612	6.331438	0.0000
C	140.7335	785.9673	0.179058	0.8580
Weighted Statistics				
R-squared	0.569859	Mean dependent var		0.031364
Adjusted R-squared	0.567633	S.D. dependent var		0.651021
S.E. of regression	0.626864	Sum squared resid		164.2568
F-statistic	31.39406	Durbin-Watson stat		1.942442
Prob(F-statistic)	0.000000			

Source: Eviews 10 Output (2026)

The table 2 showed that the coefficient for Board Professional Certification Heterogeneity on Corporate Sustainability performance is 4634.789, with a p-value of 0.0000. The marginal effect of this coefficient suggests that for every unit increase in Board Professional Certification heterogeneity, Corporate Sustainability performance increases by 4,634.789 units. Since the p-value is 0.0000, this effect is statistically

significant at the 5% level. Therefore, Board Professional Certification heterogeneity has a positive and significant effect on Corporate Sustainability performance. The R-squared value of 0.5698 indicates that the model explains approximately 5.69% of the variation in Sustainability performance, which is a moderate level of explanatory power. The Prob (F-statistic) value of 0.000000 further supports the validity of the model, showing that the relationship between Board Professional Certification heterogeneity and Corporate Sustainability performance is statistically significant and not due to random chance.

In summary, since p value is less than 0.05, we reject null hypothesis and accept alternate hypothesis that stated that Board Professional Certification heterogeneity have significant effect on Corporate Sustainability performance of selected listed manufacturing firms on Nigeria Exchange Group.

Discussion of Findings

Finding from the analysis shows that board educational heterogeneity have significant and positive effect on corporate sustainability performance. Educational heterogeneity on the corporate board brings different ideas, perspectives and expertise to the table. This finding is align with studies of Khan et al., (2023); Aguilera et al. (2021); Umukoro et al. (2019); Boadi and Osarfo (2019) that found significant effect of educational heterogeneity on corporate sustainability performance.

The study discovered that Board Professional Certification heterogeneity have significant effect on Corporate Sustainability performance. This finding shows that boards with members holding diverse professional certificates bring specialized knowledge and skills that enhance corporate sustainability performance. This result aligns with previous studies by Amini and Zhang (2022); Gold et al. (2021); Aboramadan (2021) which found that a significant relationship between board professional certification and corporate sustainability performance.

Conclusion and Recommendations

The study concludes that boardroom professional heterogeneities which comprises board educational heterogeneity and board professional certification heterogeneity significantly affects corporate sustainability performance of selected listed manufacturing firms on Nigeria Exchange Group. Based on these findings, the following recommendations were made:

- i. The investor should consider educational heterogeneity in constituting members of their board of directors. Moreover, the management should considered educational diversity in nominating or selecting board of directors.
- ii. The investors and management should considered Professional Certification heterogeneity in constituting board of directors.

References

- Aguilera, R. V., Alvaro C., & Francesco P..(2021). Board functional expertise and firm financial performance:The moderating role of economic downturns. *Strategic Management Journal* 42: 206–34.
- Alfuma, H.O., Musa, S., Gold, N.O. & Usman, M.K. (2021). “Board cognitive diversity and firm performance nexus: Evidence from Nigeria.” *International Journal of Management Innovative and Entrepreneurial Research*, 6(2), 88-97
- Ali, A., Khan, M., & Rehman, R. (2022). The impact of board diversity on innovation: Evidence from emerging markets. *Journal of Business Research*, 142, 567–577.
- Ahmad, M., Dauda, M., & Lemu, S. (2022). Board gender diversity and sustainability reporting quality: Evidence from Nigerian manufacturing firms. *Sustainability*, 14(12), 7234.
- Amini, M., & Fang Z. (2022). Industry-specific human capital and board oversight: Evidence from risk management effectiveness. *Journal of Accounting and Economics* 119: 101445.
- Association of Chartered Certified Accountants (ACCA) (2015), “Diversifying the board – a step towards better governance”, available at:<http://www.accaglobal.com/in/en/student/examsupport-resources/professional-exams-study-resources/p1/technical-articles/diversifying-theboard–a-step-towards-better-governance.html>
- Blanco-Oliver A, Veronesi G, & Kirkpatrick I (2018) Board heterogeneity and organisational performance: the mediating effects of line managers and staff satisfaction. *Journal of Business Ethics* 152(2):393–407
- Bloomberg, (2023). *Bloomberg Environmental Social Governance*. Retrieved from <https://www.bloomberg.com/professional/product/certificate-courses/>
- Boadi I, & Osarfo D. (2019) Diversity and return: the impact of diversity of board members’ education on performance. *Corp Gov (Bingley)* 19(4):824–842.
- Bodolica V, & Spraggon M (2021) Leadership in times of organizational decline: a literature review of antecedents, consequences, and moderators. *Int J Organ Anal* 29(2):415–435
- Boone, L. E., & Maaik A. L. (2018). Boardroom diversity: Why do the board directors’ gender and professional qualifications matter? *Review of Business and Economic Literature* 63: 349–89.
- Ciftci, I., Tatoglu, E., Wood, G., Demirbag, M., & Zaim, S. (2019). Corporate

- governance and firm performance in emerging markets: Evidence from Turkey. *International Business Review*, 28(1), 90–103.
- Dobija, D., Hryckiewicz, A. Zaman, M. & Puławska, K (2022). Critical Mass and Voice: Board Gender Diversity and Financial Reporting Quality. *European Management Journal* 40(1): 29–44.
- Ezeigbo, E. C., Ogbada, E. I., & Okafor, M. C. (2023). Corporate board heterogeneity and firm performance of listed manufacturing firms in Nigeria. *Journal of Research in Management and Social Sciences*, 10(1), 25-32.
- Fernandez-Torres, Y., Gutierrez-Fernandez, M. and Gallego-Sosa, C. (2020), Environmental performance of the tourism sector from a gender diversity perspective, *International Journal of Environmental Research and Public Health*, 18 (16), 8834 - 8847.
- Gold, N.O., Aifuwa, H.O., Usman, M.K., Subair, M.I., Osazevbaru, A. & Oloyede, B.M (2021). Board members education diversity and sustainability reporting. *Annals of Spiru Haret University Economic Series*. 1 (2),253-278
- Harjoto MA, Laksmana I, & Yang Y (2018) Board diversity and corporate investment oversight. *Journal of Business Research*, 90:40–47
- Jebran, K., Chen, S., & Zhang, R. (2020). Board diversity and stock price crash risk. *Research in International Business and Finance*, 51, 101 - 122.
- Khan, I., Khan, I., Khan, I. U., Suleman, S. & Ali, S. (2023). Board diversity on firm performance from resource-based view perspective: new evidence from Pakistan. *International Journal of Productivity and Performance Management* 31(1) 1-28
- Li, W., & He, A. J. (2021). Does cognitive diversity promote firm innovation? Evidence from Chinese listed enterprises. *Asian Business & Management*, 20(3), 326–348.
- Magnanelli, B. S., Paolucci, G., & Pirolo, L. (2021). Diversity in boardrooms and firm performance: The role of tenure and educational level of board members. *Corporate Board: Role, Duties and Composition*, 17(3), 31–41
- Nwaobia, A.N., Kwarbai, J.D., & Ogundajo, G.O. (2016). Board diversity and corporate social responsibility performance: Evidence from Nigeria. *International Journal of Financial Research*, 7(3), 106-118.
- National Environmental Standards and Regulations Enforcement Agency. (2007). *NESREA Act*. Federal Republic of Nigeria.
- Oh, W. Y., Chang, Y. K., & Jung, R. (2019). Board heterogeneity and corporate social

- responsibility: Evidence from Korea. *Sustainability*, 11(6), 1556.
- Oluwatoyin, A.A., Agbi, S.E. & Mustapha, L.O. (2021) Board Characteristics and Sustainability Reporting of Listed Non-Financial Firms in Nigeria. [*Journal of Finance and Accounting*, 9\(5\)](#). 182 – 189.
- Ren, G. & Zeng, P. (2022). Board Gender Diversity and Firms' Internationalization Speed: The Role of Female Directors' Characteristics. *Baltic Journal of Management* 17(1): 72–88.
- Shehata, N., Salhin, A., & El-Helaly, M. (2017). Board diversity and firm performance: Evidence from the U.K. SMEs. *Applied Economics*, 49(48), 4817–4832.
- Serafeim, G. & Yoon, A. (2022). "[Which Corporate ESG News Does the Market React To?](#)," [*Financial Analysts Journal*](#), 78(1), 59-78
- Umukoro, O E., Uwuigbe, O R , Uwuigbe, U , Adegboye, A ., Ajetunmobi, O. & Nwaze, C.(2019). Board Expertise and Sustainability Reporting in Listed Banks in Nigeria. [*IOP Conference Series: Earth and Environmental Science, Volume 331, International Conference on Energy and Sustainable Environment 18–20 June 2019, Covenant University, Nigeria*](#)
- Wagn, Y. H. (2020). Does board gender diversity bring better financial and governance performances? An empirical investigation of cases in Taiwan. *Journal of Sustainability*, 12(8), 3205.
- Wang, Y. H. (2023). The Impact of Top Executive Team Heterogeneity on Firm Performance and Financial Leverage. FMET 2022; Advances in Economics, Business and Management Research, 323 –335.