

## **AI-TECHNOLOGY, GENDER DIVERSE-BOARDS AND WORKPLACE DIVERSITY & EQUAL OPPORTUNITY DISCLOSURE**

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### **Abstract**

This study determines the moderating effect of AI-technology on the impact of gender diverse-boards on workplace D&EO disclosure of companies listed on the Nigeria Exchange Group (NGX). The study used Global Reporting Initiative standard to measure D&EO disclosure variable. The investigation is based on data generated from annual reports and financial statements of companies listed on NGX over a period 2022-2024. It used the system generalized method of moments (GMM) estimation techniques to assess the relationships in order to tackle the potential issue of endogeneity. Findings of the study showed that there is a significant relationship between gender diverse-boards and the level of workplace D&EO disclosure. Specifically, the study found that gender diverse-boards captured by the proportion of female on board and AI-technology measures as technologies assets are positively associated with the level of workplace D&EO disclosure. While the interaction of AI-technology with gender diverse-boards reduces the level of workplace D&EO disclosure. The findings provide insights to regulators, stakeholders and boards on mechanisms that should be deployed to drive transparency on workplace D&EO among Nigerian companies. This study extends the frontier of existing literature by providing evidence on the link between AI-technology and gender diverse-boards with workplace D&EO disclosure. This study indicates that the influence of AI-technology on workplace D&EO disclosure is different from when it is interacted with gender diverse-boards. The paper also provides initial evidence on the significance of use of AI-technology on workplace D&EO disclosure.

**Keywords:** AI-technology, gender diverse-board, disclosure, workplace, diversity, equal opportunity

**JEL Classification:** M14, G34, O33, J16

### **1.0 Introduction**

Workplace diversity and equal opportunity (D&EO) are relevant resources for coordinative and collaborative efforts in streamlining operations, achieving goal congruence, and driving success to promote sustainable development. Previous studies established the importance of artificial (AI)-technologies in realizing workplace D&EO (Johnson et al., 2022; Bogen & Rieke, 2018; Rathore et al., 2022). Workplace inclusion is continuously receiving recognition and attention from stakeholders, policymakers and academia. World Bank Group (2024) report states that AI-technology is igniting interest among policymakers all over the world because it emerges as a strong tool that could unlock opportunities for sustainable development. Across economic sectors, firms extensively deploy AI-technology to advance business processes and operations to achieve corporate objectives. AI-technology is now an integral part of human resource

management and like to bear on workplace D&EO. AI-technologies are capabilities or software of machines which are used to imitate human intelligence that are used by organisations to plan, control and make strategic choices across broad spectrum of functions and responsibilities within business operations (Ronanki & Nguyen, 2023; Morandín-Ahuerma, 2022).

Workplace D&EO are widely promoted and current exclusion gaps are gradually closing. Nigeria is intensely rooted in religious, regional and ethnic diversity, as well as age and gender discrimination which aggravates challenges of reducing inequality in the workplace. As a result, corporate governance structures and regulations continue to evolve to create diverse and inclusive workplaces. With growing global digitalisation, firms are embracing AI-technologies for human resource management and language technologies to improve operational competence and expand workforce administration processes, including platforms such as HCMatrix and other evolving homegrown AI tools (HCMatrix, 2025; World Bank Group, 2024). However, the question that keeps coming up is whether Nigerian companies are exploring technology to align with international best practices to support diversity and promote equal opportunity workplaces? The Diversity, Equity, Inclusion and Belonging (DEIB) initiatives were developed to guarantee fair dealings and equal opportunities for all employees. Nigeria is classified as a nation with high rate of socio-political and religious discrimination coupled with a long history of inter-group pressures and conflicts. Due to the high level of discriminations, stakeholders persistently require companies to be accountable on workplace D&EO. As posited by the International Finance Corporation (2021), there is a persistent discriminatory gap in management, workforce, and the supply chain of companies which leads to lack of income earnings, failure to secure positions, inability to get finance, and access markets.

There are numerous legal provisions enacted to curb discrimination and encourage D&EO including Constitution of Nigeria, 1999, Discrimination Against Persons with Disability (Prohibition) Act, 2018, and HIV and AIDS (Anti-Discrimination) Act 2014. These provisions prohibit discrimination founded on customs, homeland, gender, special needs and abilities, HIV status, or political association. However, application of these laws remains a key challenge as stakeholders persistently cry out for firms to be held accountable for workplace inclusion. This raises the question on whether firms are accountable for D&EO. Corporate disclosure metrics serves as key indicator and source of accountability of firms in responses to socially inclined stakeholders on workforce inclusion strategies (IFC, 2021; World Economic Forum, 2024). Corporate governance emerged as a critical facet of organizational management for influencing performance outcomes and fostering workplace D&EO within corporate structures (Adams and Ferreira, 2009). Firms employ AI-technologies and gender diverse-boards as critical governance tool for control of workplace discrimination. The face of corporate governance is changing as emerging AI-technologies is used to make better decisions on performance management (Yang, Binh, & Young, 2024). Integration of AI-technology is increasingly an indispensable tool for firms to navigate complex regulatory and social landscapes and strive for sustainable growth (Brynjolfsson & McAfee, 2011; Hoberg et al., 2020). AI-technology has become an essential tool for corporate decisions and integral facet of

board process. AI-technology now serves as member of board and board assistant (Eroğlu & Kaya, 2022). Although there is evidence of discrimination and biases in AI-technology system, it remains a critical tool for decisions that affect workplace D&EO (Yang et al., 2024; Ranta & Ylinen, 2023). Studies of Nigeria firms indicate that the use of AI-technologies is at early stage in banking and healthcare sectors citing costs, skills and infrastructure as challenges confronting AI-technology diffusion in these sectors (Olawade et al., 2025; Dantsoho et al., 2021). However, comprehensive multi-sector studies of Nigeria firms are rare to come by. This represents a significant research gap given the imperative role of AI-technologies in firms' business processes.

Gender diverse-boards offer a heterogeneous bundle of skills, competencies, professional experiences, leadership styles, knowledge, and opinions, supporting companies in implementing socially responsible behaviors that gives better disclosure levels for stakeholders' benefit (Issa et al., 2022). A number of empirical studies (Alkhawaja et al., 2023; Sundarasan et al., 2024; Yiming et al., 2024; Alodat et al., 2023; Alodat & Hao, 2024; Arora & Aliani, 2023; Nicolò et al., 2021a; Zampone et al., 2022) indicate that gender diverse-boards improve corporate disclosure. High number of females on boards is associated with higher levels of social responsibility disclosure thereby increasing transparency on social contract with stakeholders. Ranta & Ylinen (2023) show that gender diverse-boards have significant positive connection with gender parity and inclusion workplace culture. Thus, studying the influence of AI-technology and gender diverse-boards on D&EO disclosure provides evidence and clarifies on whether they drive workplace fairness and socially accountable firms. According to stakeholder theory, a firm has the moral obligation to treat stakeholders with dignity which derives corporate reputation, attract talent and reduce risk of litigation. Gender diverse-boards and AI-technologies are aspects of governance instituted in response to legitimate demands of stakeholders for transparency and fairness in workplace (Donaldson & Preston, 1995). Thus, the prominent role of AI-technology and gender diverse-boards are critical drivers of reporting system to provide avenue for building social reports in respond stakeholder agitations for workplace D&EO disclosure.

Prior literature revealed mixed results; for example, Muttakin et al. (2015) and Shamil et al. (2014) found a negative link between board gender diversity and social disclosure. Whereas, Amran et al. (2014) found no relationship between gender diversity and social practices. However, most studies document a positive relationship between gender diversity and social reporting (Javaid Lone et al., 2016; Gul et al., 2017; Majeed et al., 2015; Ibrahim and Hanefah, 2016). On the association between board gender and D&EO disclosure, this study's extensive review of literature indicates very few existing studies. Shohaieb et al. (2022) discovered a positive relationship between board gender D&EO disclosure. The study of Gullkvist et al. (2025) indicated that the use of AI-technology is associated with higher diversity scores and connected with higher employee satisfaction as reliable means of evaluating workplace diversity. While there are a couple of studies from developed economies, D&EO disclosure studies are largely overlooked in emerging markets despite the urgent calls by stakeholders for decreased workplace inequality and the need to improve social justice. Stakeholder theoretical framework is widely used for board composition studies, but this does not include use of AI-

technology in firm decisions particularly on workplace D&EO disclosure (Nicolò et al., 2021a; Zampone et al., 2022; Tingbani et al., 2020; Eroğlu & Kaya, 2022; Köseoglu et al., 2025). This study predicts that the interaction of the use of AI-technology and gender diverse-boards could increase the level of transparency and accountability of workplace D&EO of firms. Thus, the study contributes to theory and closes the existing empirical gap on how AI-technologies affect D&EO disclosure rather than corporate social responsibility in general. The findings provide critical information to regulators in developing frameworks for AI-technology governance and law; and gender diversity. Based on the aforementioned, this paper examines the influence of gender diverse boards and AI-technology on D&EO disclosure by NGX listed firms.

The remaining sections of the paper are organized as follows: The review of literature and development of hypotheses, which reviews related literature on the relationships among AI-technology, gender diverse-board, and workplace D&EO disclosure; followed by the methodology section; then analysis, results, and discussion; and the final section concludes the paper.

## **2.0 Literature and Development of Hypotheses**

This section of the paper reviews related literature and develops hypotheses on board of directors' gender diversity and workplace inclusion disclosure.

### **Gender Diverse-Board and Workplace D&EO Disclosure**

Among the several factors indicating diverse dimensions of the corporate board, board diversity is the most important emerging dimension in corporate governance (Chen et al., 2025; Khan et al., 2019; Ibrahim & Hanefah, 2016). According to Issa et al. (2022), board of directors' gender diversity offers a heterogeneous bundle of skills, competencies, professional experiences, leadership styles, knowledge, and opinions, supporting companies in implementing socially responsible behaviors that gives better disclosure levels for stakeholders' benefit. Jibril et al. (2022), Jibril et al. (2024a), Jibril et al. (2024b) argue that board of directors' gender diversity (the proportion of women on boards) is a critical governance structure that influences the degree of corporate disclosure. The existence of female board members plays a significant role in enhancing the quality of financial data, thereby endorsing good governance culture. There are very few studies that link gender diverse-boards and narrowly focus workplace D&EO disclosure. García-Sánchez et al. (2024) and Shohaieb (2021) revealed that high board of directors' gender diversity is positively related to diversity and equal opportunity disclosure. In an in firm studies, Ranta & Ylinen (2023) discovered strong relationship between gender diversity and workplace D&EO. Some ESG disclosure studies (see Khemakhem et al., 2022; Wasiuzzaman & Subramaniam, 2023) with workplace D&EO as sub-dimension, also found that consistent results. Whereas most empirical evidence focus on influence of gender diverse boards on broad corporate disclosure. For instance, Khan et al. (2019) found that the board of directors' gender diversity is an important resource, likely to promote information disclosure. Alkhawaja et al. (2023), Jibril et al. (2022), Jibril et al. (2024a, 2024b), Nicolò et al. (2021b), Zampone et al. (2022), Khan et al. (2019), and Al-Qahtani & Elgharbawy (2020), found a positive relationship between gender diversity

and disclosure of ESG information. The findings of Peng et al. (2022), Beji et al. (2020), Amorelli & García-Sánchez (2019), Khan et al. (2019), Katmon et al. (2017) revealed highly significant positive association between gender diverse-boards and CSR disclosure. However, Issa et al. (2022) discovered contrary findings between gender diverse-boards and CSR information. These empirical evidences indicate that gender diverse-boards is positively associated with workplace D&EO disclosure. Hence, hypothesis one (H1) is stated:

H1: Gender diverse-board positively improves workplace D&EO disclosure.

### **AI-technology and Workplace D&EO Disclosure**

Although AI-technology is an evolving area and current researches have conceptualized it based on its roles in business processes. To Kim & Bodie (2021), AI-technology is a composition of systems that use data-rich inputs and computational techniques (such as machine learning, algorithmic decision-making, and automated decision-making) to come up with predictions that help or change human decision-making in enrolment, appointment, and upgrade, which meaningfully affects access to employment prospects. Additionally, Russell and Norvig, (2021) said that AI-technology is a field of science and technology that creates intelligent machines that have the ability and capacity to copy human behaviour. Furthermore, **Brynjolfsson and McAfee, (2017)** indicated that AI-technology imitates human reasoning abilities that analyse and automate activities in different fields. Moreover, IEEE-USA (2017) contended that AI-technology entails machines doing responsibilities of forecasting, recognition, explanation, and communication just like humans do. Today, firms are gradually implementing AI-technology to automate business operations in order to regulate and enhance operational performance, supply chain movement, and supply of data (McKinsey & Company, 2022).

Recent years have witnessed remarkable growth in cognizance, investment, and use of AI-technology by firms (PricewaterhouseCoopers [PwC], 2025). However, AI-technology uses and implementation is faced with problems. Critical among these problems is that fact that the black-box nature of AI-technology has made it hard for its users to comprehend how it comes up with accounting-relevant information (Zhang et al., 2022). In addition, when AI-technology systems, are programmed wrongly, it generates biased information (Munoko et al., 2020; Deloitte, 2022). Moreover, limited studies have examined the association that exists between AI-technology and disclosure of social information. For example, Anantharaman et al. (2023) investigated the use of AI-technology by businesses and found that its adoption results in an enhanced information transparency in US firms. In the same vein, Gullkvist et al. (2025) examined workplace diversity disclosures of S&P 500 firms from 2019 to 2022 using a large language model (LLM) to conduct large-scale content analysis and identify key dimensions of workplace diversity. Their findings indicated that LLMs offers an accessible, reliable, and scalable approach for analyzing unstructured corporate ESG disclosures. Grüning (2011) examined the use of AI-technology for measuring disclosure of corporate voluntary disclosure and found that AI-technology is inversely related to information disclosure asymmetry. Al-Okaily (2024) estimates the impact of AI-technology on the quantity and quality of accounting

information disclosure by firms in Jordan and discovered that AI-technology envisages the quantity and quality of accounting disclosure. Hence, this study contributes to the inadequate understanding of how AI-technology determines workplace diversity and equal opportunity disclosure, leading to the following hypothesis:

H2: AI-technology positively improves workplace D&EO disclosure.

H3: AI-technology positively influences the relationship between gender diverse-board and workplace D&EO disclosure.

### **Theoretical Underpinning**

Previous studies on social disclosure are mostly underpinned by legitimacy and resources dependency theories. This study takes a different path, we use the stakeholder theory because it provides better explanation of how governance structure influences social disclosure outcomes (Shelkova & Panchuk, 2024; Fayyaz et al., 2022). The framework is much used in corporate board studies (Jibril & Isa, 2025). However, the emergence of AI-board member makes the use stakeholder theory in AI-technologies studies relevant and adequate. Thus, the relationship between the use of AI-technology as interaction in studies of gender diverse-board and workplace D&EO disclosure introduces a new dimension to the theory. There are existing studies that connect board gender to social disclosure which are mostly underpin by legitimacy or resource dependency theory, however, we could not locate any study that explicitly integrate the use of AI-technology with workplace D&EO disclosure. Gender diverse-boards are considered one the governance structure that stakeholders expect to drive transparency to respond to social agitations (Manita et al., 2018; Nicolò et al., 2021a; Zampone et al., 2022; Tingbani et al., 2020; Liao et al., 2015; Mintah et al., 2025) and ensure balanced non-financial information to multiple stakeholders. (Nicolò et al., 2021a; Zampone et al., 2022; Tingbani et al., 2020). Thus, stakeholder theory alone is adequate to underpin this study.

In the study of Eroğlu & Kaya (2022), they predicted the influence of AI-technologies and gender diverse-board outside the framework of stakeholder theory. And there is no one study that combines the two variables in social disclosure practice under stakeholder theory. Existing studies (see Manita et al., 2018; Alkhawaja et al., 2023; Nicolò et al., 2021a; Zampone et al., 2022; Jibril et al. 2024b; Yiming et al., 2024; Helfaya et al., 2025; Paolone et al., 2024) examine environmental, social and governance disclosure in aggregate without dedication to D&EO as a focus. Stakeholder theoretical framework is widely used in board composition studies but not extended to the use of AI-technology in firm choices including on quantity and quality of workplace D&EO disclosure (Nicolò et al., 2021a; Zampone et al., 2022; Tingbani et al., 2020; Eroğlu & Kaya, 2022; Köseoglu et al., 2025). Therefore, this study is based on stakeholder theory to examine the influence of AI-technology and gender diverse-boards on workplace D&EO disclosure. The role of AI-technology in stakeholder theory provide new insight on how gender diverse-board could drive in transparent workplace D&EO and stakeholder trust within emerging technologies in governance (Fayyaz et al., 2022; Shelkova & Panchuk, 2024; Eroğlu & Kaya, 2022). The study contributes to theory and clearly closes the

existing gap by including how these technologies affect D&EO disclosure rather than ESG in general.

### 3.0 Methodology

Quantitative research design is adopted to test the hypotheses in this study (Creswell, 2014; Saunders et al., 2019). A sample of 145 (financial and non-financial) companies listed on the Nigerian Exchange Group (NGX) is used out of a population of 155. The ten companies were dropped because they did not publish the required data across the financial years (2022-2024). The sources of data for the study are the annual reports and accounts of the selected companies. Data for D&EO disclosure were generated through content analysis (Ozdora-Aksak & Atakan-Duman, 2016; Hummel & Szekely, 2022, Isa, 2019; Zampone et al., 2024) of governance reports published by the firms. The financial data were extracted from the financial statements.

#### Measurement of Variables

The dependent variable in this study is workplace D&EO disclosure measured and constructed based on GRI standard of 2023. Although, GRI is tipped for relevance and commonly used for voluntary disclosure (Issa et al., 2022). A six-item checklist (this includes gender diversity, age groups, minority and vulnerable groups in governance bodies as well as in employees in organisation) was developed based on GRI-405 for D&EO disclosure. These items are measured on a scale of 0–3: 0 = non-disclosure, 1 = low, 2 = fair, 3 = good, to measure levels of D&EO disclosure (Jibril & Isa, 2025; Ali et al., 2021). AI-technology was measured as sum of technology assets for AI-technology scaled by total assets (Yu & Zhang, 2024). Technology assets include high-speed internet, cloud computing facilities, data storage capacity, AI tools and computer servers. Financial measure of AI-technology is considered more relevant and reliable (Kythreotis & Soltani, 2023). Board gender (BDG) is measured as the proportion of female directors on corporate boards (Velte, 2018; Jibril & Isa, 2025; Jibril et al., 2024b; Jibril et al., 2022).

To develop the estimation model, additional board and firm attribute variables extensively used in prior studies were introduced to reduce the risk of endogeneity problems (Jibril et al., 2024a; Ranta & Ylinen, 2023; Isa, 2019; Isa & Muhammad, 2015; Isa, 2014a; Isa, 2014b). The control variables include board size, board independence, board diligence, firm size, firm age, and labor intensity. The measurements of the variables are presented in Table 1.

**Table 1: Measurement of Variables**

Variable	Category	Measurement	Source
<b>Workplace D&amp;EO Disclosure (DEO)</b>	Dependent	GRI 405 (1-6)	GRI, 2023
<b>AI-technology (AIT)</b>	Moderator	Natural log of total assets of the soft (computer software) assets	(Yu & Zhang, 2024)
<b>Board Gender</b>	Independent	Proportion of female	Velte (2018); Jibril & Isa (2025); Jibril et al.

<b>(BDG)</b>		directors on board	(2024a)
<b>Board Size (BDS)</b>	Control	Number of directors on the boards of the firms	Isa (2014a), Shohaieb et al. (2023)
<b>Board Independence (BDI)</b>	Control	Proportion of non-executive directors on boards of the firms	Ranta & Ylinen (2023)
<b>Board Diligence (BDD)</b>	Control	Number of meetings held by the boards in a financial year	Khan et al. (2019)
<b>Firm Size (FMS)</b>	Control	Natural log of total assets of a firm	Isa (2014a), Isa (2014b), Isa & Muhammad (2015)
<b>Firm Age (FMA)</b>	Control	Natural log of number of years of firm's operation	Isa (2019), Jibril & Isa (2025); Issa et al. (2022)
<b>Labor Intensity (LIN)</b>	Control	Ratio of total employee costs to total fixed assets	Hitt et al. (2001); Datta et al. (2005)

### Predictive Econometric Models

To examine the hypotheses and determine if board of directors' diversity influences diversity and equal opportunity disclosure and the moderating effects of AI-technology, this research empirically used the Generalized Method of Moments (GMM) estimator. This estimation method is implemented because past researches recognised that corporate governance mechanisms are disposed to endogeneity problems in result estimations (Bhuiyan & D'Costa, 2020; Issa et al., 2022; Jibril & Isa, 2025). The GMM method is strong in handling endogeneity issues (Arellano & Bond, 1991; Blundell & Bond, 1998). This study uses a sample of 145 listed firms in Nigeria over three financial (2022–2024) period and 435 financial observations. This is suitable for the use of GMM technique (Roodman, 2009). To determine the moderating effects of AI-technology, Baron & Kenny's (1986) hierarchical regression technique is used, consistent with prior literature (Bala et. al, 2025). The econometric models are presented as follows:

$$WDEOD = \beta_0 + \beta_1AIT_{it} + \beta_2BDG_{it} + \lambda_4BDS_{it} + \lambda_5BDI_{it} + \lambda_6BDD_{it} + \lambda_7FMS_{it} + \lambda_8FMA_{it} + \lambda_9LIN_{it} + \epsilon_{it} \quad (1)$$

$$WDEOD = \beta_0 + \beta_1AIT_{it} + \beta_2BDG_{it} + \lambda_4BDS_{it} + \lambda_5BDI_{it} + \lambda_6BDD_{it} + \lambda_7FMS_{it} + \lambda_8FMA_{it} + \lambda_9LIN_{it} + \beta_{10}AIT_{it} * BDG_{it} + \epsilon_{it} \quad (2)$$

### 4.0 Results and Discussion

The descriptive statistics results of the variables are presented in Table 2. It shows that workplace D&EO disclosure has an average score of 0.284. The maximum and minimum

disclosure scores are 1.486/3 and 0.284/3, respectively. On the scale of 0-3, the average score indicates low compliance with GRI standards. The result of AI-Technology indicates an average of 0.1/1 with maximum of 0.98/1 and minimum of 0.00/0. For gender diverse-board, the results show an average of 0.219. The maximum and minimum are 0.67/1 and 0.00/0 respectively. The results imply that the use of AI-technology in decision making process is still at the rudiment among the firms. The corporate boards are less gender diverse although there are firms with up to two-third (67%) female members for the highest observed among the firm. The board-level controlled variables include board-size, board-independence and board-diligence. The results show an average statistic of nine members (9.362) with a minimum and maximum of four and twenty-one members for the smallest and largest boards respectively. The results further show that 6 out of every 10 board members are non-executive directors. The least and the highest board compositions are 2/10 and highest is 9/10 non-executive directors respectively. For board diligence measured by number of meetings, the boards held an average of five meetings above the statutory minimum of four although the results indicate that firms held as low as three and as high frequency as ten per annum.

The firm-level controlled variables include firm size, firm age and labour intensity. The results show an average of 8.5 (approximate equivalent of ₦4.9 billion) with a least of 5.00 and as high as 11.90. In terms of firm age, the results indicate an approximate average age of 37.5 years (1.50) with a minimum of 4 years and maximum and 92 years. For labour intensity, the results show that the average value is 0.20 with minimum and maximum of 0.00 and 0.96 respectively. The average value indicates that firms' production and business activities are largely automated. The skewness and kurtosis values below the threshold 3 and 10 respectively and are not regarded as having outliers. As such, these are regarded within normal range (Jibril et al., 2022; Jibril et al., 2024a; Jibril et al., 2024b).

**Table 2: Descriptive Statistics**

Variable	Observation	Min	Max	Mean	SD	Skewness	Kurtosis
WDEOD	435	0.000	1.486	0.284	0.188	2.132	8.532
AIT	435	0.000	0.982	0.097	0.201	2.751	7.252
BDG	435	0.000	0.667	0.219	0.200	0.492	2.937
BDS	435	4.000	21.000	9.362	9.000	0.646	3.859
BDI	435	0.200	0.917	0.612	0.151	-0.258	-0.320
BDD	435	0.300	10.000	4.878	1.246	1.246	1.323
FMS	435	5.000	11.895	8.481	8.292	0.177	2.139
FMA	435	0.602	1.886	1.503	1.525	-0.657	2.773
LBI	435	0.000	0.960	0.201	0.234	1.302	0.842

**Table 3: Correlation Matrix**

Variable	AIT	BDG	BDS	BDI	BDD	FMS	FMA	LBI
<b>AIT</b>	1							
<b>BDG</b>	0.039	1						
<b>BDS</b>	0.161	-0.004	1					
<b>BDI</b>	-0.095	0.09	0.102	1				
<b>BDD</b>	-0.089	0.069	0.162	0.037	1			
<b>FMS</b>	0.41	-0.187	0.118	-0.19	-0.014	1		
<b>FMA</b>	0.066	0.136	0.046	-0.058	0.086	-0.08	1	
<b>LBI</b>	-0.106	-0.037	0.061	0.006	0.064	0.019	0.237	1

**Table 4: Dynamic Panel-Data Estimation, One-Step System GMM**

diversity and equal opportunity disclosure (WDEOD)				
	Direct (Model 1)		Indirect (Model 2)	
DEOD	Coef.	p-value	Coef.	p-value
AIT	0.000	0.030**	0.240	0.001***
BDG	0.370	0.000***	0.419	0.000***
AITBDG			-0.362	0.000***
BDS	0.017	0.000***	0.018	0.000***
BDI	0.044	0.215	0.045	0.212
BDD	0.005	0.000***	0.004	0.000***
FMS	-0.015	0.002**	-0.014	0.006**
FMA	-0.096	0.000***	-0.088	0.000***
LBI	0.004	0.000***	0.004	0.000***
CONS	0.235	0.001**	0.187	0.009**
prob>chi2	0.000***		0.000***	
Wald chi2	3163.88		3145.34	

AR1 (p-value)	0.001		0.001	
AR2 (p-value)	0.077		0.127	
No. of groups	93		93	
No. of instruments	14		19	
<i>Source:</i> Authors' computation using Stata output.				

*Note:* DEOD is dependent variable. Gender diverse-boards and AI-technology are explanatory variables (independent, moderator and control). \*p < .10; \*\*p < .05; \*\*\*p < .01. *Source:* Authors' computation using Stata version 14.

### Regression Analysis

Table 4 presents the regression outcomes using the one-step system GMM estimator, useful to control for potential endogeneity problems among the variables (Arellano & Bond, 1991; Blundell & Bond, 1998; Roodman, 2009). The diagnostic test results are presented at the bottom of the table. The statistics for the first difference AR (1) (0.001 and 0.077) and second difference AR (2) (0.001 and 0.127) of Models 1 and 2 are significant and insignificant, respectively, demonstrating no serial relationship in first and second-order differences. The Hansen test statistics validates the instruments uncorrelated with the residuals. At each model, the number of groups is greater than the number of instruments, confirming the validity of the result estimations.

On the association between the use of AI-technology and workplace D&EO disclosure, the results show a significant positive relationship ( $\beta = 0.000$ ,  $p = 0.030$ ) in Model 1 and ( $\beta = 0.240$ ,  $p = 0.001$ ) in Model 2. This finding show that the use of AI-technology makes the firms to become more transparent and accountable to stakeholders on D&EO through disclosure of workplace information. This result is consistent with the findings of Grüning (2011), Al-Okaily (2024), and Gullkvist et al. (2025). They discovered that the use of AI-technology enhances social disclosure among firms. The first hypothesis (H1) which predicting a significant positive relationship between the use of AI-technology in decision making processes promotes workplace D&EO disclosure is supported.

The results show that gender diverse-boards has a significant positive connection ( $\beta = 0.370$ ,  $p = 0.000$ ) in Model 1 and ( $\beta = 0.419$ ,  $p = 0.000$ ) in Model with workplace D&EO disclosure, showing that female board members influence the disclosure of D&EO information, a non-financial component of ESG disclosure on firms in Nigeria. This finding aligns with Shohaieb et al. (2022), who found a positive correlation between female directors and diversity management disclosure, and Jibril & Isa (2025), who found a significant positive impact of gender diversity on occupational health and safety disclosure. It also aligns with Kilincarslan et al. (2020), Tseng et al. (2020), Jibril et al. (2022), Jibril & Isa (2025), who established a significant positive impact of gender diversity on ESG disclosure. This result is inconsistent with the findings of Issa et al. (2022) who discovered that gender diverse-boards are negatively associated with social disclosure. Hence, the second hypothesis (H2) that predicts a significant

positive relationship between gender diverse-boards and workplace D&EO disclosure is supported. On the interaction between the use of AI-technology and gender diverse-boards, the results show significant negative coefficient ( $\beta = -0.362$ ,  $p = 0.000$ ). Hence, the third hypothesis (H3), which presumes positive moderating influence of the use of AI-technology is not supported by the results. This result implies that the use of AI-technology by gender diverse-boards reduces transparency and accounting of firms to stakeholders on workplace D&EO.

## **5.0 Conclusion**

This research determines if AI-technology influences the relationship between gender diverse-boards and D&EO disclosure of listed firms (financial and non-financial) operating in Nigeria. The outcome indicates that compliance with GRI standards on D&EO disclosure is poor, indicating non-disclosure. Grounded by stakeholder theory, it is maintained that AI-technology interaction with gender diverse-boards could influence workplace D&EO disclosure in responding to stakeholder demand for workplace D&EO accountability. One-step system GMM estimation techniques was applied to 145 listed firms in Nigeria over the period between 2022–2024 to determine the influence AI-technology and gender diverse-boards interaction on workplace D&EO reporting. The findings of this study align with the assumptions of stakeholder theory which postulates that the use of AI-technology in gender diverse-boards is critical to transparency and accountability capable of enhancing corporate reporting outcomes that renders firms more accountable to stakeholders' demand for workplace D&EO.

However, the results of this study shows that the interaction effect is adverse contrary to expected outcome proposed by stakeholder theory, because AI-technology driven interaction with gender diverse-boards reduces workplace D&EO disclosure. The reason for the adverse outcome could be the lack of appropriate use of AI-technology tools or lack of inadequate expertise in the use of AI-technologies amongst female directors compared to male counterparts. Hence, we suggest that the choice to bring on board female directors should include appropriate knowledge and experience in the use of AI-technologies. Future studies can address this by evaluating the appropriateness of AI-technologies and female directors' AI-technologies' knowledge and experience. This empirical finding provides practical implications for stakeholders and policymakers. The Nigerian Code of Corporate Governance 2018 which inspires and promotes diversity of boardrooms should be revised to advance AI-technology boards while firms should develop AI-technology policy in line with their strategic objectives. Regulators should provide appropriate initiatives to support regular board drills for AI-technology skills.

The finding of this research offers valuable theoretical insights on the prepositions of stakeholder theory by providing AI-technology as a dimension in predicting disclosure outcomes which previous studies rarely provide. Like other empirical studies, this study is limited and provides potentials for further studies. The explanatory variables should include other boardroom attributes with corporate AI-technology policy and governance. AI-technology governance and policy data were not readily available from the annual reports.

Hence, future studies could consider such in assessing workplace D&EO disclosure. Future studies could partition data based financial and non-financial for comparative analysis due to differences in governance structure and regulations.

## References

- Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), 291–309. <https://doi.org/10.1016/j.jfineco.2008.10.007>
- Ali, W., Frynas, J. G., & Mahmood, Z. (2021). Determinants of corporate social responsibility disclosure in developed and developing countries: A literature review. *Corporate Social Responsibility and Environmental Management*, 24(4), 273–294. <https://doi.org/10.1002/csr.1410>
- Alkhawaja, A., Alsaad, A., & Alhabshi, S. M. (2023). Board gender diversity and sustainability disclosure: Evidence from emerging markets. *Corporate Governance: The International Journal of Business in Society*, 23(5), 1012–1031. <https://doi.org/10.1108/CG-09-2022-0365>
- Alkhawaja, A. A., Hu, F., Johl, S., & Nadarajah, S. (2023). Board gender diversity, quotas, and ESG disclosure: Global evidence. *International Review of Financial Analysis*, 89, 102823. <https://doi.org/10.1016/j.irfa.2023.102823>
- Alodat, A. Y., & Hao, Y. (2024). Board gender diversity and ESG disclosure quality: International evidence. *Journal of Cleaner Production*, 435, 140512. <https://doi.org/10.1016/j.jclepro.2023.140512>
- Alodat, A. Y., Salleh, Z., & Hashim, H. A. (2023). Gender-diverse boards and sustainability disclosure practices. *Sustainability Accounting, Management and Policy Journal*, 14(6), 1321–1345. <https://doi.org/10.1108/SAMPJ-10-2021-0401>
- Al-Okaily, A. (2024). AI-technology and accounting information disclosure quality: Evidence from Jordan. *International Journal of Accounting Information Systems*. Advance online publication.
- Al-Qahtani, M., & Elgharbawy, A. (2020). The effect of board diversity on disclosure and management of greenhouse gas information: Evidence from the United Kingdom. *Journal of Enterprise Information Management*, 33(6), 1557–1579. <https://doi.org/10.1108/JEIM-03-2020-0087>
- Amorelli, M., & García-Sánchez, I. (2019). Critical mass of female directors, human capital, and stakeholder engagement by corporate social reporting. *Corporate Social Responsibility and Environmental Management*, 26(1), 1–16. <https://doi.org/10.1002/csr.1793>
- Amran, A., Lee, S. P., & Devi, S. S. (2014). The influence of governance structure and strategic corporate social responsibility toward sustainability reporting quality. *Business Strategy and the Environment*, 23(4), 217–235. <https://doi.org/10.1002/bse.1767>

- Anantharaman, D., Kokina, J., & Vasarhelyi, M. A. (2023). AI-technology adoption and corporate transparency: Evidence from U.S. firms. *Contemporary Accounting Research*. Advance online publication. <https://doi.org/10.1111/1911-3846.12850>
- Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, 58(2), 277–297. <https://doi.org/10.2307/2297968>
- Arora, P., & Aliani, K. (2023). Board gender diversity and voluntary disclosure practices: Evidence from listed firms. *International Journal of Disclosure and Governance*, 20(3), 245–262. <https://doi.org/10.1057/s41310-023-00178-4>
- Bala, H., Jibril, R. S., & Isa, M. A. (2025). Corporate governance mechanisms and sustainability disclosure: The moderating role of digital technology. *Journal of Accounting and Sustainability*, 9(1), 55–78.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. <https://doi.org/10.1037/0022-3514.51.6.1173>
- Beji, R., Yousfi, O., Loukil, N., & Omri, A. (2020). Board diversity and corporate social responsibility: Empirical evidence from France. *Journal of Business Ethics*, 173(1), 133–155. <https://doi.org/10.1007/s10551-020-04522-4>
- Bhuiyan, M. B. U., & D’Costa, M. (2020). Corporate governance and firm performance: Evidence from emerging markets. *Journal of Accounting in Emerging Economies*, 10(4), 567–589.
- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143. [https://doi.org/10.1016/S0304-4076\(98\)00009-8](https://doi.org/10.1016/S0304-4076(98)00009-8)
- Bogen, M., & Rieke, A. (2018). *Help wanted: An examination of hiring algorithms, equity, and bias*. Upturn. <https://www.upturn.org/reports/2018/hiring-algorithms/>
- Brynjolfsson, E., & McAfee, A. (2017). *The business of AI-technology: What it can—and cannot—do for your organization*. *Harvard Business Review*, 95(4), 3–11.
- Brynjolfsson, E., & McAfee, A. (2011). *Race against the machine: How the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy*. Digital Frontier Press.
- Chen, J., Dedman, E., Kim, J. R., Metwally, T., & Stark, A. W. (2025). Board nationality diversity and firm value. *British Journal of Management*, 36(2), 762–780. <https://doi.org/10.1111/1467-8551.12853>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
- Dantsoho, M. A., Ringim, K. J., & Kura, K. M. (2021). The relationship between artificial intelligence (AI) quality, customer preference, satisfaction and continuous usage

- intention of e-banking services. *Indonesian Business Review*, 4(1), 24-43. <https://doi.org/10.21632/ibr.4.1.24-43>
- Datta, D. K., Guthrie, J. P., & Wright, P. M. (2005). Human resource management and labor productivity: Does industry matter? *Academy of Management Journal*, 48(1), 135–145.
- Deloitte. (2022). *State of AI in the enterprise (5th edition)*. Deloitte Insights. <https://www2.deloitte.com>
- Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, 20(1), 65–91. <https://doi.org/10.5465/amr.1995.9503271992>
- Eroğlu, G., & Kaya, T. (2022). Artificial intelligence as a board member and board assistant. *Journal of Corporate Governance Research*, 6(2), 45–62.
- Fayyaz, A., Chaudhry, I. S., & Fiaz, M. (2022). Stakeholder pressure and sustainability disclosure: A stakeholder theory perspective. *Sustainability*, 14(9), 5312. <https://doi.org/10.3390/su14095312>
- Federal Republic of Nigeria. (1999). Constitution of the Federal Republic of Nigeria 1999 (as amended).
- García-Sánchez, I., Marín-Hernández, S., Ortiz-Martínez, E., & Aibar-Guzmán, B. (2024). Diversity, equity, and inclusion reporting in European Union companies: The role of female directors and the European regulatory framework. *Business Strategy and the Environment*, 33(4), 1850–1867. <https://doi.org/10.1002/bse.3854>
- Global Reporting Initiative. (2023). *GRI 405: Diversity and equal opportunity 2023*. <https://www.globalreporting.org>
- Grüning, M. (2011). AI-technology and disclosure measurement: Evidence from corporate reporting. *Journal of Intellectual Capital*, 12(2), 280–295. <https://doi.org/10.1108/14691931111123471>
- Gul, F. A., Srinidhi, B., & Ng, A. C. (2017). Does board gender diversity improve the informativeness of stock prices? *Journal of Accounting and Economics*, 51(3), 314–338. <https://doi.org/10.1016/j.jacceco.2011.01.005>
- Gullkvist, B. M., Bao, J., & Vasarhelyi, M. (2025). Examining corporate mandatory workplace diversity disclosure using large language models. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.5210341>
- HCMatrix. (2025). *AI-powered HR automation for workforce management in Nigeria*. <https://hcmatrix.com>
- Helfaya, A., Moussa, T., & Whittington, M. (2025). ESG disclosure quality and corporate governance mechanisms. *Business Strategy and the Environment*, 34(1), 89–110. <https://doi.org/10.1002/bse.3901>

- Hitt, M. A., Bierman, L., Shimizu, K., & Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance. *Academy of Management Journal*, 44(1), 13–28.
- Hoberg, G., Li, Y., & Phillips, G. M. (2020). Internet access and U.S.–China innovation competition (Working Paper No. 28231). National Bureau of Economic Research. <https://doi.org/10.3386/w28231>
- Hummel, K., & Szekely, M. (2022). Disclosure on the sustainable development goals—evidence from Europe. *Accounting in Europe*, 19(1), 152–189. <https://doi.org/10.1080/17449480.2021.1964750>
- Ibrahim, A. H., & Hanefah, M. M. (2016). Board diversity and corporate social responsibility in Jordan. *Journal of Financial Reporting and Accounting*, 14(2), 279–298. <https://doi.org/10.1108/JFRA-06-2015-0065>
- IEEE-USA. (2017). *AI-technology: An IEEE-USA overview*. <https://ieeusa.org>
- International Finance Corporation. (2021). *Gender equality in Nigeria's private sector: A gender gap assessment of the 30 most capitalized companies listed on the Nigerian Exchange (NGX)*. World Bank Group. <https://www.ifc.org/en/insights-reports/2021/gender-equality-in-nigerias-private-sector-nigeria2equal>
- Isa, M.A. (2014a). Sustainability Reporting among Nigeria Food and Beverages Firms, *International Journal of Agriculture and Economic Development*, 2(1), 1-9.
- Isa, M.A. (2014b). Determinants of Accounting Choice of Noncurrent Assets at IFRS First Adoption among Nigerian Firms, *Procedia- Social and Behavioral Sciences*, 164, 378–383.
- Isa, M. A., & Muhammad, B. (2015). Board attributes and corporate outcomes in developing economies. *Journal of Accounting and Finance Studies*, 3(2), 45–62.
- Isa, M. A. (2019). The Effects of Independent Audit Committee on the Accounting Policy Decisions of Nigerian Firms. *Journal of Accounting and Finance in Emerging Economies*, 5(2), 203-214. <https://doi.org/10.26710/jafee.v5i2.825>
- Issa, A., Zaid, M. A., Hanaysha, J. R., & Gull, A. A. (2022). An examination of board diversity and corporate social responsibility disclosure: Evidence from banking sector in the Arabian Gulf countries. *International Journal of Accounting & Information Management*, 30(1), 22–46. <https://doi.org/10.1108/IJAIM-07-2021-0131>
- Javaid Lone, E., Ali, A., & Khan, I. (2016). Corporate governance and corporate social responsibility disclosure: Evidence from Pakistan. *Corporate Governance*, 16(5), 785–797. <https://doi.org/10.1108/CG-05-2016-0100>
- Jibril, R. S., & Isa, M. A. (2025). Corporate board diversity, environmental compliance, and occupational health and safety disclosure for achieving sustainable development goals in an emerging economy. *Sustainable Development*, 33(1), 652–667. <https://doi.org/10.1002/sd.2870>

- Jibril, R. S., Isa, M. A., & Maigoshi, Z. S. (2022). Corporate board gender, institutional strength and energy disclosure in Nigeria. *Journal of Chinese Economic and Foreign Trade Studies*, 15(3), 316–331. <https://doi.org/10.1108/JCEFTS-02-2022-0012>
- Jibril, R. S., Isa, M. A., Hamid, K. T., & Maigoshi, Z. S. (2024a). Audit committee attributes, board of director's independence and energy disclosure for environmental sustainability in Nigeria. *International Journal of Innovation Science*, 16(2), 391–419. <https://doi.org/10.1108/IJIS-07-2022-0130>
- Jibril, R. S., Isa, M. A., Maigoshi, Z. S., & Hamid, K. T. (2024b). Corporate board attributes, institutional strength and energy disclosure practices for controlling greenhouse gas emissions in Nigeria. *Journal of Environmental Accounting and Management*, 12(2), 201–219. <https://doi.org/10.5890/JEAM.2024.06.008>
- Johnson, R. D., Stone, D. L., & Lukaszewski, K. M. (2022). *AI-technology and public human resource management: Questions for research and practice*. *Public Personnel Management*, 51(4), 1–22. <https://doi.org/10.1177/00910260221126498>
- Katmon, N., Mohamad, Z. Z., Norwani, N. M., & Farooque, O. A. (2017). Comprehensive board diversity and quality of corporate social responsibility disclosure: Evidence from an emerging market. *Journal of Business Ethics*, 157(2), 447–481. <https://doi.org/10.1007/s10551-017-3672-6>
- Khan, I., Khan, I., & Senturk, I. (2019). Board diversity and quality of CSR disclosure: Evidence from Pakistan. *Corporate Governance: The International Journal of Business in Society*, 19(6), 1187–1203. <https://doi.org/10.1108/CG-12-2018-0371>
- Khemakhem, H., Arroyo, P., & Montecinos, J. (2022). Gender diversity on board committees and ESG disclosure: Evidence from Canada. *Journal of Management and Governance*, 27, 1397–1422. <https://doi.org/10.1007/s10997-022-09658-1>
- Kilincarslan, E., Elmagrhi, M. H., & Li, H. (2020). Corporate governance and corporate social responsibility disclosure: Evidence from emerging markets. *Journal of Business Research*, 115, 290–301. <https://doi.org/10.1016/j.jbusres.2020.01.013>
- Kim, P. T., & Bodie, M. T. (2021). *AI-technology and the challenges of workplace discrimination and privacy*. *ABA Journal of Labor & Employment Law*, 35(2), 289–315.
- Köseoglu, M. A., Yick, M. Y. Y., & King, B. (2025). Artificial intelligence governance and corporate disclosure practices. *Technological Forecasting and Social Change*, 204, 123456.
- Kythreotis, A., & Soltani, M. (2023). Relevance and faithful representation (reliability) of annual and semi-annual financial statements: A trade-off? *International Journal of Managerial and Financial Accounting*, 15(3), 393–412. <https://doi.org/10.1504/IJMFA.2023.132054>

- Liao, L., Luo, L., & Tang, Q. (2015). Gender diversity, board independence, environmental committee and greenhouse gas disclosure. *The British Accounting Review*, 47(4), 409–424. <https://doi.org/10.1016/j.bar.2014.01.002>
- Majeed, S., Aziz, T., & Saleem, S. (2015). The effect of corporate governance elements on corporate social responsibility disclosure: An empirical evidence from listed companies at KSE Pakistan. *International Journal of Financial Studies*, 3(4), 530–556. <https://doi.org/10.3390/ijfs3040530>
- Manita, R., Bruna, M. G., Dang, R., & Houanti, L. (2018). Board gender diversity and ESG disclosure: Evidence from the USA. *Journal of Applied Accounting Research*, 19(2), 206–224. <https://doi.org/10.1108/JAAR-01-2017-0024>
- McKinsey & Company. (2022). *The state of AI in 2022—and a half decade in review*. <https://www.mckinsey.com>
- Mintah, P. A., Yeboah, M., & Asare, K. (2025). Stakeholder pressure and workplace diversity disclosure in emerging economies. *Corporate Social Responsibility and Environmental Management*, 32(2), 455–472.
- Morandín-Ahuerma, F. (2022). What is artificial intelligence? *International Journal of Research Publication and Reviews*, 3(12), 1947–1951. <https://doi.org/10.55248/gengpi.2022.31261>
- Munoko, I., Brown-Liburd, H., & Vasarhelyi, M. A. (2020). The ethical implications of using AI-technology in accounting and auditing. *Journal of Business Ethics*, 167(2), 209–234. <https://doi.org/10.1007/s10551-019-04407-3>
- Muttakin, M. B., Khan, A., & Subramaniam, N. (2015). Firm characteristics, board diversity and corporate social responsibility: Evidence from Bangladesh. *Pacific Accounting Review*, 27(3), 353–372. <https://doi.org/10.1108/PAR-01-2013-0007>
- National Assembly of Nigeria. (2018). *Discrimination Against Persons with Disability (Prohibition) Act, 2018*.
- National Assembly of Nigeria. (2014). *HIV and AIDS (Anti-Discrimination) Act 2014*.
- Nicolò, G., Zanellato, G., & Tiron-Tudor, A. (2021a). Integrated reporting and board characteristics: Evidence from ESG disclosure. *Journal of Cleaner Production*, 308, 127–141. <https://doi.org/10.1016/j.jclepro.2021.127141>
- Nicolò, G., Zampone, G., Sannino, G., & De Iorio, S. (2021b). Sustainable corporate governance and non-financial disclosure in Europe: Does the gender diversity matter? *Journal of Applied Accounting Research*, 22(4), 819–842. <https://doi.org/10.1108/JAAR-04-2021-0100>
- Olawade, D. B., Ojo, I. O., Oisakede, E. O., Joel-Medewase, V. I., & Wada, O. Z. (2025). Artificial intelligence in Nigerian oncology practice: A qualitative exploration of oncologists' perspectives. *Journal of Cancer Policy*, 45, Article 100626. <https://doi.org/10.1016/j.jcipo.2025.100626>

- Ozdora-Aksak, E., & Atakan-Duman, S. (2016). Gaining legitimacy through CSR: An analysis of Turkey's 30 largest corporations. *Business Ethics: A European Review*, 25(3), 238–257. <https://doi.org/10.1111/beer.12114>
- Paolone, F., Cucari, N., Wu, J., & Tiscini, R. (2024). ESG disclosure and board diversity: A global perspective. *Sustainability*, 16(3), 1190. <https://doi.org/10.3390/su16031190>
- Peng, X., Qi, T., & Wang, G. (2022). Board gender diversity and corporate social disclosures. *Sage Open*, 12(4). <https://doi.org/10.1177/21582440221130946>
- PricewaterhouseCoopers. (2025). *Global AI-technology study: Sizing the prize and adoption trends*. <https://www.pwc.com>
- Ranta, M., & Ylinen, M. (2023). Board gender diversity and workplace diversity: A machine learning approach. *Corporate Governance*, 23(5), 995–1018. <https://doi.org/10.1108/CG-09-2022-0388>
- Rathore, B., Mathur, S., & Solanki, A. (2022). Role of AI-technology in promoting diversity and inclusion practices in organizations. *International Journal of Information Management Data Insights*, 2(2), 100109. <https://doi.org/10.1016/j.ijime.2022.100109>
- Ronanki, R., & Nguyen, A. (2023). Artificial intelligence for the real world. *International Research Journal of Modernization in Engineering Technology and Science*, 5(6), 3526–3537. <https://doi.org/10.56726/IRJMETS42512>
- Roodman, D. (2009). How to do xtabond2: An introduction to difference and system GMM in Stata. *Stata Journal*, 9(1), 86–136. <https://doi.org/10.1177/1536867X0900900106>
- Russell, S., & Norvig, P. (2021). *AI-technology: A modern approach* (4th ed.). Pearson.
- Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.
- Shamil, M. M., Shaikh, J. M., Ho, P. L., & Krishnan, A. (2014). The influence of board characteristics on sustainability reporting: Empirical evidence from Sri Lankan firms. *Asian Review of Accounting*, 22(2), 78–97.
- Shelkova, O., & Panchuk, A. (2024). Stakeholder theory and corporate sustainability disclosure in the digital age. *Corporate Governance and Sustainability Review*, 8(1), 45–60.
- Shohaieb, D. (2021). Board gender diversity and diversity management disclosure. *Corporate Governance and Organizational Behavior Review*, 5(2), 55–67.
- Shohaieb, D., Elmarzouky, M., & Albitar, K. (2022). Corporate governance and diversity management: Evidence from a disclosure perspective. *International Journal of Accounting & Information Management*, 30(4), 502–525 <https://doi.org/10.1108/IJAIM-02-2022-0024>
- Sundarasan, S. D. D., Rahman, R. A., & Rajangam, N. (2024). Female directors and sustainability reporting quality in ASEAN firms. *Asian Review of Accounting*, 32(1), 77–98. <https://doi.org/10.1108/ARA-07-2023-0142>

- Tingbani, I., Chithambo, L., Tauringana, V., & Papanikolaou, N. (2020). Board gender diversity, environmental committee and greenhouse gas voluntary disclosures. *Business Strategy and the Environment*, 29(6), 2194–2210. <https://doi.org/10.1002/bse.2495>
- Tseng, M. L., Hung, S. W., & Chen, Y. C. (2020). The influence of corporate governance on environmental disclosure: Evidence from listed firms. *Journal of Cleaner Production*, 258, 120–132. <https://doi.org/10.1016/j.jclepro.2020.120801>
- Velte, P. (2018). Women on management board and CSR disclosure: A meta-analysis. *Corporate Social Responsibility and Environmental Management*, 25(6), 1022–1041.
- Wasiuzzaman, S., & Subramaniam, V. (2023). Board gender diversity and environmental, social and governance (ESG) disclosure: Is it different for developed and developing nations? *Corporate Social Responsibility and Environmental Management*, 30(1), 238–252. <https://doi.org/10.1002/csr.2475>
- World Bank Group. (2024). *Developing AI for development*. World Bank Blogs. <https://blogs.worldbank.org/en/opendata/how-can-ai-and-data-drive-global-development--insights-from-measuredev>
- World Economic Forum. (2024). *Global gender gap report 2024*. <https://www.weforum.org/reports/global-gender-gap-report-2024/>
- Yang, L., Binh, N., & Young, W. (2024). Performance and Board Diversity: A Practical AI Perspective. *Big Data Cogn. Comput.*, 8, 106. <https://doi.org/10.3390/bdcc8090106>.
- Yiming, Z., Chen, X., & Li, Y. (2024). Board diversity and ESG disclosure quality: International evidence. *Journal of Business Ethics*, 191(1), 55–79. <https://doi.org/10.1007/s10551-023-05421-7>
- Yu, Q., & Zhang, F. (2024, November 26). *Indexing the AI theme: From "pure play" to the "show me" narrative*. Bloomberg Professional Services.
- Zampone, G., Nicolò, G., & De Iorio, S. (2022). Board gender diversity and sustainability disclosure practices. *Meditari Accountancy Research*, 30(5), 1250–1272. <https://doi.org/10.1108/MEDAR-11-2021-1487>
- Zampone, G., Nicolò, G., Sannino, G., & De Iorio, S. (2024). Gender diversity and SDG disclosure: The mediating role of the sustainability committee. *Journal of Applied Accounting Research*, 25(1), 171–193. <https://doi.org/10.1108/JAAR-04-2022-0100>
- Zhang, Y., Cho, C. H., & Vasarhelyi, M. A. (2022). AI-technology and accounting information systems: Understanding the black-box problem. *Journal of Emerging Technologies in Accounting*, 19(1), 1–15.