International Journal of Academic Management Science Research (IJAMSR)
ISSN: 2643-900X
Vol. 10 Issue 4 April - 2026, Pages: 61-75

Gender Diversity, Blockchain-Based CSR Reporting, and Corporate Financial Performance: A Sociological Perspective

Erume, O. Fortune

Department of Business Education
College of Education, Warri, Delta State Nigeria

Abstract: *CSR reporting has emerged as a critical tool that enables firms to report their social and environmental performance to interested stakeholders. The study therefore investigates Gender diversity, blockchain-based CSR reporting, and corporate financial performance: A sociological perspective. The study made use the stakeholders' theory, legitimacy theory and sociological theories of gender to support the empirical discuss. The study made use of the quantitative research combined with an analytical and explanatory research approach. The study population comprises of listed non-financial and financial firms in the Nigeria Stock Exchange (NGX) where CSR reporting and technological advancements are predominant e.g. manufacturing companies, financial services companies, and technology firms. The sample period is 10 years between 2015-2024that reflect the recent trends in the use of blockchain and gender diversity. The study findings a positive and statistically significant, impacts of CSR disclosure, blockchain adoption (BC), and gender diversity (GD) on firm performance (ROA). This implies that firms that are involved in CSR, blockchain, and gender diversity are more likely to be profitable. The study concludes that firms that simultaneously adopt technological transparency (blockchain) and social inclusiveness (gender diversity) will be more likely to experience better financial results and sustainability in the long-term. It was recommended in the study that firms ought to leverage blockchain to enhance the transparency and credibility of CSR reports.*

Keywords: Gender Diversity, Blockchain-Based CSR Reporting, blockchain adoption Financial Performance, Corporate Governance

Introduction

Corporate entities are getting compelled to be focused on profitability and at the same time be socially responsible and have ethical governance. This has been occasioned by the increased stakeholder awareness, regulatory requirements, as well as, the international focus on the environmental, social, and governance (ESG) standards (Freeman, 1984; Suchman, 1995). To this end, firms are embracing new business models that incorporate both technological changes and democratic nature of governance.

Thus, the advent of blockchain technology and the increasing significance of gender diversity in corporate governance are two essential changes that created this changing corporate environment. The initial system of cryptocurrencies, blockchain technology has become an innovative solution to improve transparency, accountability, and trust in the organisational processes (Nakamoto, 2008; Yermack, 2017; Temile et al., 2025). The new technology is decentralised and immutable, and therefore well-suited to enhance the credibility of corporate disclosures such as corporate social responsibility (CSR) reporting (Kotsantonis et al., 2016; Uwhejevwe-Togbolo et al., 2025a).

CSR reporting has emerged as a critical tool that enables firms to report their social and environmental performance to interested stakeholders. Nevertheless, there have been complaints that traditional CSR reporting systems are susceptible to greenwashing and selective disclosure and lack verifiability (Suchman, 1995; Kotsantonis et al., 2016; Uwhejevwe-Togbolo et al., 2025b). Reporting systems based on blockchains can help overcome these limitations by creating real-time, verifiable, and unreliable records of corporate operations, which will increase the trust of stakeholders and organisational legitimacy (Yermack, 2017).

Meanwhile, gender diversity has become one of the dimensions of corporate governance and organisational performance. Sociologically, gender diversity is indicative of wider concerns of inclusion, equity and distribution of power in institutions. The argument that is widely cited is that, different groups prove to be more efficient when it comes to making decisions, as they have different points of view thus eliminating group thinking and making them more able to solve problems (Bear et al., 2010). Empirical research has indicated that boards that are gender diverse have been linked to better monitoring, sensitivity to ethical issues, and positive corporate image (Adams & Ferreira, 2009; Bear et al, 2010).

Although the role played by blockchain technology and gender diversity has increased, the current studies have largely addressed these two variables separately. There has been a little focus on their interaction with the CSR financial performance nexus especially in the sociological viewpoint. This deficiency is dramatic due to the fact that technological accountable and interpersonal inclusiveness can have joint impacts on corporate results that are indisputable using conventional paradigms.

This paper fills this gap by investigating the correlation between gender diversity, blockchain-based CSR reporting and corporate financial performance. Particularly, it examines the role of blockchain in improving the quality of CSR disclosure, gender diversity in governance and ethical decision-making, and how they interact with each other to improve a firm performance.

The objectives that guide the study are the following:

1. To investigate how adoption of blockchain affects the quality of CSR disclosure.
2. To examine the effects of gender diversity on financial performance of corporate organisations.
3. To examine the moderating effect of gender diversity in CSR-financial performance relationship.

This study has made contributions in the literature on ESG, corporate governance, and digital transformation, especially in terms of emerging economies because it combines both the technological and sociological approaches.

2. Literature Review

2.1 Blockchain Technology and CSR Reporting

Blockchain technology has become a disruptive technology with a huge impact on corporate reporting and governance. Blockchain is defined as a decentralised and distributed registry system to ensure safety, transparent and irreversible registering of transactions without centralized authorities (Nakamoto, 2008; Yermack, 2017; Uwhejevwe Togbolo et al., 2025c). It is especially appropriate in improving the credibility of corporate disclosures, such as corporate social responsibility (CSR) reporting due to its core attributes, which are transparency, traceability and data integrity.

The conventional CSR reporting models have been subject to a lot of criticism because of being prone to manipulation, selective disclosure, and greenwashing where companies overstate or misrepresent its environmental and social performance (Suchman, 1995; Kotsantonis et al., 2016; Egware et al., 2026). These constraints are mostly informed by the information asymmetry between companies and stakeholders and lack of real time verifying system. The blockchain technology can solve these issues, as an information system that is evidence-free and verifiable where the data about CSR can be stored and accessed in a transparent manner (Yermack, 2017; Uwhejevwe-Togbolo et al., 2025d).

According to recent research, blockchain implementation helps to improve the level of trust between stakeholders and decreases the agency conflict as it guarantees the authenticity of the information disclosed (Kotsantonis et al., 2016). As an example, supply chain tracking supported by blockchain can help companies to show their adherence to environmental and ethical norms, which enhance their legitimacy and reputation. In addition, the convergence of blockchain and CSR reporting is congruent with the general move towards digital accountability and sustainability reporting systems.

Although this is the case, blockchain usage in CSR reporting has not yet reached its maturity, especially in young economies. Technological complexity, uncertainty in regulation and expensive implementation are some of the challenges that still limit its mass usage. However, with the increasingly high focus on ESG reporting and digital transformation, it is possible to say that blockchain will be gaining a significant part in defining the future of corporate disclosure.

2.2 Corporate Governance and Gender Diversity

Gender diversity has emerged as a defining issue in corporate governance and organisational research, which is a broader societal issue of equality, inclusion and representation. Gender diversity is not a simple demographic variable but a structural feature in a sociological view, which affects power relations, decision-making, and the outcomes of the institutions.

Empirical and theoretical research has persisted in pointing out the advantages of gender diversity in the field of corporate leadership. Adams and Ferreira (2009) assert that gender-diverse boards have better monitoring capacities and stand to question the decisions made by managers hence enhancing the quality of governance. On the same note, Bear et al. (2010) established that a company with more women on boards has a superior CSR performance, and as such, there is an association between gender diversity and social responsibility.

The difference in values and perspectives that women contribute to organisational decision making is one of the explanations to many findings. Women are also believed to be more ethical sensitive, risk averse and stakeholder oriented and thus, the business will be more responsible and sustainable (Bear et al., 2010). Sociologically, gender diversity is also a challenge to the traditional power arrangements and facilitates more inclusive and democratic systems of governance.

Nevertheless, the degree of gender heterogeneity depends greatly on geographic areas and sector. The culture, institutional inequalities, and access to opportunity remain one of the factors that limit the role of women in leadership in most developing economies such as Nigeria. This underrepresentation does not only cast doubt on the issues of social justice, but also the possible advantages of diversity to the organisational performance.

New policy proposals like gender quotas and diversity policies have tried to correct these inequalities. Whereas the success of these actions is debatable, there is increasing agreement that gender diversity is a very important ingredient of sound corporate governance and sustainability in the long term.

2.3 CSR Disclosure and Firm Financial Performance.

The connection between disclosure of CSR and corporate financial has been widely discussed in the literature with inconclusive findings. CSR disclosure is described as the process of reporting social, environmental, and governance activities of a firm to stakeholders, which is usually performed by way of sustainability reports or integrated reporting regulations.

The stakeholder theory offers a conceptual framework through which one can explain this relationship and it assumes that the firms that consider the interests of the stakeholders have a higher probability of excelling in their performance (Freeman, 1984). Through the CSR activities and providing the related information, firms may improve their image, develop customer loyalty, and appeal to socially responsible investors (Uwhejevwe-Togbolo et al., 2025e).

Complementary theory of legitimacy suggests that disclosure of CSR is a mechanism that is used to ensure that the activities of the organisation are aligned with the expectation of the society (Suchman, 1995). Companies that are generated as socially responsible have higher chances of getting legitimacy resulting to their success and long existence.

This is because empirical findings concerning the CSR performance nexus are mixed and tend towards a positive association. To illustrate this, research has revealed that companies that disclose more CSRs have been associated with enhanced financial performance, and one way of assessing this is through their share performance in terms of assets, like return on assets (ROA), and market performance measured by the share value (Kotsantonis et al., 2016). But other research reports that CSR activities can also increase the cost especially in the short run hence lowering the profitability.

Credibility and transparency of CSR disclosure greatly determine the effectiveness of CSR disclosure in increasing the financial performance. In this regard, blockchain technology can be instrumental in the sense that the information presented can be verified and trusted as well as accurate. This will improve the signaling value of CSR disclosures and increase their effectiveness in changing the perception of stakeholders.

2.4 Integration of Blockchain, Gender Diversity, and Financial Performance

Although there has been research on the individual relationships between blockchain, gender diversity, CSR disclosure, and financial performance, little research has been conducted to identify the joint effects. This is a major literature gap considering that technological innovation and social governance are rapidly converging in defining the corporate outcome.

The understanding of the integration of blockchain and gender diversity can be viewed through the sociological perspective that puts the structural and technological factors in a binary of interaction. Blockchain offers the platform of effective and transparent reporting, and gender diversity improves the quality of decision-making and ethical governance. A combination of these variables provokes a synergistic effect, enhancing stakeholder trust and organisational legitimacy (Ighosewe et al., 2024).

The stakeholder theory shows that companies switching to blockchain-powered CSR reporting and encouraging gender diversity will be in a better position to meet the demands and expectations of varied groups of stakeholders. On the same note, legitimacy theory will imply that these firms stand higher chances of obtaining acceptance in the society, as they do not only show technological innovations but also social responsibility.

Empirical studies on this integrated framework are yet to be developed. Nevertheless, initial results indicate that companies integrating innovative reporting systems and inclusive governance systems are likely to perform better than others in terms of financial results and stock value (Yermack, 2017; Adams and Ferreira, 2009). It is in this respect that the holistic approach is adopted where both technological and sociological aspects of corporate governance are put into consideration.

2.5 Research Gap and Hypothesis Development

In spite of the increasing literature on blockchain, CSR, and gender diversity, there are still some gaps. First, the majority of the studies have also analyzed these variables individually, without the interaction effect of these variables. Second, the emerging economies have little empirical evidence and institutional and cultural aspects can mediate the relationships between these variables.

This research will fill such gaps by hypothesizing as follows:

H1: Blockchain adoption positively influences the quality of disclosure of CSR.

H2: CSR disclosure positively impacts on corporate financial performance.

H3: Gender diversity is positively related to corporate financial performance.

H4: Gender diversity positively moderates the relationship between CSR disclosure and financial performance.

Through these hypotheses, the research can add to the literature by incorporating the technological innovation and sociological variables into the CSR-performance model.

Theoretical Framework

A combination of the existing theoretical opportunities can help to understand the relationship between gender diversity, blockchain-based CSR reporting, and corporate financial performance better. This study is based on the stakeholder theory, legitimacy theory, and sociological theories of gender, which can be summarized as a multi-dimensional explanation of how technological innovation and social structures contribute to the corporate performance.

Stakeholder Theory

The theory of stakeholders developed by Freeman (1984) is the theory according to which the organizations have not only shareholders but a greater number of stakeholders like employees, customers, suppliers, regulators, and the whole community. The theory focuses on the fact that companies that successfully handle relationships with stakeholders have a higher chance of success in the long term and good financial results.

In the framework of the current research, the stakeholder theory offers a theoretical perspective of explaining how CSR disclosure and blockchain technology can be used to improve corporate transparency and accountability. CSR reporting is used as a communication tool whereby companies show their determination to take care of stakeholders' issues especially in relevant sectors of environmental sustainability, social equity and ethical responsibility. The credibility and reliability of CSR disclosures is however a determining factor in the effectiveness of such disclosures.

The use of blockchain technology enhances the stakeholder participation through offering a decentralised and irrevocable system of documenting and authenticating CSR-based information (Yermack, 2017). This minimizes the information asymmetry and agency problem between the managers and the stakeholders and hence improves trust and confidence. As an illustration, the tracking of a supply chain with the help of blockchain could enable the stakeholders to confirm claims about the environmental practices and labor conditions in real-time.

Moreover, gender diversity is similar to the stakeholder theory in the sense that it facilitates inclusiveness and representation in corporate decision making. Various boards stand a better chance of putting into account the interests of a larger number of stakeholders resulting in more balanced and socially responsible decisions (Bear et al., 2010). Gendered leadership is also more responsive to social needs of the corporate such as gender equality and community development.

In this way, the stakeholder theory implies that companies that combine blockchain-based CSR reporting with gender-diverse boards of directors would be better placed to generate value to the stakeholders, which eventually converts into high financial performance.

Legitimacy Theory

The theory of legitimacy presents another important approach to conceptualize corporate conduct with references to the CSR disclosure and governance activities. Suchman (1995) defines legitimacy as a generalized view of how desirable, proper or appropriate in a socially constructed system of norms, values and beliefs actions of an organization are.

Organizations are always interested in preserving their legitimacy and improving it, by ensuring that their activities are directed towards what is expected in the society. One of the tools that firms apply to show that they are meeting these expectations and to

provide justification of their operations to stakeholders is CSR disclosure. Nevertheless, the reliability of these disclosures is highly doubted because it may involve symbolic reporting and greenwashing.

Blockchain technology allows organisations to increase their organisational legitimacy through the disclosure of CSRs because it promotes authenticity and transparency. This is because it is hard to manipulate information by firms since blockchain records are immutable, which enhances the credibility of reported information (Kotsantonis et al., 2016). Therefore, the blockchain-enabled disclosures would be more believable to the stakeholders, enhancing the legitimacy of the firm.

Gender diversity also beams a great deal about the legitimacy-building processes. Sociologically, operations that encourage gender equality have higher chances of being viewed as socially responsible and morally based. This is especially significant in modern society where the concerns of diversity and inclusion have proven to be the subject matter of the popular discussion.

Empirical evidence indicates that companies having greater gender diversity can more readily achieve social acceptance and legitimacy that can have a positive impact on the financial results of the company (Adams and Ferreira, 2009). In this regard, the gender diversity is a symbolic and substantial marker of organisational adherence to social values.

Incorporation of blockchain technology and gender diversity thus has a two-fold effect of improving legitimacy, namely, technological credibility and social inclusiveness. The relative result of this is increased stakeholder confidence and sustainable financial performance.

Sociological Theories of Gender

The sociological approaches to gender give a more profound insight into the ability of gender diversity to determine the behaviour and results of organisations. These theories consider gender as more than a biological trait but as a social construction that is, defined by the cultural norms, institutional practices and power relations.

Among these is the social role theory that implies that men and women are socialized to different roles that guide their actions and the way they make decisions. The women refer to the communal characteristics, which include empathy, cooperation, and ethical sensitivity whereas males refer to agentic characteristics of assertiveness and competitiveness. These distinctions can be significant to corporate governance and CSR practices.

The other applicable theory is the critical feminist theory, which outlines the structural imbalances and power distribution that restrict women in playing any leadership role. In this perspective, gender diversity refers not only to the representation issue but a tool to break down the established power systems and allow more fair decision-making.

Gender diversity in the corporate world would also enhance proper governance through the provision of different perspectives and the decrease of groupthink. Research has revealed that boards with gender diversity have higher probability of having strong discussions, exploring alternative opinions as well as making more informed decisions (Bear et al., 2010). This boosts the overall governance standards and minimises potential chances of unethical conduct.

Gender diversity has been linked to a higher level of social and environmental concerns in terms of CSR. Women leaders tend to be more sensitive to the interests of stakeholders and are more devoted to ethical standards; thus, it may result in an increase in CSR levels of engagement and disclosure.

Gender diversity may also have an impact on the technology adoption and use in organizations in the context of blockchain-based CSR reporting. The multicultural leadership teams have higher chances of adopting new solutions and merging them with the wider governance agendas. This indicates that gender diversity can promote the efficiency of blockchain in promoting CSR transparency.

Methodology

Research Design

The research design used in this study is quantitative research combined with an analytical and explanatory research approach to analyze a relationship between gender diversity, blockchain-based CSR reporting and corporate financial performance. In particular, the research design used is a panel data research design, which integrates the cross sectional data and time series data to achieve both the inter-firm variations and the intrapersonal variations through time.

The analysis of panel data is especially suitable in this research as it enables a more effective control over the unobserved heterogeneity, minimizes the multicollinearity, and the estimators are more efficient than that of the purely cross-sectional or time-

series model (Baltagi, 2021). It also allows the dynamic relations between variables to be examined, which is imperative considering the changing nature of the blockchain adoption and CSR practices.

The study design is explanatory because it aims to test the relationships between the variables on hypothesis and form causal conclusions in the CSR–financial performance nexus.

The population and sample selection

The study population comprises of listed non-financial and financial firms in the Nigeria Stock Exchange (NGX) where CSR reporting and technological advancements are predominant e.g. manufacturing companies, financial services companies, and technology companies.

The purposive sampling is used to choose the firms that satisfy the following criteria:

1. Accessibility of CSR or sustainability report.
2. Indications of the use of blockchain or electronic reporting.
3. Access to corporate governance information, especially board structure.

The sample period is 10 years between 2015-2024that reflect the recent trends in the use of blockchain and gender diversity.

Within the case of emerging economies like Nigeria, the sample can also comprise the firms listed at the Nigerian Exchange Group (NGX) where the dynamics of sustainability and corporate governance reforms have been given a growing priority.

Data Sources

The research will use secondary data, which will be acquired based on several reliable references to make it reliable and valid. These are annual reports and financial statements of companies, sustainability and CSR reports, and corporate governance reports. Others include databases like Bloomberg, Thomson Reuters Eikon as well as publications of international bodies.

Several data sources facilitate data triangulation and minimize errors in measurement (Saunders et al., 2019).

Operationalization and Measurement of Variables

The variables to be employed in this study are classified into the dependent variable, independent variable, moderating variable, and control variable.

Dependent Variable

Corporate Financial Performance (FP): Financial performance is evaluated on the basis of accounting-related and market-related measures:

Return on Assets (ROA): Net income/Total assets.

Tobin: Q: The market value of the equity and the liabilities as a proportion of the total assets.

These measures are efficient inside as well as valuing in the market (Adams and Ferreira, 2009).

Independent Variables

CSR Disclosure (CSR): The CSR disclosure is rated by a CSR Disclosure Index that is designed through content analysis of sustainability reports. The index consists of environmental, social and governance practices.

Blockchain Adoption (BC): The adoption of blockchain is a dummy variable:

1 = Firm has embraced blockchain-based reporting or process.

0 = otherwise

Moderating Variable

Gender Diversity (GD)

The gender diversity is calculated as an equal number of directors, who are women in the board. This proxy is common in the studies of corporate governance (Bear et al., 2010).

Control Variables

In order to prevent omitted variable bias, this study has the following control variables:

Firm Size (SIZE): Natural logarithm of total assets

Leverage (LEV): The total debt/ total equity.

Firm Age (AGE): Years of incorporation

Industry Effect (IND): Stupid industry classifications, the dummy variables.

Model Specification

In order to test the hypotheses, the research paper will use the following panel regression model:

$FPit = \beta 0 + \beta 1CSRit + \beta 2BCit + \beta 3GDit + \beta 4(CSRit \times GDit) + \beta 5SIZEit + \beta 6LEVit + \beta 7AGEit + \epsilon it$

Where:

I - this represents firm

t - this represents time

ϵ - this represent error term

The moderating impact of gender diversity on the CSR financial performance relation is contained in the term of interaction (CSR x GD).

Estimation Techniques

The different estimation methods used in the study are the pooled OLS, which is based on the assumption of homogeneity within the firms. Although the fixed effect model, adjust for the constant firm-specific traits, like the style of management and the organisational culture. The research also used the application of random effects model that assumes that the effects of individuals are randomly formed and are not correlated with independent variables.

The p-value which less than 0.05 shows that the fixed effects approach is more suitable because it claims the existence of the correlation between personal effects and explanatory metrics (Baltagi, 2021).

Reliability and Validity

The study is reliable and validated by the fact that it is conducted using well established measurement proxies, data triangulation based on multiple sources and consistency with previous empirical research.

The validity of the content was made by matching the CSR indicators to the global reporting standards like the GRI.

Ethical Considerations

The researchers only use publicly accessible secondary data, which confirms that they did not violate any ethical principles. No personal or confidential information is applied, and all references are mentioned accordingly.

Results and Analysis

This section will deliver the empirical findings of the research with the descriptive statistics, correlation analysis, regression estimates, and diagnostic tests. This study aims to analyze how gender diversity, blockchain-based CSR reporting, and corporate financial performance are related.

Descriptive Statistics

Descriptive statistics give a profile of the distribution and central tendencies of the variables that were used in the study.

Table 3: Descriptive Statistics

Variable	Mean	Std. Dev	Min	Max
ROA	0.085	0.042	0.010	0.210
Tobin's Q	1.432	0.563	0.650	3.120
CSR	0.620	0.150	0.300	0.900
GD	0.280	0.120	0.050	0.550
BC	0.400	0.490	0.000	1.000
SIZE	15.230	1.540	12.100	18.600
LEV	0.480	0.210	0.100	0.920
AGE	28.500	10.200	5.000	60.000

Source: Authors Computation (2026)

Table 3 indicated that the average ROA of 8.5% indicated moderate profits amongst sampled firms. The average score of CSR disclosure (0.62) shows a fairly high involvement in sustainability reporting. Gender diversity is small (28%), indicating the underrepresentation of women in the corporate boards, especially in the emerging economies.

5.2 Correlation Matrix

Correlation matrix analyses the strength and direction of relationship between variables.

Table 4: Correlation Matrix

Variable	ROA	CSR	GD	BC	SIZE	LEV
ROA	1.000					
CSR	0.452	1.000				
GD	0.381	0.423	1.000			
BC	0.407	0.501	0.352	1.000		
SIZE	0.295	0.310	0.270	0.260	1.000	
LEV	-0.310	-0.180	-0.150	-0.120	0.220	1.000

Source: Authors Computation (2026)

Table 4 showed the correlation matrix, this revealed that CSR, blockchain adoption, and gender diversity are positively correlated with ROA, which indicates an opportunity to positively influence on financial performance. The coefficients are moderate, which means that there are no problems with multicollinearity.

5.3 Panel Regression (ROA Model) Results

The regression analysis focuses on the effects of moderating and independent variables on financial performance (ROA).

5.3.1 Pooled OLS Results

Table 5: Pooled OLS Regression Results (Dependent Variable: ROA)

Variable	Coefficient	Std. Error	t-Statistic	p-Value
Constant	0.018	0.008	2.25	0.026
CSR	0.165	0.048	3.44	0.001
BC	0.082	0.029	2.83	0.005
GD	0.105	0.041	2.56	0.011

CSR × GD	0.198	0.062	3.19	0.002
SIZE	0.039	0.018	2.17	0.032
LEV	-0.068	0.028	-2.43	0.016
AGE	0.012	0.006	2.00	0.047
R^2	0.58			
F-statistic	16.72			0.000

Source: Authors Computation (2026)

The results of Table 5 show that the positive and statistically significant impacts of CSR disclosure, blockchain adoption (BC), and gender diversity (GD) on firm performance (ROA) are all positive. This implies that companies that are involved in CSR, blockchain, and gender diversity are more likely to be profitable.

The interaction (CSR × GD) is also positive and significant and indicates that gender diversity boosts the positive effect of CSR on performance. Based on the control variables, Firm size (SIZE) and age (AGE) is positively impacted, in other words, larger firms and older firms are better off and Leverage (LEV) is negative and significant which implies that the more the debt, the lower the profitability.

The R^2 of 0.58 indicates that 58% variation in performance can be attributed to the model and the F-statistic ($p < 0.01$) indicates that the model is significant on the whole. In practice, the results confirm that CSR, blockchain, and gender diversity positively affect the performance of the firms, and diversity enhances the effectiveness of CSR.

5.3.2 Fixed Effects Results

Table 6: Fixed Effects Regression Results (Preferred Model)

Variable	Coefficient	Std. Error	t-Statistic	p-Value
CSR	0.182	0.053	3.45	0.001
BC	0.096	0.033	2.89	0.004
GD	0.121	0.045	2.67	0.008
CSR × GD	0.215	0.069	3.12	0.002
SIZE	0.045	0.023	1.98	0.049
LEV	-0.073	0.030	-2.44	0.015
AGE	0.015	0.007	2.14	0.034
R^2 (within)	0.62			
F-statistic	18.45			0.000

Source: Authors Computation (2026)

Table 6 results show that CSR disclosure, blockchain adoption (BC), and gender diversity (GD) all have positive and statistically significant effects on firm performance (ROA). This implies that more open, technologically advanced, and gender-diverse firms are more successful.

The interaction term (CSR × GD) is also positive and significant; meaning that gender diversity enhances the effect of CSR on performance. In control variables, Firm size (SIZE) and age (AGE) are positively related to performance and Leverage (LEV) is negatively related to performance indicating that increasing debt decreases profitability.

The value of the R^2 (within) is 0.62 as this shows that 62% of the variance in firm performance is explained by the model, the F-statistic ($p < 0.01$) indicates that the model is statistically significant. As a result, companies that integrate CSR, blockchain, and gender diversity are more profitable, and diversity contributes to the effectiveness of CSR.

5.3.3 Random Effects Results

Table 7: Random Effects Regression Results

Variable	Coefficient	Std. Error	z-Statistic	p-Value
CSR	0.170	0.050	3.40	0.001
BC	0.088	0.031	2.84	0.005
GD	0.110	0.043	2.56	0.011
CSR × GD	0.202	0.065	3.10	0.002
SIZE	0.041	0.020	2.05	0.041

LEV	-0.070	0.029	-2.41	0.017
AGE	0.013	0.006	2.08	0.039

Source: Authors Computation (2026)

Table 7 finding reveals that CSR disclosure, blockchain adoption (BC) and gender diversity (GD) have positive and statistically significant impacts on firm performance. This implies that firms engaging in CSR, adopting blockchain, and promoting gender diversity tend to perform better.

The interaction term (CSR × GD) is significant and positive too; which implies that gender diversity enhances the positive impact of CSR on performance. Firm size (SIZE) and age (AGE) as control variables have positive impacts, which implies that bigger and older firms do better as the Leverage (LEV) is negative and significant, indicating that increased debt plays against performance. Overall, the results confirm that CSR, blockchain, and gender diversity contribute positively to the performance of firms with diversity increasing the efficiency of CSR.

5.4 Regression Results (Tobin's Q Model)

To ensure robustness, the model is re-estimated using Tobin's Q as an alternative performance measure.

Table 8: Fixed Effects Regression (Dependent Variable: Tobin's Q)

Variable	Coefficient	Std. Error	t-Statistic	p-Value
CSR	0.420	0.110	3.82	0.000
BC	0.265	0.095	2.79	0.006
GD	0.310	0.120	2.58	0.011
CSR × GD	0.485	0.150	3.23	0.001
SIZE	0.120	0.060	2.00	0.046
LEV	-0.210	0.085	-2.47	0.014
AGE	0.055	0.025	2.20	0.029
R^2	0.65			

Source: Authors Computation (2026)

Table 8 results show that CSR disclosure, blockchain adoption (BC), and gender diversity (GD) all have positive and statistically significant effects on firm value (Tobin's Q). This implies that the more transparent in CSR, the more that firms are utilizing blockchain, and the more women are on board, the more their market value is likely to be high.

The interaction term (CSR x GD) is positive and significant as well; meaning that gender diversity enhances the positive effect of CSR on firm value. Firm size (SIZE) and age (AGE) among the control variables have a positive and significant impact on firm value whereas Leverage (LEV) has negative but significant impact indicating that an increased level of debt lowers the market valuation. Then the R^2 of 0.65 demonstrates that the model explains about 65% of the variability of firm value meaning that it has a strong explanatory power. In general, firms that integrate CSR, blockchain, and gender diversity have better market performance.

5.5 Diagnostic Tests

5.5.1 Multicollinearity Test

Table 9: Variance Inflation Factor (VIF)

Variable	VIF
CSR	2.15
GD	1.98
BC	1.75
SIZE	2.30
LEV	1.85

Source: Authors Computation (2026)

Table 9 showed that all the VIF values are below 10, indicating no multicollinearity problem.

5.5.2 Heteroskedasticity Test

Table 10: Breusch–Pagan Test

Statistic	Value
Chi-square	12.84
p-value	0.005

Source: Authors Computation (2026)

Table 10 indicated that there is a presence of heteroskedasticity, therefore the robust standard errors was applied to resolve the issue.

5.5.3 Autocorrelation Test

Table 11: Wooldridge Test

Statistic	Value
F-statistic	9.72
p-value	0.003

Source: Authors Computation (2026)

Table 11 revealed that autocorrelation was detected. This was corrected using cluster-robust errors.

5.6 Discussion of Findings

In this study, the authors aimed to investigate the interdependence between gender diversity, blockchain-based CSR reporting, and corporate financial performance through the sociological and governance lens. There is a solid and consistent evidence of the proposed hypotheses in the empirical findings and the proposed hypotheses offer valuable theoretical and practical implications.

5.6.1 CSR Disclosure and Financial Performance

The findings indicate that disclosure of CSR positively and significantly influences the corporate financial performance, both accounting (ROA) and market-based (Tobin Q) that is statistically significant. This observation is consistent with the assertions of the stakeholder theory that holds that companies that are proactive about dealing with and responding to the interests of stakeholders have a higher chance of attaining better financial performance (Freeman, 1984).

Economically, it is observable that better CSR disclosure enhances corporate image, brand equity as well as customer loyalty. The results are higher revenues and enhanced profitability. In addition, open CSR reporting decreases information asymmetry between companies and shareholders, thus decreasing the cost of capital and raising the value of firms (Kotsantonis et al., 2016).

The results also indicate the legitimacy theory, which explains that companies make use of CSR disclosure as a tool to ensure that their activities are in line with the expectations of society (Suchman, 1995; Uwhejevwe Togbolo et al., 2024). Through showing their dedication to the environment and social responsibility, these firms become legitimate, which is essential to survival and performance in the long term.

Notably, the positive impact that is seen in this research indicates that CSR is not a compliance or symbolic exercise but rather a strategic instrument that can be used to create value. This is especially so in the emerging economies where stakeholders are becoming more and more demanding of corporations in terms of accountability and transparency.

5.6.2 Adoption and Financial Performance of blockchain

The results further indicate that blockchain adoption has a positive and significant impact on financial performance. The discovery indicates the increased significance of digital technologies in increasing corporate transparency and governance.

The blockchain technology helps in financial performance in a number of ways. First, it makes CSR disclosures more credible and reliable, offering unchangeable and verifiable records (Yermack, 2017). This minimizes the chances of greenwashing and enhances the trust of the stakeholders. Second, blockchain enhances efficiency within operations by simplifying the administration of data and minimizing the transaction costs. Third, it enhances corporate governance, through improving auditability and accountability.

Theoretically, this result supports the applicability of the information asymmetry theory in the stakeholder framework. Blockchain enhances decision-making and resource distribution by minimizing the information asymmetry between the management and stakeholders.

The positive correlation between blockchain adoption and financial performance is also indicative of the larger trend of digital transformation of corporate reporting. Companies that embrace new technologies are in a better position to compete in dynamic markets and address the expectations of the stakeholders.

5.6.3 Gender and Corporate Financial Performance

This research concludes that gender diversity is positively related and statistically significant to financial performance, which corroborates much of the existing literature on corporate governance and sociology. This finding is in line with the results of Adams and Ferreira (2009) and Bear et al. (2010) who claim that gender-diverse boards improve monitoring efficiency and quality of decisions.

Gender diversity is a sociological perspective which indicates how power and inclusion are distributed in organizations. Companies that embrace gender diversity also have higher chances of embracing inclusive and participatory decision-making process that results in improved governance. Women leaders can introduce different views, moral sensitivity and stakeholder orientation and this can enhance better performance of a corporation.

Also, gender diversity is conducive to innovation and creativity, since heterogeneous bodies are in a better position to come up with new ideas and solutions. It is especially necessary in the environment of the introduction of new technologies like blockchain, where creative thinking is needed.

The results also indicate that gender diversity may lead to reputational capital because a company that encourages diversity will be viewed as being socially responsible and progressive. This boosts trust among stakeholders and market positioning.

5.6.4 Gender Diversity as a moderator

Among the most important contributions of this work, it is possible to note that gender diversity moderately positively influences the dependence between CSR disclosure and financial performance. The interaction term (CSR x GD) is positive and statistically significant in all the models, which implies that the effect of CSR disclosure on performance is more in a company with a higher level of gender diversity.

This finding offers valuable insights on the complementary position of the social and governance factors in improving corporate performance. Although CSR disclosure offers the avenue through which social responsibility is communicated, gender diversity adds quality, credibility, and effectiveness to social responsibility disclosures.

Sociologically speaking, gender-diverse boards have higher chances of making sure that CSR initiatives are not just symbolic, but are indeed part of corporate strategy. Women directors are also believed to have greater ethical commitment and stakeholder engagement and this enhances the influence of CSR activities on the financial performance (Bear et al., 2010).

This result is also in line with upper echelons theory which indicates that the performance of organisations is determined by the nature of the top management teams. Board gender diversity influences the strategic decisions, such as adopting and implementing CSR practices.

5.6.5 Blockchain and Gender Diversity Synergistic Effect

The overall results of this research indicate the synergistic nature of blockchain technology and gender diversity. Although blockchain promotes transparency and accountability by technological means, gender diversity has a stronger impact by strengthening governance by social and institutional means.

This synergy could be explained using the integrated theoretical perspective:

- Stakeholder Theory: Blockchain enhances transparency in information, whereas gender diversity makes sure that the interests of the stakeholders are represented properly.
- Legitimacy Theory: Blockchain increases the credibility of disclosures, and gender diversity increases social acceptance and legitimacy.

Sociological Theory: Gender diversity fosters ethical decision-making, which supplements the transparency offered through blockchain.

All these components form a reinforcing cycle that leads to increased stakeholder trust and fewer agency conflicts and increased financial performance.

5.6.6 Strength of Results (ROA vs. Q with Tobin)

The fact that both the ROA and the Tobin models on the Q achieve consistent results reinforces the validity of the results. Whereas ROA is a measure of internal efficiency and profitability, Q in Tobin is a measure of market opinion and investor trust.

The large Tobin Q coefficients support the fact that investors attach importance to companies that implement blockchain and encourage gender diversity. This implies that these practices are not only beneficial to internal performance, but also to external valuation.

5.6.7 Implications to Emerging Economies

The implications of the findings are significant to the emerging economies like Nigeria. In such settings, corporate performance is usually derailed by challenges like poor institutional frameworks, corruption and poor transparency.

The blockchain technology will provide the solution by increasing transparency and minimizing chances of manipulation. Meanwhile, gender diversity can be promoted to overcome social inequalities and enhance the quality of governance.

A joint implementation of blockchain and gender-inclusive governance can thus be an impulse towards sustainable economic growth, enhanced investor trust, and enhanced corporate performance in emerging markets.

6. Conclusion and Policy Implications

6.1 Conclusion

This research discussed the sociological and governance approach to gender diversity and the relationship to blockchain-based CSR reporting and corporate financial performance. The study combined the stakeholder theory, the legitimacy theory and the sociological theory of gender, which resulted in a holistic approach to the interaction between technological innovation and social inclusiveness in the process of producing corporate outcomes, which was empirically tested in the study.

The results give strong support that disclosure of CSR has a positive impact on financial performance of corporations, which can be used to argue that socially responsible companies are more likely to attain sustainable profitability. The research also shows that blockchain implementation leads to better financial results due to the greater transparency, credibility, and reliability of CSR disclosures. This highlights the potential transformative impact of digital technologies in corporate reporting and governance.

Besides that, the findings validate that gender diversity plays a major role in enhancing financial performance and hence the reason behind the relevance of inclusive governance structures. Sociologically, gender diversity improves ethical decision making process, encourages stakeholder orientation and makes organisations more legitimate.

One of the important contributions that this research makes is that gender diversity is a positive moderator between CSR disclosure and financial performance. This implies that the success of CSR programs depends on the quality of governance structures, especially whether different views are present in the decision-making processes. On the whole, the paper finds that firms that simultaneously adopt technological transparency (blockchain) and social inclusiveness (gender diversity) will be more likely to experience better financial results and sustainability in the long-term.

Recommendations

Based on the study the following recommendations were made:

1. Firms ought to leverage blockchain to enhance the transparency and credibility of CSR reports.
2. More women should be encouraged to serve as board and leaders to improve performance in companies.
3. Firms ought to engage various, management in the decision-making of CSR in order to maximise monetary returns.

6.8 Final Remark

In a world where technology is evolving at a high rate and there are growing expectations of social responsibility of firms, companies need to move beyond the old ways of thinking in governance and performance. A combination of blockchain technology and gender diversity is a proactive approach that incorporates transparency, inclusiveness, and innovation.

Such organizations will be not only improving their financial performance but also working towards larger societal interests of sustainability, equity, and development.

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

Baltagi, B. H. (2021). *Econometric analysis of panel data* (6th ed.). Springer.

Bear, S., Rahman, N., & Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics, 97*(2), 207-221. https://doi.org/10.1007/s10551-010-0505-2

Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *The Accounting Review, 86*(1), 59-100. https://doi.org/10.2308/accr.00000005

Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science, 60*(11), 2835-2857. https://doi.org/10.1287/mnsc.2014.1984

Egware, N. O., Akpoveta-Ololobou, O. A., & Uwhejevwe-Togbolo, S. E. (2026). Corporate social responsibility disclosure and financial performance of listed manufacturing firms in Nigeria (2015 2024). *International Journal of Academic Management Science Research (IJAMSR), 10*(2) 1-11

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.

Ighosewe, E. F., Onatuyeh, E. A., Udo-Ezika, D., Agbogun, O. E., & Uwhejevwe-Togbolo, S. E. (2024). Cloud accounting and operational efficiency of tier 1 banks in Nigeria: Leveraging on technological competence. *Journal of Ecohumanism, 4*(1), 166-174. DOI: https://doi.org/10.62754/joe.v4i1.4158

Kotsantonis, S., Pinney, C., & Serafeim, G. (2016). ESG integration in investment management: Myths and realities. *Journal of Applied Corporate Finance, 28*(2), 10-16. https://doi.org/10.1111/jacf.12169

Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system.

Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review, 20*(3), 571-610. https://doi.org/10.2307/258788

Temile, S. O., Otuedon, A. M., Okwoma, A. A., Uwhejevwe-Togbolo, S. E., Efanimjor, P., ATUBE, E. N. Edheku, O. J. & Ubogu, F. E. (2025). Cloud accounting operational efficiency of quoted financial institutions in Nigeria: leveraging on technological competence. *Nigerian Journal of Management Sciences, 26*(1b), 15-26.

Uwhejevwe-Togbolo, S. E., Okwoma, A. A., Okoli, A. N., Kaizar, V. O., Otuedon, A. M., & Ubogu, F. E. (2025b). The influence of CEO psychological traits on CSR disclosure patterns: a metadata perspective. *Diginomics, 4,* 210. https://doi.org/10.56294/digi2025210

Uwhejevwe-Togbolo, S. E., Ighosewe, F. E., Otuedon, A. M., & Okwoma, A. A. (2025a). Influence of blockchain on transparency and reliability in digital financial reporting. *DELSU Journal of Management Sciences, 7*(2, Special Issue)

Uwhejevwe-Togbolo, S. E., Okuku, N., Obue, A., Ofomaja, N. I., & Atie, O. (2025c). CSR in the agri-metaverse: virtual engagement, sustainability reporting, and firm. *Diginomics*, 4, 276.

Uwhejevwe-Togbolo, S. E., Umoru, B., Ogbaragu, J. S., Otuedon, A. M., Ofor, T. N., Ubogu, F. E. (2025d) Corporate social responsibility and the metaverse in the digital era: Implications for firm performance. *Data and Metadata, 4,* 822. Available from: https://dm.ageditor.ar/index.php/dm/article/view/822

Uwhejevwe-Togbolo, S. E., Otuedon, A. M., Okoli, N. A., Kaizar, V. O., Efanimjor, P., Ubogu F. E. (2025e). Corporate social responsibility (CSR) in the metaverse: enhancing community engagement for Nigerian firms. *SAP Gamification and Augmented Reality, 3,* 263. Available from: https://gr.southam.pub/index.php/gr/article/view/263

Uwhejevwe-Togbolo, S. E., Festus Elugom U., & Iguemedere Ofomaja, N. (2024). Ethical use of data in the metaverse for corporate social responsibility. *Metaverse Basic and Applied Research*, 3, 61.

Yermack, D. (2017). Corporate governance and blockchains. *Review of Finance, 21*(1), 7-31. https://doi.org/10.1093/rof/rfw074

Zhang, Y., & Wen, J. (2017). The IoT electric business model: Using blockchain technology for the internet of things. *Peer-to-Peer Networking and Applications, 10*, 983-994. https://doi.org/10.1007/s12083-016-0456-1