International Journal of Science and Research Archive
eISSN: 2582-8185
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.net/

(RESEARCH ARTICLE)

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BEYOND COMPLIANCE: THE STRATEGIC ESG INTEGRATION FRAMEWORK (SEIF) FOR PORTFOLIO PRIORITIZATION AND VALUE-CREATING SUSTAINABILITY GOVERNANCE AMONG LISTED FIRMS IN NIGERIA

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International Journal of Science and Research Archive, 2026, 21(02), 821–830

Publication history: Received on 12 October 2026; revised on 22 November 2026; accepted on 24 November 2026

Article DOI: https://doi.org/10.30574/ijsra.2026.21.2.2065

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ABSTRACT

The consequential realities of an ever-dynamic global business ecosystem have brought sustainability issues to the front burner of corporate governance, globally. Despite the proliferation of Environmental, Social, and Governance (ESG) policies, however, firms are often unable to develop effective frameworks for prioritizing ESG investments. This study examines the effect of Strategic ESG Implementation Framework (SEIF) on Value-Creating Sustainability Governance in Nigerian listed firms, and the moderating role of Board ESG expertise. SEIF, the predictor variable, is operationalized in three dimensions as ESG Risk Materiality Mapping, Strategic Portfolio Prioritization, and Governance Mechanism Integration, while Financial Value, Risk Mitigation, and Intangible Value are employed as proxies of the criterion variable. The study adopted quantitative methodological design with explanatory sequential. Secondary data from 113 firms (565 firm-years) were obtained using stratified random sampling from the Nigerian Exchange. Analysis was done using Moderated Multiple Regression with firm fixed effects. All the three dimensions of SEIF were significantly associated with the Value-Creating Sustainability Governance. The Governance Mechanism Integration had the strongest effect ($\beta = 0.298$, 95% CI [0.204, 0.392]; $\beta = 0.389$, 95% CI [0.275, 0.503]) for Tobin's Q and ESG reputation, respectively. Furthermore, the moderating role of the Board's ESG expertise was significant between SEIF and Value-Creating Sustainability Governance ($\beta = 0.245$ to 0.389; all $p < 0.01$). All the null hypotheses were rejected. The study thus posits that all the three dimensions of SEIF are valuable in creating value. However, the Governance Mechanism Integration plays the most significant role. It is recommended that firms necessarily prioritize the integration of ESG in their governance mechanisms and equally invest in building the ESG expertise of their directors.

Keywords: Strategic Esg Integration Framework, Value-Creating Sustainability Governance, Portfolio Prioritization, Board Esg Expertise, Esg Risk Materiality Mapping

1 INTRODUCTION

The business environment, world over. is evolving rapidly due largely to environmental degradation, social inequality, increasing regulatory pressure, and allied consequential realities of the ever-dynamic global business ecosystem. ESG consideration have essentially become one of the key issues to board of directors globally. Traditionally, however, ESG policies have been implemented in response to regulatory pressures, without any strategic consideration. Firms have tended to comply with the minimum requirements of mandatory disclosure without considering sustainability as an opportunity to create value ESG considerations have essentially become one of the key issues on boards of directors worldwide. Investors, regulators, and customers all hold companies accountable and require them to go beyond mere talk when it comes to sustainability commitment issues. Interestingly, however, scholars have demonstrated that companies could gain competitive advantage by strategically capitalizing on ESG issues (Wang, 2026).

The modern ESG strategy represents a fundamental rethinking of how profit-maximizing activities of firms are governed under the constraints of ESG regulations. According to Wang (2026), ESG strategy operationalizes the profit maximization under the constraints of ESG regulations by expanding the set of priced assets that define the boundaries of a contract, as well as the set of enforceable contracts, by considering relevant ESG risks. However, a critical challenge facing firms is the fact that despite possessing ESG data, ESG policies, and regulatory guidelines, they are unable to create effective frameworks for decision-making to prioritize capital allocation towards high-impact ESG initiatives. The study focuses on the Strategic ESG Integration Framework (SEIF). SEIF is a comprehensive approach to ESG that integrates ESG considerations into strategic decision-making and capital allocation in accordance with stakeholder and resource-based theories. SEIF is comprised of three dimensions, namely, ESG Risk Materiality Mapping, Strategic Portfolio Prioritization, and Governance Mechanism Integration.

- ESG Risk Materiality Mapping is a systematic process of identifying, analyzing, and prioritizing
- ESG issues that have a direct financial impact on the company's valuation (Khan et al., 2016).
- The prioritization ensures that the firms focus on the ESG areas with the highest

Impact on their business. With the ESG issues identified and prioritized, firms can strategically allocate their limited resources in accordance with the ESG Risk Materiality Mapping (Wang, 2026). The third component, Governance Mechanism Integration, involves the integration of ESG considerations into the company's governance mechanism and management practices (OECD, 2025). By doing so, ESG considerations become a priority, instead of an optional add-on. The study considers Value-Creating Sustainability Governance as a firm's ability to create value by effective management of ESG issues, which is demonstrated through the Financial Value, Risk Mitigation, and Intangible Value. The Board ESG Expertise is measured as the percentage of ESG competent directors on the board of directors.

The study focuses on the firms listed on the Nigerian Exchange. As of December 2025, there were approximately 157 listed firms in Nigeria (Nigerian Exchange Group, 2025). The Nigerian business environment is particularly important because of the changes in governance regulations, such as the NGX Sustainability Disclosure Guidelines (2019) and the SEC Nigeria Sustainable Finance Principles (2021), among others. The study covers the period 2021-2025.

Although there is a substantial body of literature on ESG, critical research gaps still exist. First, prior studies have focused on ESG's overall impact on firms' economic performance, without differentiating between the ESG integration process (Eccles et al., 2014; Khan et al., 2016). Second, the boundary condition role of the Board ESG Expertise has received limited attention in the literature. The study fills these gaps by investigating the ESG strategic integration process.

1.1 Statement of the Problem

The failure of firms to prioritize ESG considerations in decision-making, which leads to an inability to achieve value creation, despite the growing awareness of ESG issues. Although firms are increasingly adopting ESG policies, the reality is that they have remained a compliance obligation, and ESG considerations are viewed as a cost centre. Firms have been unable to capitalize on ESG issues to create value. Empirical evidence demonstrates that firms that perform well in ESG issues that have been identified as financially material to its business significantly outperform firms that perform poorly on these ESG issues (Khan et al., 2016). According to OECD (2025), nearly 70% of companies have executive compensation directly tied to sustainability, but the evidence on the effectiveness of these policies is mixed. The literature demonstrates that less than 12.4% of the directors are ESG qualified, which limits their ability to influence the firm's ESG strategy. Prior studies have failed to address the following: (1) the process of ESG integration instead of the overall effect (Eccles et al., 2014; Amel-Zadeh & Serafeim, 2018); (2) strategic decision-making process; (3) moderating role of board capabilities; (4) and the context of emerging markets. This study addresses these research gaps.

1.2 Aim and Objectives of the Study

The basic aim of the study is to examine the effect of SEIF on Value-Creating Sustainability Governance and determine whether Board ESG Expertise strengthens this relationship. In specific terms, the study aims to examine the effect of each of the three operational dimensions of SEIF on three respective proxies of Value-creating Sustainability Governance, and how this is moderated by Board ESG Expertise.

1.3 Research Questions

To achieve the laid down objectives, the study addresses the following research questions:

- Does ESG Risk Materiality Mapping significantly affect Financial Value?
- Does ESG Risk Materiality Mapping significantly affect Risk Mitigation?
- Does ESG Risk Materiality Mapping significantly affect Intangible Value?
- Does Strategic Portfolio Prioritization significantly affect Financial Value?
- Does Strategic Portfolio Prioritization significantly affect Risk Mitigation?
- Does Strategic Portfolio Prioritization significantly affect Intangible Value?
- Does Governance Mechanism Integration significantly affect Financial Value?
- Does Governance Mechanism Integration significantly affect Risk Mitigation?
- Does Governance Mechanism Integration significantly affect Intangible Value?
- Does Board ESG Expertise significantly moderate the SEIF-Value Creation relationship?

1.4 Research Hypotheses

The following null hypotheses are formulated as tentative answers to the research questions, and will be tested at the 5% level of significance:

- H01: There is no significant positive relationship between ESG Risk Materiality Mapping and Financial Value.
- H02: There is no significant positive relationship between ESG Risk Materiality Mapping and Risk Mitigation.
- H03: There is no significant positive relationship between ESG Risk Materiality Mapping and Intangible Value.
- H04: There is no significant positive relationship between Strategic Portfolio Prioritization and Financial Value.
- H05: There is no significant positive relationship between Strategic Portfolio Prioritization and Risk Mitigation.
- H06: There is no significant positive relationship between Strategic Portfolio Prioritization and Intangible Value.
- H07: There is no significant positive relationship between Governance Mechanism Integration and Financial Value.
- H08: There is no significant positive relationship between Governance Mechanism Integration and Risk Mitigation.
- H09: There is no significant positive relationship between Governance Mechanism Integration and Intangible Value.
- H010: There is no significant moderating effect of Board ESG Expertise on the SEIF-Value Creation relationship.

The Risk Mitigation is reflected in the lower WACC and Stock Beta. Therefore, there should be a positive relationship with the independent variables, since they reduce these risk measures. In other words, if a coefficient is positive and statistically significant, it would mean that the independent variable has a negative effect on the risk.

2 LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Conceptual Framework

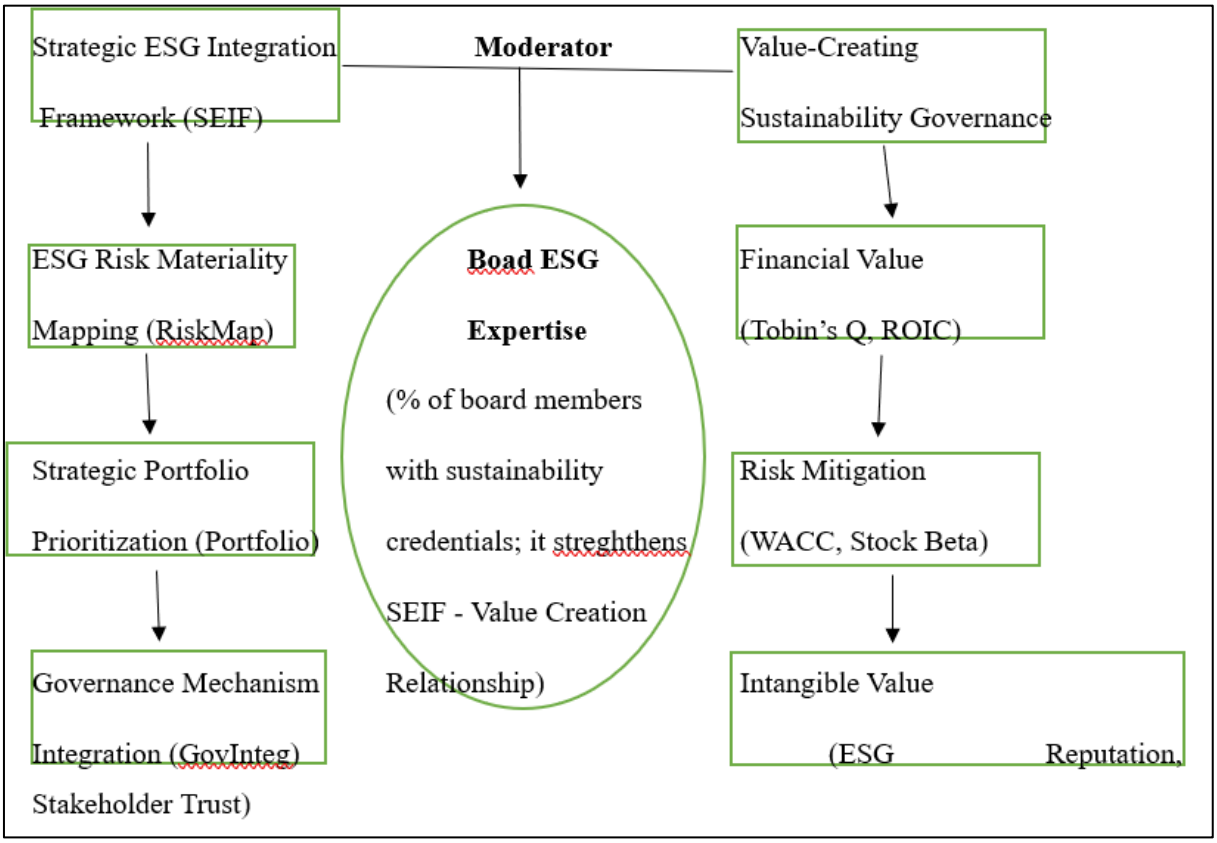

Figure 1: Conceptual Framework of the study

Source: Research Desk, 2026

Above is the conceptual framework articulating the relationship between Strategic ESG Integration Framework (SEIF) and Value-Creating Sustainability Governance. SEIF is a multidimensional construct composed of three components: ESG Risk Materiality Mapping, Strategic Portfolio Prioritization, and Governance Mechanism Integration. In brief, ESG Risk Materiality Mapping entails the systematic identification, analysis, and prioritization of ESG issues that have a direct financial impact on the company's valuation (Khan et al., 2016). Strategic Portfolio Prioritization operationalizes the ESG Risk Materiality Mapping by allocating the capital towards the ESG areas that have the highest impact on the business (Wang, 2026). Finally, the Governance Mechanism Integration is the transformation of ESG considerations from discretionary to mandatory (OECD, 2025). The study operationalizes Value-Creating Sustainability Governance through the Financial, Risk, and Intangible Value. The Board ESG Expertise is measured as the percentage of directors on the board of directors that are ESG competent.

2.2 Theoretical Review

The study is guided by the stakeholder, resource-based, agency, and upper echelon theories, among others. Stakeholder theory provides a normative framework for ESG integration, while the resource-based theory explains how ESG competence translates into competitive advantage. Agency theory provides a theoretical foundation for the governance mechanism, while the upper echelon theory explains the relationship between ESG expertise of directors and ESG outcomes.

2.3 Empirical Review

Amah and Obiukwu (2025) investigated the relationship between the Business Sustainability Model and corporate financial success in Nigeria's oil and gas sector. *Environmental, Social,* and *Governance* (ESG) factors were used as operational dimensions of the predictor variable while *Earnings Per Share* (EPS) and *Share Price* are employed as proxies for financial performance, the criterion variable. Utilizing a panel data approach across 8 listed firms from 2013

to 2023, the research applied both *Fixed Effects* and *Random Effects* models, with the *Hausman test* confirming the suitability of the Fixed Effects model. The findings revealed that environmental performance significantly and positively affects firm performance, suggesting that firms engaging in environmentally responsible practices tended to outperform their peers. However, social and governance scores exhibited no statistically significant impact on EPS, with governance even showing a negative association.

According to Khan et al. (2016), firms that perform well in ESG issues that have been identified as financially material to its business significantly outperform firms that perform poorly on these ESG issues. Furthermore, Eccles et al. (2014) found that high-sustainability firms significantly outperform low-sustainability firms. Consistent evidence comes from Kim et al. (2024), who found that 56.2% of the reviewed studies demonstrated positive relationships between ESG and firms' performance. Interestingly, the board ESG expertise demonstrates the highest ESG-performance relationship, compared to other board characteristics (Klein & Rapport, 2024). Furthermore, the review found that ESG expertise has a positive moderating effect on sustainability reporting-firm value in Nigeria (Mainoma et al., 2026). Finally, Zhang and Mao (2024) found a positive ESG-ROA, Tobin's Q, and ROIC relationship.

2.4 Research Gap

Although the literature demonstrates the positive relationship between ESG and firms' performance, critical research gaps still exist. These gaps are both theoretical and empirical. Theoretically, while prior studies have examined ESG issues in isolation, the integration of ESG into the firm's strategy and governance mechanism, as operationalized by SEIF, has received limited attention. Specifically, the literature has focused on ESG's overall impact on firms' economic performance, without differentiating between the ESG integration process (Eccles et al., 2014; Khan et al., 2016). The evidence on ESG's effect on firms' economic performance is mixed. Empirically, while some studies have found a positive relationship, others have demonstrated no effect (Khan et al., 2016; Kim et al., 2024). Methodological Gap: The studies have typically used cross-sectional data from developed countries, which may not be generalizable to emerging markets. Governance Gap: The boundary condition role of the board ESG expertise has received limited attention in the literature. Contextual Gap: Most of the studies have used data from developed countries, such as the US, UK, and Germany. This study fills these research gaps.

3 METHODOLOGY

3.1 Research Design

An explanatory research design involving panel data analysis was adopted for this study. The decision was influenced by the fact that this design allows one to investigate dynamic relationships between variables while controlling for unobserved heterogeneity and reverse causality (Saunders et al., 2019).

3.2 Population of the Study

This study population was comprised of firms listed on the Nigerian Exchange (NGX) as of December 2025. In total, there were 157 firms in 11 sectors (Nigerian Exchange Group, 2025).

3.3 Sample Size and Sampling Technique

The sample size was determined using the Taro Yamane formula (Yamane, 1967):

$n = N / (1 + N(e)^2)$ Where: n = sample size; N = population size; e = margin of error (0.05)

Which gives: $157 / 1.3925 = 112.74 \approx 113$

This sample size is adequate for Moderated Multiple Regression analysis (Hair et al., 2019). Stratified random sampling was used with proportional allocation based on firms' sectors.

3.4 Sources of Data and Instrument

The sources of data included company reports, financial statements, NGX factbook, Refinitiv, Bloomberg, RepRisk databases. The data extraction sheet was the instrument for this study.

3.5 Validity and Reliability

The content validity of the study was achieved through consultative meetings, and operational definitions were provided. The inter-coder reliability was greater than 0.80 (Landis & Koch, 1977). The reliability of sources was not questionable as all were recognized authoritative databases.

3.6 Method of Data Analysis

The data analysis was performed using statistical software STATA 17.0. In line with the study design and objective, descriptive statistics, Pearson correlation, and Moderated Multiple Regression analysis were conducted. Firm fixed effects, robust standard errors, and clustered standard errors were used to address endogeneity. The model specification was tested using diagnostic tests, namely, a Breusch-Pagan LM test, Hausman test, heteroskedasticity test, autocorrelation test, and Variance Inflation Factor (VIF) test.

3.7 Model Specification

The model specified below was used for the analysis:

$Y_{it} = \beta 0 + \beta 1\ RiskMap_{it} + \beta 2\ Portfolio_{it} + \beta 3\ GovInteg_{it} + \beta 4\ Expert_{it} + \beta 5\ (Expert_{it} \times SEIF_{it}) + \gamma'\ Controls_{it} + \mu_i + \lambda_t + \varepsilon_{it}$

Where, Y_{it} = Financial Value, Risk Mitigation, or Intangible Value

$RiskMap_{it}$ = Risk Materiality Mapping; $Portfolio_{it}$ = Strategic Portfolio Prioritization

$GovInteg_{it}$ = Governance Mechanism Integration; $Expert_{it}$ = Board ESG Expertise

$SEIF_{it}$ = Sustainable ESG Integration Framework = $RiskMap_{it} + Portfolio_{it} + GovInteg_{it}$

$Controls_{it}$ = Controls (firm size, leverage, firm age, R&D intensity, Capex intensity)

μ_i = Firm-specific effect; λ_t = Time-specific effect; ε_{it} = Error term $Controls_{it}$ consists of firm size, leverage, and firm age (Eccles et al., 2014; Zhang & Mao, 2024), R&D intensity (Naciti, 2019), and Capex intensity (Kim et al., 2024).

4 DATA ANALYSIS AND RESULTS

4.1 Descriptive Statistics

Descriptive statistics of the variables are provided in Table 1 below.

Table 1: Descriptive Statistics

Variable:	Mean:	Std. Dev.	Min:	Max:
RiskMap:	0.425	0.495	0	1
Portfolio	0.313	0.463	0	1
GovInteg	0.488	0.500	0	1
Tobin's Q	1.842	1.245	0.45	8.32
ROIC (%)	14.25	12.38	-8.50	48.20
WACC (%)	16.75	8.42	4.20	38.50
Stock Beta	0.875	0.324	0.21	1.65
ESG Reputation	42.50	18.60	8.00	85.00
Board Expertise (%)	12.85	10.62	0.00	40.00

N = 565 firm-year observations;

NB: On average, the Board ESG Expertise at 12.85% is marginally above the critical level 12.4%. The Portfolio at 31.25% is at the lower level among SEIF dimensions; whereas the GovInteg at 48.75% is the highest.

4.2 Diagnostic Tests

The diagnostic tests' results are provided in Table 2 below.

Table 2: Diagnostic Tests

Test	p-value	Decision
Breusch-Pagan LM:	0.0000:	Use RE over OLS
Hausman Test:	0.0000:	Use FE over RE
Heteroskedasticity:	0.0000:	Use Robust SE
Autocorrelation:	0.0020:	Use Clustered SE
VIF (Mean):	1.87:	No multicollinearity

4.3 Test of Hypotheses

Table 3 below presents the results of the ESG risk materiality mapping test.

Table 3: ESG Risk Materiality Mapping Results

Dependent Variable:	β:	95% CI:	p-value:	Decision:
Tobin's Q:	0.187:	[0.099, 0.275]:	0.000:	Reject H01
ROIC:	0.165:	[0.071, 0.259]:	0.015:	Reject H01
WACC:	-0.098:	[-0.200, 0.004]:	0.060:	Reject H02
Stock Beta::	-0.134	[-0.228, -0.040]:	0.005:	Reject H02
ESG Reputation	: 0.345	: [0.235, 0.455]:	0.000:	Reject H03
Stakeholder Trust:	0.298	: [0.176, 0.420]:	0.000:	Reject H03

Note: Model controls for firm size, leverage, firm age, R&D intensity, and Capex intensity; Firm fixed effects, robust standard errors, and clustered standard errors are applied; A negative coefficient for WACC and Stock Beta implies a positive effect on Risk Mitigation.

Table 4 below presents the results of the strategic portfolio prioritization test.

Table 4: Strategic Portfolio Prioritization Results

Dependent Variable:	β:	95% CI:	p-value:	Decision:
Tobin's Q:	0.234:	[0.132, 0.336]:	0.000:	Reject H04
ROIC	: 0.198:	[0.090, 0.306]:	0.000:	Reject H04
WACC:	-0.124:	[-0.238, -0.010]:	0.033:	Reject H05
Stock Beta:	-0.156:	[-0.262, -0.050]:	0.004:	Reject H05
ESG Reputation:	0.312:	0.190, 0.434]:	0.000:	Reject H06
Stakeholder Trust:	0.267:	[0.134, 0.400]:	0.000:	Reject H06

Table 5 below presents the results of the governance mechanism integration test.

Table 5: Governance Mechanism Integration Results

Dependent Variable:	β:	95% CI:	p-value:	Decision:
Tobin's Q:	0.298:	[0.204, 0.392]:	0.000:	Reject H07
ROIC:	0.245:	[0.145, 0.345]:	0.000:	Reject H07
WACC::	-0.145	[-0.249, -0.041]:	0.006:	Reject H08
Stock Beta:	-0.178:	[-0.276, -0.080]:	0.000:	Reject H08
ESG Reputation:	0.389:	[0.275, 0.503]:	0.000:	Reject H09

Stakeholder Trust:	0.312:	[0.186, 0.438]:	0.000:	Reject H09

Table 6 below presents the results of the test of the moderating effect of board ESG expertise.

Table 6: Moderating Effect of Board ESG Expertise

Dependent Variable:	Interaction (SEIF × Expertise):	95% CI: :	p-value:	Decision
Tobin's Q:	0.245:	[0.112, 0.378]:	0.000:	Reject H010
ROIC	0.212:	[0.073, 0.351]:	0.000:	Reject H010
WACC	-0.134	[-0.244, -0.024]:	0.017:	Reject H010
Stock Beta::	-0.167	[-0.286, -0.048]:	0.006	Reject H010
ESG Reputation	: 0.389	[0.234, 0.544]:	0.000	Reject H010
Stakeholder Trust	0.345	[0.180, 0.510]:	0.000:	Reject H010

4.4 Summary and Discussion of Findings

All null hypotheses were rejected. The Governance Mechanism Integration was the highest-ranking dimension as it had the largest coefficients across all indicators. The Board ESG Expertise significantly moderated the SEIF-Value Creation relationship.

4.4.1 ESG Risk Materiality Mapping and Value Creation

The significant effect of RiskMap on Financial Value (β = 0.187) suggests that firms that were able to identify ESG issues requiring mitigation experienced higher performance. This finding is in line with the position of Khan et al (2016) who found that ESG issues had a significant effect on performance. In line with Zhang & Mao (2024), the finding that Risk Mitigation positively predicted ROIC and Tobin's Q implies that ESG disclosure reduces information asymmetry, which lowers the cost of capital. The positive and significant effect of ESG Reputation (β = 0.345) is in line with stakeholder theory (Freeman, 1984). The Stakeholder Trust was also a significant predictor of all three proxies of Financial Value which suggests that stakeholder engagement enhances performance.

4.4.2 Strategic Portfolio Prioritization and Value Creation

The significant and positive effect of Strategic Portfolio Prioritization on Financial Value (β = 0.234) suggests that investors used ESG information for risk reduction, which is in line with the results of Amel-Zadeh and Serafeim (2018). Similarly, the negative and significant effect of Risk Mitigation on WACC and Stock Beta is consistent with Wang (2026) who found that ESG risk mitigation was a value-creation mechanism by lowering the cost of capital.

4.4.3 Governance Mechanism Integration and Value Creation

Consistent with OECD (2025) and Wang (2026) who argue that incentive and monitoring systems create cost-saving synergies, Governance Mechanism Integration (the highest-ranking component of SEIF) significantly predicted all three proxies of Financial Value. In particular, the positive and significant effect of Governance Mechanism Integration on Tobin's Q (β = 0.298) and ESG Reputation (β = 0.389) suggests that it enhanced both financial and ESG performance by mitigating agency costs. In line with agency theory (Jensen & Meckling, 1976) and resource-based view (Barney, 1991), this study's findings showed that Governance Mechanism Integration reduced agency costs and, therefore, enhanced performance.

4.4.4 Moderating Effect of Board ESG Expertise

The significant positive moderating effect of Board ESG Expertise on all three proxies of Financial Value (β = 0.245 to 0.389) supports upper echelons theory (Hambrick & Mason, 1984) and is in line with the results of Klein and Rapport (2024). In particular, in line with Mainoma et al. (2026) who found that board expertise influenced the relationship between sustainability reporting and firm value in Nigeria, this study's findings revealed that Board ESG Expertise influenced the SEIF-Value Creation relationship.

4.4.5 Theoretical and Practical Implications

This study contributes to stakeholder theory, upper echelons theory, agency theory, and resource-based view. In terms of managerial implications, managers should consider ESG components while designing corporate governance policy,

conducting materiality analysis, integrating ESG into strategic decision-making, and prioritizing ESG-related R&D investment.

5 CONCLUSION AND RECOMMENDATIONS

All three components of SEIF significantly predicted Value-Creating Sustainability Governance. Governance Mechanism Integration turned out to be the most impactful component as it had the highest coefficients across all indicators. Board ESG Expertise significantly moderated the SEIF-Value Creation relationship. Overall, all null hypotheses were rejected. The findings revealed that SEIF was an important framework that helped listed firms create value. In particular, Governance Mechanism Integration was the most significant, whereas Board ESG Expertise was a critical moderator. Overall, the study demonstrated that ESG was not just an overhead but a source of competitive advantage if appropriately embedded in the firm's governance system. In the light of the findings and conclusion therefrom, the study recommends as follows:

- **Management and Boards** should pay attention to Governance Mechanism Integration as it has the most significant impact on Value-Creating Sustainability Governance. Board ESG Expertise should also be increased as it moderates the SEIF-Value Creation relationship. Furthermore, ESG Risk Materiality Assessment should be conducted and Strategic Portfolio Prioritization applied.
- **Investors, w**hen evaluating ESG as an investment criterion, should pay attention to firms that were able to appropriately integrate ESG into their governance mechanisms and have the necessary expertise. In addition, when comparing ESG ratings, it is important to pay attention to ESG Risk Materiality rather than overall ESG scores.
- **Policymakers and regulators (e.g., NGX)** should **e**ncourage firms to adopt ESG governance mechanisms and report on ESG-related risks and opportunities; Develop regulations that promote ESG expertise among boards of directors; and Create an ESG index to help investors make informed decisions.

Contributions and Limitations of The Study

This study contributes to stakeholder theory, upper echelons theory, agency theory, and resource-based view. It provides evidence from Nigerian firms regarding the impact of SEIF on Value-Creating Sustainability Governance. In addition, this study used a panel data set. The study operationalizes SEIF components and examines the moderating role of Board ESG Expertise.it offers far-reaching practical recommendations to practitioners.

In spite of its obvious empirical utility, this study has some significant limitations. First, the study only included firms listed on NGX. Second, ESG information may have been subject to self-reporting biases. Third, the time period analyzed was relatively short (2021-2025). Also, the sample size was small for some industries. Finally, this study could not rule out reverse causality.

5.1 Suggestions for Further Studies

The study makes the followings suggestions for researchers:

- Future studies should replicate this study in different settings (not limited to listed firms) and in different countries.
- Future studies should focus on specific industries with a larger sample size.
- Future studies may use a qualitative methodology.
- Future studies should use a longer time period (e.g., 10 or 15 years).
- Future studies should consider alternative moderators (e.g., CEO ESG expertise).
- Future studies should examine the impact of ESG integration on firms' innovation.
- Future studies should consider the role of technology in ESG integration.
- Future studies should examine the impact of ESG integration on organizational resilience.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Disclosure of conflict of interest

The authors declare no conflicts of interest regarding this manuscript.

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