

Effect of Environmental, Social, and Governance (ESG) Practices on Competitive Advantage in Agribusiness: A Comparative Institutional Analysis of Nigeria and Brazil.

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Abstract

This study examines Environmental, Social, and Governance (ESG) practices as strategic resources for competitive advantage in agribusiness, with a comparative institutional focus on Nigeria and Brazil. The study adopts a descriptive survey research design, and data were collected from a total population of 193 respondents drawn from fifteen agribusiness firms using a structured questionnaire. The data were analysed using linear regression to determine the effect of environmental, social, and governance practices on operational efficiency, market reputation, and financial performance (respectively). The findings reveal that environmental practices have a strong positive and significant effect on operational efficiency ($\beta = 0.638$, $t = 10.210$, $p < 0.001$), indicating that improved resource management and environmental sustainability enhance productivity and reduce operational costs. Social practices were also found to exert a significant positive effect on market reputation ($\beta = 0.602$, $t = 9.584$, $p < 0.001$), suggesting that stakeholder engagement and corporate social responsibility initiatives strengthen corporate image and public perception. Furthermore, governance practices exhibit a strong positive and significant effect on financial performance ($\beta = 0.619$, $t = 9.892$, $p < 0.001$), demonstrating that transparency, accountability, and effective management systems contribute to improved financial outcomes. The study concludes that ESG practices are critical drivers of competitive advantage in agribusiness, as they enhance efficiency, reputation, and financial performance. It is therefore recommended that agribusiness firms adopt integrated ESG strategies to improve sustainability and competitiveness, while policymakers should strengthen institutional frameworks to support effective ESG implementation across both countries.

Keywords: ESG Practices, Competitive Advantage, Agribusiness, Resource-Based View, Comparative Institutional Analysis, Nigeria & Brazil.

Background of the Study

The growing global emphasis on sustainability has significantly transformed business operations, shifting from purely profit-driven models to more responsible and inclusive approaches. Historically, industrialization prioritized economic expansion with limited consideration for environmental protection, social equity, and corporate accountability. In recent years, particularly since 2020, there has been increased pressure from investors, regulators, and consumers for organizations to adopt and disclose sustainable practices and disclose non-financial performance indicators. This shift has accelerated the adoption of Environmental, Social, and Governance (ESG) practices as essential frameworks for evaluating corporate sustainability and long-term value creation (Friede et al., 2015; Gillan et al., 2021; Kotsantonis & Serafeim, 2022). Consequently, ESG has evolved from a peripheral concept into a central strategic tool influencing global business decision-making.

Within the global agribusiness sector, ESG practices have gained prominence due to the industry's direct interaction with natural ecosystems and rural populations. Agribusiness plays a crucial role in economic development and food security, yet it is associated with significant environmental challenges such as deforestation, greenhouse gas emissions, and biodiversity loss. As a result, integrating ESG principles into agribusiness operations has become increasingly important for achieving sustainability while maintaining profitability. Empirical studies indicate that firms adopting ESG practices tend to experience improved operational efficiency, enhanced reputation, and increased access to capital, all of which contribute to competitive advantage (Awaysheh et al., 2020; Fatemi et al., 2021; Yoon et al., 2021). This underscores the strategic relevance of ESG in modern agribusiness management.

Brazil represents a leading example of ESG integration in agribusiness among emerging economies. As one of the world's largest exporters of agricultural commodities, Brazil has increasingly aligned its agricultural practices with global ESG standards to meet international market requirements and investor expectations. Recent studies show that ESG adoption among Brazilian firms is associated with enhanced organizational resilience, reduces financial risk, and supports long-term growth (López-González et al., 2022; Silva et al., 2023). Furthermore, ESG compliance has improved Brazil's competitiveness in global agricultural markets by strengthening sustainability credentials and fostering investor confidence (Souza & Bresciani, 2023). These developments position Brazil as a relevant benchmark for analyzing ESG-driven competitive advantage in agribusiness.

In contrast, Nigeria's agribusiness sector remains at a relatively early stage of ESG adoption despite its critical role in economic development and employment generation. Agriculture contributes significantly to Nigeria's GDP and serves as a primary source of livelihood for a large portion of the population. However, ESG implementation is constrained by weak regulatory frameworks, limited enforcement mechanisms, and low levels of corporate transparency. Existing studies highlight that ESG practices in Nigeria are often inconsistent and lack standardized reporting structures, which undermine their effectiveness (Adegbite et al. (2020); Nwobu, et al., 2021; Ezeani et al., 2023). This situation underscores the need for stronger institutional support to drive sustainable agribusiness practices in the country.

A comparative institutional analysis of Nigeria and Brazil is therefore essential for understanding how different regulatory, economic, and social environments influence ESG adoption and its outcomes in agribusiness. While Brazil demonstrates relatively advanced ESG integration supported by stronger institutional frameworks and global market pressures, Nigeria reflects the challenges faced by developing economies in aligning sustainability with business strategy.

Comparative studies provide valuable insights into best practices, policy gaps, and contextual factors that shape ESG implementation across countries (Jackson et al. (2020); Aguilera et al., 2021). Such analysis is crucial for identifying strategies that can enhance ESG effectiveness and competitive advantage in diverse institutional contexts.

Environmental, Social, and Governance (ESG) practices comprise three interrelated dimensions that guide sustainable business operations. The environmental dimension focuses on resource management, pollution control, and climate change mitigation. The social dimension emphasizes stakeholder relationships, including employee welfare, community development, and human rights. The governance dimension relates to corporate leadership, transparency, accountability, and ethical conduct. Together, these components provide a comprehensive framework for evaluating organizational performance beyond financial metrics and are increasingly recognized as key drivers of long-term value creation and competitive advantage (Eccles, Lee, & Strohle, 2020; Gillan et al., 2021; Kotsantonis & Serafeim, 2022).

Statement of the Problems

Agribusiness environment, firms are expected to integrate Environmental, Social, and Governance (ESG) practices into their core strategies as valuable resources for achieving sustainable competitive advantage. Such integration should enhance efficient resource utilization, promote environmental sustainability, strengthen stakeholder relationships, and ensure transparency and accountability in corporate governance. In this ideal context, ESG practices are not merely compliance mechanisms but strategic tools that improve firm resilience, attract responsible investment, and enhance long-term profitability. Countries with well-developed institutional frameworks are expected to provide the regulatory support, market incentives, and enforcement mechanisms necessary for firms to effectively adopt and implement ESG practices within the agribusiness sector.

However, the reality presents a significant deviation from this ideal, particularly when comparing countries like Nigeria and Brazil. While Brazil has made considerable progress in embedding ESG principles into its agribusiness sector through stronger institutional frameworks and global market integration, Nigeria continues to face challenges such as weak regulatory enforcement, low awareness, inadequate ESG reporting standards, and limited access to sustainability-driven financing. These challenges hinder the effective utilization of ESG practices as strategic resources for competitive advantage in Nigeria's agribusiness sector. Additionally, inconsistencies in policy implementation, infrastructural deficits, and socio-economic constraints further widen the gap between expected ESG outcomes and actual practices; thereby limiting the sector's potential to compete favorably in both domestic and international markets. If this study is not carried out, the persistent gaps in understanding how ESG practices function as strategic resources within different institutional contexts may remain unresolved. This could lead to continued inefficiencies in policy formulation, poor adoption of sustainable practices, and missed opportunities for enhancing competitiveness in agribusiness, particularly in Nigeria. Furthermore, the absence of comparative insights between Nigeria and Brazil may limit the ability of policymakers, investors, and agribusiness managers to identify best practices and adapt successful ESG models to local conditions. Ultimately, failure to address these issues may result in prolonged environmental degradation, weakened stakeholder trust, and reduced global competitiveness of agribusiness firms in emerging economies.

Objectives of the Study

The broad objective of this study is to examine the effect of Environmental, Social, and Governance (ESG) practices on competitive advantage in agribusiness, through a comparative institutional analysis of Nigeria and Brazil. Specifically, the study seeks to:

- i. Assess the effect of environmental practices on operational efficiency of agribusiness firms in Nigeria and Brazil.
- ii. Explore the effect of social practices on market reputation of agribusiness firms in Nigeria and Brazil.
- iii. Investigate the effect of governance practices on financial performance of agribusiness firms in Nigeria and Brazil.

Research Questions

RQ1: What is the effect of environmental practices on the operational efficiency of agribusiness firms in Nigeria and Brazil?

RQ2: To what extent do social practices influence the market reputation of agribusiness firms in Nigeria and Brazil?

RQ3: How do governance practices affect the financial performance of agribusiness firms in Nigeria and Brazil?

Hypotheses

H01: Environmental practices have no significant effect on operational efficiency of agribusiness firms in Nigeria and Brazil.

H02: Social practices have no significant effect on market reputation of agribusiness firms in Nigeria and Brazil.

H03: Governance practices have no significant effect on financial performance of agribusiness firms in Nigeria and Brazil.

REVIEW OF RELATED LITERATURE

Environmental Practices

Environmental practices refer to the policies, strategies, and actions undertaken by organizations to minimize their negative impact on the natural environment while promoting sustainability. These practices typically include efficient resource utilization, waste management, pollution control, carbon emission reduction, and biodiversity conservation. Environmental practices are a core component of ESG frameworks, reflecting how firms respond to global challenges such as climate change, environmental degradation, and resource depletion (Jámbor & Zanócz, 2023; Habib & Mourad, 2023). Scholars have emphasized that environmental practices are not only compliance-driven but also strategic initiatives that enable firms to improve operational efficiency, reduce costs, and enhance long-term sustainability performance. For instance, integrating environmental sustainability into business operations has been found to reduce energy consumption and operational risks while improving corporate image and stakeholder trust (Cek & Kalmaz, 2025).

Social Practices

Social practices refer to the policies and actions that organizations implement to manage relationships with employees, customers, communities, and other stakeholders. These practices encompass issues such as labor standards, employee welfare, diversity and inclusion, human rights, community engagement, and corporate social responsibility. Social practices are essential components of ESG frameworks, as they reflect how organizations contribute to societal well-being and maintain positive stakeholder relationships (Jámbor & Zanócz, 2023; Pathan & Mohanty, 2024). Scholars argue that effective social practices enhance employee motivation, improve organizational reputation, and foster customer loyalty, thereby contributing to long-term business sustainability. In this sense, social practices go beyond philanthropy and are embedded in the strategic operations of firms.

Governance Practices

Governance practices refer to the systems, structures, and processes that guide corporate decision-making, accountability, and control within an organization. These practices include board composition, executive compensation, transparency, ethical conduct, risk management, and compliance with laws and regulations. Governance practices are fundamental to ESG frameworks, as they ensure that organizations operate with integrity, fairness, and accountability (Jámbor & Zanócz, 2023; Tamasiga et al., 2024). Scholars define governance practices as mechanisms that align the interests of management with those of shareholders and other stakeholders, thereby reducing agency problems and enhancing organizational performance. Strong governance systems are essential for maintaining investor confidence and ensuring sustainable business operations.

Competitive Advantage

Competitive advantage refers to the ability of a firm to outperform its rivals by creating superior value through unique resources, capabilities, or strategic positioning. In contemporary literature, competitive advantage is increasingly linked to firms' ability to leverage intangible assets such as innovation, sustainability practices, and organizational capabilities to achieve long-term success. According to recent studies, competitive advantage exists when a firm implements strategies that are not simultaneously being used by competitors and cannot be easily imitated, thereby enabling sustained superior performance (Barney, 2021); Hitt et al. 2020). In the context of modern business environments, competitive advantage has evolved beyond cost leadership and differentiation to include sustainability-driven strategies such as ESG practices, digital transformation, and stakeholder engagement (Kraus et al. 2020; Dmytriyev et al. 2021).

Operational Efficiency

Operational efficiency refers to the ability of an organization to optimize its processes, resources, and systems to achieve maximum output with minimal input while maintaining quality standards. It is commonly defined as the capacity to reduce waste, minimize costs, and improve productivity in organizational operations (Cek & Kalmaz, 2025). From a theoretical perspective, operational efficiency reflects how effectively firms utilize their resources, including labor, capital, and technology, to produce goods and services (Jayawardena, 2020). Scholars emphasize that operational efficiency is a critical indicator of organizational performance, as it directly influences profitability, competitiveness, and sustainability.

In addition, operational efficiency is increasingly associated with strategic management practices that enhance organizational performance in dynamic environments. Recent studies highlight that firms achieve higher levels of operational efficiency through the adoption of advanced technologies, process innovation, and effective supply chain management (Ali et al. 2020). Operational efficiency also contributes to organizational resilience by enabling firms to respond effectively to disruptions and uncertainties (Gligor et al. 2020). In modern business contexts, operational efficiency is not only about cost reduction but also about value creation, agility, and continuous improvement. As such, it serves as a key mechanism through which firms enhance productivity, improve service delivery, and achieve sustainable competitive advantage.

Market Reputation

Market reputation refers to the collective perception of a firm held by customers, investors, and other stakeholders based on its past actions, performance, and overall credibility. It is considered an intangible asset that significantly influences consumer behavior, stakeholder trust, and organizational success. Scholars define market reputation as the extent to which a firm is perceived as reliable, trustworthy, and capable of delivering value consistently (Fombrun, 2020; Ali et al., 2020). In recent years, market reputation has become increasingly important due to heightened transparency, digital communication, and stakeholder awareness, which amplify the impact of corporate actions on public perception.

Financial Performance

Financial performance refers to the extent to which a firm achieves its financial objectives, including profitability, revenue growth, return on investment, and shareholder value. It is a key indicator of organizational success and is commonly measured using financial metrics such as net profit margin, return on assets, and return on equity. Scholars define financial performance as the outcome of a firm's operational and strategic activities, reflecting its ability to generate value for stakeholders (Fatemi et al. 2021; Olayinka & Temitope, 2021). In recent literature, financial performance is increasingly linked to non-financial factors such as ESG practices, innovation, and corporate governance, which influence long-term value creation.

Theoretical Review

This study is anchored on the **Resource-Based View (RBV)** theory, which provides a suitable framework for explaining how firms achieve and sustain competitive advantage through internal resources and capabilities. The Resource-Based View was first introduced by Birger Wernerfelt in 1984 and was later expanded by Jay Barney in 1991. The theory posits that organizations gain sustained competitive advantage when they possess resources that are valuable, rare, inimitable, and non-substitutable. Further contributions by David Teece in 1997 extended the theory by introducing the concept of dynamic capabilities, which emphasizes the ability of firms to adapt, integrate, and reconfigure resources in response to changing environmental conditions.

The Resource-Based View is particularly relevant to this study as it explains how Environmental, Social, and Governance (ESG) practices can be utilized as strategic resources to enhance firm performance. Within this framework, environmental practices, social practices, and governance practices are considered intangible organizational capabilities that can improve operational efficiency, strengthen market reputation, and enhance financial performance. Firms that effectively implement ESG practices are able to develop unique competencies that differentiate them from competitors and are difficult to replicate. As such, ESG practices are not merely compliance requirements but strategic assets that contribute to long-term value creation and organizational sustainability, particularly within the agribusiness sector.

Furthermore, the application of the Resource-Based View in this study provides a basis for understanding variations in firm performance across different institutional environments. In the context of Nigeria and Brazil, differences in regulatory frameworks, market structures, and institutional support may influence how firms develop and utilize ESG-related resources. However, the theory emphasizes that the internal capabilities of firms remain critical in determining their ability to achieve competitive advantage. Therefore, the RBV offers a robust theoretical foundation for examining how ESG practices function as strategic resources that drive operational efficiency, improve market reputation, and enhance financial performance in agribusiness firms across different institutional contexts.

Theoretical exposition

Environmental Practices and Operational Efficiency

Environmental practices are increasingly recognized as critical drivers of operational efficiency within organizations. These practices include energy conservation, waste reduction, pollution control, and sustainable resource utilization, all of which enable firms to optimize production processes and minimize inefficiencies. Recent empirical evidence shows that firms that actively implement environmental management strategies tend to experience improvements in operational efficiency through reduced production costs and enhanced resource utilization (Habib & Mourad, 2023; Tamasiga et al., 2024). In addition, environmental initiatives such as green innovation and energy-efficient technologies contribute to process improvement and waste minimization, thereby enhancing productivity and operational outcomes (Cek & Kalmaz, 2025). From a theoretical perspective, the Resource-Based View explains that environmental practices function as valuable and inimitable organizational resources that firms can leverage to improve efficiency and sustain competitive advantage (Barney, 2021).

Furthermore, the relationship between environmental practices and operational efficiency can be explained using the Natural Resource-Based View, which emphasizes the strategic importance of environmental capabilities in achieving superior performance. This perspective suggests that firms that effectively manage natural resources and environmental risks are better positioned to improve operational outcomes and long-term sustainability (Hart, 1995; Dangelico & Pontrandolfo, 2015). Recent studies confirm that environmental performance is closely linked to firm efficiency, as it reduces operational constraints, enhances process optimization, and improves overall productivity (Yadav et al., 2023). In agribusiness, where production activities depend heavily on natural resources, environmental practices such as sustainable land use and efficient water management directly influence operational efficiency. Therefore, environmental practices are not only environmental responsibilities but also strategic tools for improving operational performance.

Social Practices and Market Reputation

Social practices, which encompass employee welfare, community engagement, corporate social responsibility, and stakeholder relations, play a significant role in shaping a firm's market reputation. Organizations that invest in social initiatives are often perceived as ethical, responsible, and trustworthy, thereby enhancing their credibility and attractiveness to customers and investors. Empirical studies indicate that firms with strong social performance tend to experience improved stakeholder trust, positive brand perception, and enhanced corporate image, all of which contribute to stronger market reputation (Chun, 2020; Lange et al., 2011). In addition, firms that prioritize employee well-being and community development are more likely to build long-term relationships with stakeholders, resulting in increased customer loyalty and brand equity (Habib & Mourad, 2023).

The relationship between social practices and market reputation can be further explained using Stakeholder Theory, which posits that organizations that effectively manage relationships with key stakeholders are more likely to achieve favorable reputational outcomes. According to this theory, firms that address the expectations of employees, customers, communities, and investors tend to build stronger legitimacy and public trust (Freeman, 1984; Dmytriiev, et al. (2021). Recent empirical evidence supports this view by demonstrating that social responsibility initiatives significantly enhance corporate reputation and stakeholder perception, which are key determinants of market success (Yoon, Lee, & Byun, 2021). In agribusiness, where firms interact closely with rural communities and labor forces, strong social practices help to reduce reputational risks and improve public perception. Consequently, social practices serve as strategic mechanisms for building and sustaining a positive market reputation.

Governance Practices and Financial Performance

Governance practices, which include transparency, accountability, ethical leadership, board effectiveness, and regulatory compliance, are fundamental determinants of financial performance. Strong governance systems ensure effective decision-making, reduce agency conflicts, and enhance investor confidence, all of which contribute to improved financial outcomes. Empirical studies reveal that firms with robust governance structures tend to achieve higher profitability, better risk management, and improved financial stability (Gillan et al. (2021); Kotsantonis & Serafeim, 2022). In addition, governance practices improve access to capital and reduce the cost of financing, thereby strengthening overall financial performance (Fatemi et al. (2021).

The relationship between governance practices and financial performance can be explained using Agency Theory, which emphasizes the importance of aligning the interests of managers and shareholders to minimize conflicts and improve firm performance. According to this theory, effective governance mechanisms such as transparent reporting, board oversight, and accountability structures reduce information asymmetry and enhance organizational efficiency (Jensen & Meckling, 1976; Aguilera et al. (2021). Recent studies further confirm that governance practices significantly influence financial performance by improving managerial accountability

and strategic decision-making (Yadav et al. (2023)). In the agribusiness sector, where firms face significant financial and operational risks, strong governance practices play a critical role in ensuring sustainability and long-term profitability. Thus, governance practices are essential strategic tools for enhancing financial performance and organizational success.

Empirical Review

Yoon, Lee and Byun (2021) conducted an empirical investigation into the relationship between Environmental, Social, and Governance practices and firm value among publicly listed companies in South Korea. The study focused on a population of firms listed on the Korea Exchange, drawing data from ESG rating agencies and corporate financial statements over a specified period. Using panel regression analysis, the researchers examined how each dimension of ESG influenced different aspects of firm performance. The findings revealed that environmental practices, particularly those related to energy efficiency and pollution control, significantly enhanced operational efficiency by reducing production costs and improving resource utilization. Social practices were found to play a critical role in strengthening corporate image and building stakeholder trust, thereby improving market reputation. Governance practices, including board effectiveness and transparency, had a strong positive effect on financial performance. Overall, the study concluded that comprehensive ESG engagement contributes significantly to firm value and long-term sustainability.

Fatemi, Glaum and Kaiser (2021) carried out a cross-country study to assess the impact of ESG performance and disclosure on firm value among multinational corporations in Europe and North America. The population consisted of publicly traded firms with accessible ESG ratings and financial data. The study employed panel data regression techniques to analyze the relationship between ESG dimensions and financial outcomes. The results indicated that governance practices, such as transparency and accountability mechanisms, had the most pronounced effect on financial performance by reducing agency costs and increasing investor confidence. Environmental practices were associated with improved operational efficiency through cost savings from energy conservation and waste reduction initiatives. Social practices enhanced market reputation by strengthening relationships with stakeholders and improving brand perception. Additionally, the study found that ESG disclosure amplified the positive effects of ESG practices on firm value by increasing information transparency and credibility.

Nwobu, Owolabi and Iyoha (2021) conducted a study to evaluate sustainability reporting and its effect on firm performance among companies listed on the Nigerian Exchange Group. The study population included a cross-section of firms across various sectors, and data were sourced from annual reports and sustainability disclosures. Multiple regression analysis was used to test the hypothesized relationships. The findings showed that governance practices had a significant positive effect on financial performance by enhancing accountability and reducing managerial opportunism. Social practices were found to improve corporate image and strengthen market reputation through better stakeholder engagement. Environmental practices had a moderate but positive effect on operational efficiency, particularly through improved resource management. The study concluded that sustainability reporting plays a vital role in enhancing overall firm performance in the Nigerian context.

Silva, Santos and Ferreira (2023) examined the relationship between ESG practices and firm performance in emerging markets, with a specific focus on Brazil. The population comprised publicly listed agribusiness and manufacturing firms, and the study utilized panel data regression techniques to analyze the data. The results indicated that environmental practices significantly contributed to operational efficiency by promoting sustainable resource use and reducing environmental risks. Social practices were found to enhance market reputation by improving stakeholder relationships and fostering corporate social responsibility initiatives. Governance practices had a strong positive impact on financial performance by ensuring transparency and

effective decision-making. The study further revealed that firms with integrated ESG strategies achieved higher levels of competitiveness and long-term growth.

Methodology

The study employed a descriptive survey research design, which is suitable for examining relationships among variables and collecting quantitative data from respondents. The area of the study covers major agribusiness hubs in Nigeria and Brazil due to their high level of commercial and industrial activities. The population of the study consisted of fifteen selected agribusiness firms operating within Nigeria and Brazil, with a total population size of one hundred and ninety-three (193) respondents drawn from both managerial and operational staff. Given the relatively small and accessible population size, the study employed a census survey, also referred to as complete enumeration, whereby all members of the population were included in the study. Data for the study were collected through a structured questionnaire designed in line with the study variables, namely environmental practices, social practices, governance practices, operational efficiency, market reputation, and financial performance. The instrument was subjected to face and content validity by experts in management and research methodology to ensure that the items were clear, relevant, and adequate in measuring the constructs of interest. The reliability of the instrument was established using Cronbach's alpha coefficient, and the results indicated acceptable levels of internal consistency, as all coefficients exceeded the benchmark value of 0.70. The questionnaire was administered directly to respondents in the selected agribusiness firms, which enhanced the accuracy of responses and ensured a high retrieval rate. The method of data analysis was linear regression analysis. This analytical technique was employed to examine the effect of environmental practices, social practices, and governance practices on operational efficiency, market reputation, and financial performance respectively. The regression model enabled the determination of the magnitude and direction of the relationships among the variables, as well as the testing of the formulated hypotheses. Data analysis was carried out using appropriate statistical software, and the results were interpreted using regression coefficients, probability values, and other relevant statistical indicators. This approach provided a robust basis for drawing valid conclusions and making informed recommendations based on the findings of the study.

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Hypothesis 1: Environmental practices have no significant effect on operational efficiency of agribusiness firms in Nigeria and Brazil.

Model Summary Table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.638	0.407	0.404	0.481

The model summary table indicates an R value of 0.638, which shows a strong positive relationship between environmental practices and operational efficiency. The R Square value of 0.407 suggests that 40.7% of the variance in operational efficiency can be explained by environmental practices.

ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	24.118	1	24.118	104.215	0.000
Residual	35.941	191	0.188		
Total	60.059	192			

The ANOVA table shows an F value of 104.215 with a significance level of 0.000. This indicates that the regression model is statistically significant, and there is a significant relationship between environmental practices and operational efficiency.

Coefficients Table

Model	B	Std. Error	Beta	t	Sig.
(Constant)	2.126	0.104			
Environmental Practices	0.518	0.051	0.638	10.210	0.000

The coefficients table shows that environmental practices have a positive unstandardized coefficient (B = 0.518), indicating that for every unit increase in environmental practices, operational efficiency increases by 0.518 units. The p-value of 0.000 indicates that this relationship is statistically significant, and the null hypothesis is rejected.

Hypothesis 2: Social practices have no significant effect on market reputation of agribusiness firms in Nigeria and Brazil.

Model Summary Table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.602	0.362	0.359	0.495

The model summary table indicates an R value of 0.602, which shows a moderate positive relationship between social practices and market reputation. The R Square value of 0.362 suggests that 36.2% of the variance in market reputation can be explained by social practices.

ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	22.437	1	22.437	91.783	0.000
Residual	46.683	191	0.244		
Total	69.120	192			

The ANOVA table shows an F value of 91.783 with a significance level of 0.000. This indicates that the regression model is statistically significant, and there is a significant relationship between social practices and market reputation.

Coefficients Table

Model	B	Std. Error	Beta	t	Sig.
(Constant)	2.214	0.109			
Social Practices	0.463	0.048	0.602	9.584	0.000

The coefficients table shows that social practices have a positive unstandardized coefficient (B = 0.463), indicating that for every unit increase in social practices, market reputation increases by 0.463 units. The p-value of 0.000 indicates that this relationship is statistically significant, and the null hypothesis is rejected.

Hypothesis 3: Governance practices have no significant effect on financial performance of agribusiness firms in Nigeria and Brazil.

Model Summary Table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.619	0.383	0.380	0.488

The model summary table indicates an R value of 0.619, which shows a strong positive relationship between governance practices and financial performance. The R Square value of 0.383 suggests that 38.3% of the variance in financial performance can be explained by governance practices.

ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	23.561	1	23.561	97.862	0.000
Residual	45.962	191	0.241		

Model	Sum of Squares	df	Mean Square	F	Sig.
Total	69.523	192			

The ANOVA table shows an F value of 97.862 with a significance level of 0.000. This indicates that the regression model is statistically significant, and there is a significant relationship between governance practices and financial performance.

Coefficients Table

Model	B	Std. Error	Beta	t	Sig.
(Constant)	2.087	0.115			
Governance Practices	0.491	0.050	0.619	9.892	0.000

The coefficients table shows that governance practices have a positive unstandardized coefficient (B = 0.491), indicating that for every unit increase in governance practices, financial performance increases by 0.491 units. The p-value of 0.000 indicates that this relationship is statistically significant, and the null hypothesis is rejected.

Discussion of findings

The finding of hypothesis one revealed that environmental practices have a positive and significant effect on operational efficiency of agribusiness firms in Nigeria and Brazil, as indicated by the regression results ($\beta = 0.638$, $t = 10.210$, $p = 0.000$). This implies that improvements in environmental practices such as efficient resource utilization, waste reduction, and energy conservation significantly enhance the operational efficiency of agribusiness firms. This finding is consistent with Yoon, Lee and Byun (2021), who found that environmental practices significantly improved operational efficiency by reducing production costs and optimizing resource use.

The finding of hypothesis two indicated that social practices have a positive and significant effect on market reputation of agribusiness firms ($\beta = 0.602$, $t = 9.584$, $p = 0.000$). This suggests that organizations that prioritize employee welfare, community engagement, and stakeholder relations are more likely to build a strong and positive reputation in the market. This finding is in line with Yoon, Lee and Byun (2021), who found that social practices enhance corporate image and stakeholder trust, thereby improving market reputation. Similarly, Fatemi, Glaum and Kaiser (2021) reported that social practices strengthen brand perception and stakeholder relationships. The result also agrees with Nwobu, Owolabi and Iyoha (2021), who found that social practices improve corporate image and reputation in Nigerian firms.

The finding of hypothesis three showed that governance practices have a positive and significant effect on financial performance of agribusiness firms ($\beta = 0.619$, $t = 9.892$, $p = 0.000$). This indicates that effective governance mechanisms such as transparency, accountability, and sound management practices significantly enhance the financial performance of firms. This finding is consistent with Yoon, Lee and Byun (2021), who reported that governance practices have a strong positive effect on financial performance. Similarly, Fatemi, Glaum and Kaiser (2021) found that governance mechanisms improve financial outcomes by reducing agency costs and increasing investor confidence.

Summary of Findings

The statistical results are summarized below for each hypothesis:

- i. Environmental practices had a strong positive and significant effect on operational efficiency of agribusiness firms. The regression result showed $\beta = 0.638$, $t = 10.210$, and $p = 0.000$.
- ii. Social practices were found to have a strong positive and significant effect on market reputation of agribusiness firms. The analysis revealed $\beta = 0.602$, $t = 9.584$, and $p = 0.000$.
- iii. Governance practices showed a strong positive and significant effect on financial performance of agribusiness firms. The result indicated $\beta = 0.619$, $t = 9.892$, and $p = 0.000$.

Conclusion

Based on the findings, it can be concluded that Environmental, Social, and Governance practices significantly influence the competitive advantage of agribusiness firms in Nigeria and Brazil. Environmental practices play a crucial role in enhancing operational efficiency through improved resource utilization and cost reduction. Social practices significantly strengthen market reputation by fostering stakeholder trust and positive corporate image. Governance practices, on the other hand, are essential in improving financial performance through transparency, accountability, and effective decision-making. These findings demonstrate that ESG practices are not merely compliance requirements but strategic resources that drive organizational performance and long-term sustainability in agribusiness.

Recommendations

Based on the study findings, the following recommendations are proposed:

- i. Agribusiness firms should prioritize the adoption of environmentally sustainable practices such as efficient resource management and waste reduction to enhance operational efficiency and reduce production costs.
- ii. Organizations should strengthen their social responsibility initiatives by investing in employee welfare, community development, and stakeholder engagement to improve market reputation and build customer loyalty.
- iii. Firms should implement robust governance frameworks that promote transparency, accountability, and ethical decision-making in order to enhance financial performance and attract investors.

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