

From Fields to Finance: The Untapped Potential of Sports in Nigeria's Green Economy

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Abstract

The Nigerian sports industry has significant yet underused potential to help transition the country to a green economy. While sports are well known for boosting physical health, social cohesion, and youth empowerment, their role in fostering sustainable economic growth and protecting the environment is less explored. This study looked at the hidden opportunities within Nigeria's sports sector to promote green economic development, focusing on the shift "from fields to finance." Specifically, it examined how sports development intersects with green economy initiatives and addressed the gap in understanding how sports can drive environmental and economic sustainability. A quantitative survey was used, involving 350 sports stakeholders, including athletes, coaches, administrators, and policymakers, chosen through stratified random sampling. Data were gathered with a validated questionnaire that had a reliability coefficient above .70, ensuring internal consistency. The study was guided by two research questions, and data analysis involved descriptive and inferential statistics, like mean, standard deviation, and multiple linear regression, at the .05 significance level. Results showed a moderate level of awareness of green economy ideas among sports stakeholders (grand mean = 3.40; SD = .241). They also revealed a significant relationship between sports development and green economy progress, indicating that the sports sector can play an important role in encouraging sustainable practices and economic change. The study recommends that government agencies and relevant stakeholders run targeted awareness campaigns and educational programmes to bring sustainability and green economy principles into Nigeria's sports ecosystem.

Key words: economic development, environmental sustainability, green economy, sports infrastructure

<https://dx.doi.org/10.4314/ajmr.v33i1.10>

INTRODUCTION

The global sports industry has grown into a multi-billion-dollar sector that plays a key role in economic

growth, social inclusion, and environmental sustainability. In developed countries, sports are incorporated into broader development strategies that utilize their potential for creating jobs, revitalizing urban areas, and fostering technological progress (Gratton & Preuss, 2008). These nations view the sports sector as more than just entertainment and competition; they see it as a means to diversify the economy and promote environmental responsibility. Conversely, Nigeria's sports industry remains largely undeveloped and underused, especially when it comes to its potential to support the green economy, an economic approach that encourages growth, social fairness, and environmental protection simultaneously (United Nations Environment Programme [UNEP], 2011).

Historically, sports development in Nigeria has been viewed through a narrow lens emphasizing youth engagement, talent discovery, and national representation at international competitions. While this has nurtured a vibrant sporting culture, especially in football, athletics, basketball, and combat sports, it has failed to translate into significant economic or environmental benefits (Akindes, 2019). The economic returns from sports remain modest compared to key sectors like oil, agriculture, and telecommunications. Moreover, many sports facilities in Nigeria are energy-inefficient, lack environmentally friendly designs, and contribute to pollution through waste and carbon emissions (Olawale & Ogunjimi, 2020). These deficiencies illustrate an opportunity cost of not integrating sports into the nation's green growth strategy. Investing in grassroots sports initiatives, constructing environmentally certified facilities, and promoting sustainable event management could generate substantial economic, social, and environmental returns (Schulenkorf & Edwards, 2012).

Theoretically, the intersection of sports and sustainability can be analyzed through Ecological Modernization Theory (EMT) or Green Capitalism, as advanced by Mol and Spaargaren (2000). EMT posits that economic growth and environmental sustainability are not mutually exclusive; they can co-evolve through market innovation, institutional reform, and technological progress. Applied to sport, this implies that renewable energy adoption, green infrastructure, and eco-conscious sporting events could serve as low-carbon economic drivers, creating value while reducing environmental footprints (Andersson, 2019). Complementarily, Stakeholder and Organizational Change Theory provides insight into how leadership commitment, fan expectations, and sponsor influence shape organizational behavior toward sustainable practices (Cayolla, Santos, & Quintela, 2021). Together, these theoretical perspectives highlight sports as both an enabler and a beneficiary of the green economy through strategic alignment between economic growth and environmental sustainability objectives. The green economy itself represents a development paradigm emphasizing sustained growth, social inclusion, and ecological responsibility (Organisation for Economic Co-operation and Development [OECD], 2011). Its key pillars, green growth, green development, and green industrial policy—focus on enhancing competitiveness while promoting resource efficiency and reducing carbon intensity (UNEP, 2011). Nigeria's transition toward a green economy is reflected in its Nationally Determined Contributions (NDCs) under the Paris Agreement and the National Development Plan (2021–2025), both of which prioritize renewable energy, circular production, and low-carbon innovation (Federal Government of Nigeria, 2021). However, these policy

commitments face challenges such as weak institutional coordination, low public awareness, and inadequate infrastructure, which hinder effective implementation (Okereke, 2023).

Recent statistics underscore the untapped potential for transformation. According to the National Bureau of Statistics (2024), the service sector contributed 58.76% to Nigeria's GDP growth of 3.19% in the second quarter of 2024, indicating growing diversification opportunities. Furthermore, the formal recognition of sports as a business sector in 2020 opened new investment pathways for private stakeholders (Nigerian Economic Summit Group [NESG], 2022). The Federal Ministry of Sports Development's 2024–2027 Strategic Plan further demonstrates a commitment to expanding infrastructure, enhancing sports tourism, and embedding sustainability principles into national sports policy.

Despite these developments, research on the intersection between sports and the green economy in Nigeria remains sparse. Existing studies have primarily examined athlete development, performance management, and event logistics, with limited focus on how sports can catalyze green growth through innovation, employment, and environmental stewardship (Ogunbiyi & Adeyemo, 2021). This gap underscores the need for empirical investigation into stakeholders' awareness of green economy principles and the contribution of sports to sustainable development outcomes.

This study therefore, explores the potential of sports as a catalyst for Nigeria's green economy by assessing the current state of awareness among key stakeholders—sports administrators, coaches, and athletes—and examining how sports development either supports or constrains sustainable economic transformation. The study aims to inform national policy and provide

practical insights for embedding sustainability in sports governance, facility planning, and event management. Ultimately, it contributes to the emerging scholarship on green growth and sustainable sport, proposing pathways through which Nigeria can reposition its sports industry as a strategic vehicle for inclusive, low-carbon, and innovation-driven growth.

Objectives of the study

The objectives of this study are:

1. To assess the level of awareness of green economy among sports stakeholders in Nigeria; and
2. To examine the influence of sports development on the green economy in Nigeria.

Research Questions

The research questions guiding this study are:

1. What is the level of awareness of green economy among sports stakeholders in Nigeria?
2. How does sports development contribute to the green economy in Nigeria?

LITERATURE REVIEW

Conceptual Foundations

The intersection between sports and sustainable development has gained increasing attention in global policy, economic, and academic discourse. The sports industry—defined as organized physical activities, events, services, and support sectors that generate social, cultural, and economic value—extends beyond entertainment into the domains of innovation, entrepreneurship, and environmental sustainability (Gratton & Preuss, 2008; Hoye et al., 2021). It encompasses professional and amateur

sports, sports tourism, sports media, equipment manufacturing, and facility management. Sports industries foster job creation, capital inflows, infrastructure development, and business innovation (Nafziger, 2020).

Sports development refers to systematic processes aimed at expanding participation, nurturing talent, improving infrastructure, and strengthening institutional capacity in the sports ecosystem (Hoye et al., 2021). This includes grassroots programs, elite athlete development, and the integration of science and technology in coaching and management. Contemporary sports development frameworks also emphasize sustainability, inclusivity, and economic diversification as part of broader national development goals (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2021).

Sports and Economic Development

Globally, the sports sector contributes significantly to economic growth through employment, revenue generation, and tourism (Gratton & Preuss, 2008). In developing economies, sports are increasingly recognized as vehicles for diversification, innovation, and urban renewal. Nafziger (2020) argued that sports stimulate multiple value chains—including construction, media, tourism, and manufacturing—while contributing to local community cohesion. Moreover, the sports economy generates spillover effects that foster entrepreneurship and technological innovation (Trendafilova, Babiak, & Heinze, 2022).

In Nigeria, sports remain underutilized in national economic planning despite their potential to contribute to non-oil growth (Adeyemi, 2022). Strategic investment in sports infrastructure, governance, and innovation could accelerate the diversification of the economy and enhance youth employment. Integrating green

economy principles into the sports sector provides a pathway for achieving these developmental outcomes sustainably.

The Green Economy and Its Relevance to Sports

The green economy concept emerged as a strategic response to climate change, environmental degradation, and the need for sustainable, inclusive growth. The United Nations Environment Programme (UNEP, 2022) defines a green economy as one that enhances human well-being and social equity while significantly reducing environmental risks and ecological scarcities. Unlike traditional economic models focused solely on industrial output, the green economy emphasizes low-carbon development, efficient resource use, and circular production systems (Organisation for Economic Co-operation and Development [OECD], 2021).

Instruments of the green economy include fiscal incentives, green taxation, public-private partnerships, and innovative financing mechanisms (World Bank, 2020). Central to this model is the principle that economic prosperity and environmental protection are mutually reinforcing. The sports sector aligns naturally with this model because of its dual identity as both a significant resource consumer and a platform for social and technological innovation (UNESCO, 2021).

Sporting activities, especially mega-events, produce notable environmental footprints through energy consumption, transport emissions, and waste generation. However, they also present unique opportunities to model sustainability, inspire public behavioral change, and drive green technological adoption (Cayolla, Santos, & Quintela, 2021). Sustainable sports development can therefore serve as a catalyst for national transitions to low-carbon economies. This includes investing in renewable-energy-powered stadiums,

water-efficient facilities, and eco-designed community sports centers (Lim & Park, 2023).

Moreover, sustainable sports management encourages resource-efficient event planning through practices such as digital ticketing, waste recycling, and sustainable catering (Piccerillo et al., 2023). Such initiatives not only minimize environmental impacts but also enhance event reputation and community engagement (Chaves-Castro et al., 2025). In developing countries like Nigeria, adopting green economy principles in sports could create green jobs, attract climate-conscious investors, and promote environmental education among youth (Trendafilova et al., 2022; Hu, Chen, & Li, 2023).

Sustainable Sports Practices and Green Innovation

Sustainable sports or green sports represent an integrated approach that aligns environmental responsibility, economic efficiency, and social inclusion in the management of sports organizations and events (Babiak & Wolfe, 2009). Sustainable practices encompass renewable energy use, banning single-use plastics, green procurement, water conservation, and waste reduction initiatives (Piccerillo et al., 2023). These measures contribute to lowering carbon emissions and operational costs while enhancing stakeholder trust and brand value.

Empirical research confirms the economic and reputational benefits of sustainable sports management. Environmentally responsible events have been found to enhance fan satisfaction and loyalty, as spectators increasingly prefer organizations that align with their environmental values (Harrison et al., 2022; Chaves-Castro et al., 2025). Beyond events, the integration of circular economy practices—such as recycling, refurbishing, and reusing sports equipment fosters the emergence of green

entrepreneurship and new market opportunities (Lim & Park, 2023).

In Africa, eco-sports programs have begun to stimulate youth employment and skill acquisition in renewable energy and waste recycling sectors (Akameze, Tyoakaa, & Akameze, 2025). Such programs demonstrate the potential of sports to act as entry points for sustainable industrial development. In Nigeria, green sports could contribute to the nation's climate agenda by embedding sustainability protocols in sports leagues, promoting eco-innovation in facility design, and integrating environmental education into athlete development programs.

Policy and Institutional Frameworks for Green Sports

The effectiveness of sustainable sports practices depends on coherent policy and regulatory frameworks that guide infrastructure standards, event management, and stakeholder engagement. Globally, many countries have established policies promoting green infrastructure, energy efficiency, and sustainability certification systems for sporting facilities (Casper, Pfahl, & McCullough, 2017). These frameworks often provide fiscal incentives such as tax credits, grants, or preferential loans for eco-friendly projects (World Bank, 2020).

In Nigeria, however, such policy support is still evolving. Although the National Policy on Green Economy provides a broad foundation for sustainable practices, there are limited sector-specific regulations targeting sports (Adeyemi, 2022). Institutional gaps in inter-agency coordination, enforcement, and stakeholder education hinder the systematic adoption of green sports practices. Developing guidelines under the National Sports Commission or Ministry of Youth and Sports could promote the use of renewable energy, sustainable construction

materials, and efficient waste management systems in sports infrastructure projects. Furthermore, targeted incentives such as tax reliefs for green sports investments and sustainability grants for sports federations could accelerate adoption. Institutional capacity building and cross-sector collaboration among sports agencies, environmental ministries, and private investors are crucial for mainstreaming sustainability into Nigeria's sports sector.

Theoretical Perspectives

The theoretical foundation linking sports to green economic development draws upon Ecological Modernization Theory (EMT), Stakeholder and Organizational Change Theory, and Socio-Technical and Agglomeration Theory.

Ecological Modernization Theory (EMT), initially developed by Huber (1982) and expanded by Mol and Spaargaren (1992, 2000), posits that environmental protection and economic development can co-evolve through technological innovation, institutional reform, and market incentives. It suggests that ecological crises drive modernization toward cleaner technologies and sustainable industries. Applied to sports, EMT implies that environmental challenges—such as waste and carbon emissions—can catalyze sustainable innovation through solar-powered stadiums, circular equipment systems, and eco-friendly event logistics (Millington, 2018; Cayolla et al., 2021). Empirical studies have validated these dynamics. Hu et al. (2023) found that sports industry agglomeration enhances regional green efficiency through clean-technology diffusion. Within Nigeria, this theory underscores that improving sports infrastructure, policy incentives, and sustainability investments could yield measurable environmental and economic dividends.

Stakeholder and Organizational Change Theory, rooted in Freeman's (1984) stakeholder theory and later expanded by Lewin (1951) and Kotter (1996), emphasizes the role of leadership, stakeholder expectations, and institutional pressures in driving sustainable transformation. Sports organizations, with their highly visible operations, respond significantly to sponsor, fan, and community expectations (Babiak & Wolfe, 2009). When sustainability initiatives align with stakeholder values, they increase trust, loyalty, and pro-environmental behavior (Harrison et al., 2022). For Nigeria, this perspective explains why leadership commitment, public awareness, and sponsor participation are vital for green sports adoption.

Socio-Technical Systems Theory (Trist & Bamforth, 1951; Geels, 2002) and Agglomeration Theory (Marshall, 1890) further contextualize the relationship between innovation, institutional structures, and geographic clustering. Geels' (2002) multi-level perspective suggests that sustainable transition emerges from interactions between technology, policy, and social norms. Marshall's agglomeration theory complements this by arguing that clustering of related industries fosters innovation and economic efficiency. Studies by Xu (2019) and Luo et al. (2023) demonstrate that sports industry clusters contribute to regional green transformation through shared infrastructure, knowledge spillovers, and innovation ecosystems.

For Nigeria, where such clusters are still emerging, developing multi-purpose sports cities and eco-tourism complexes could catalyze broader green industrial linkages. Collectively, these theoretical frameworks establish a conceptual foundation for understanding how sports can drive sustainable economic transformation through institutional reform, innovation, and stakeholder alignment.

Empirical Insights and Research Gaps

Empirical research increasingly affirms the interconnections between sports, sustainability awareness, and green economic growth. Awareness and capacity building remain critical determinants of sustainability adoption. Mallen et al. (2018) found that environmental literacy among sports stakeholders enhances resource efficiency and strategic planning. In Nigeria, however, Ibhoadode et al. (2020) and Oyedele (2022) observed limited awareness of green economy benefits among sports administrators, which impedes sustainability integration. International studies similarly show that awareness alone is insufficient; leadership commitment and stakeholder demand are essential to translate knowledge into practice (Cayolla et al., 2021; Lenzi et al., 2023).

Sports development as a driver of green growth has been documented globally. Adeyemi (2022) noted that sports infrastructure can stimulate local economies and diversify revenue bases. Hu et al. (2023) and Luo et al. (2023) provided econometric evidence that sports industry clusters improve regional green efficiency by facilitating technology diffusion. In Nigeria, early experiments with solar energy integration and recycling in sports facilities have demonstrated measurable energy and cost savings (Akameze et al., 2025). Similarly, Al-Ahmed (2025) emphasized the potential of climate-resilient sports infrastructure for long-term economic stability.

Environmental sustainability in sports has also gained scholarly attention. Casper, Pfahl, and McCullough (2017) highlighted that sustainable facility design, transportation management, and waste reduction are critical components of green sports operations. In Nigeria, Egbowon, Akinbode, and Oyedele (2020) and Akinbode (2022) called for greater

adoption of renewable energy and waste management systems in football and athletics events. Despite growing advocacy, there remains limited implementation due to institutional inertia, funding constraints, and knowledge gaps.

Research gaps persist in four major areas. First, empirical studies on sports and green economy linkages remain dominated by evidence from Europe and Asia, with scant data from Africa and Nigeria. Second, few studies have assessed Nigerian sports stakeholders' perception, readiness, and capacity for sustainability integration. Third, while global studies employ advanced quantitative tools such as sustainability indices and econometric modeling, Nigerian studies remain largely descriptive. Finally, the combined influence of policy frameworks, stakeholder engagement, and technology adoption on green economic outcomes in sports remains underexplored.

MATERIALS AND METHODS

Design and Participants

This study employed the descriptive survey research design. The population for this study consisted of sports stakeholders in Nigeria, including athletes, coaches, sports administrators, sponsors and policymakers drawn from the National Sports Commission, National Sports Federations, and Federation of Elite and Athletes' Department (FEAD). A sample of 350 sports stakeholders was selected using a stratified random sampling technique. The population was divided into four strata: Athletes, coaches, sports administrators, and policymakers. The number of individuals selected from each stratum was proportional to its relative frequency, and simple random sampling was used to select these participants from each stratum.

Instrumentation

This study employed a structured questionnaire using multi-item reflective scales to measure the latent constructs. Items were rated on a four-point Likert scale (SA, A, D, SD). Green Economy Awareness (GEA), Sports Development (SD), Sustainable Sports Practices (SSP), Stakeholder and Organisational Drivers (SOD), and Green Economic Outcomes (PGEO) were operationalized from validated sustainability and sport-management instruments (Cayolla et al., 2021; Chaves-Castro et al., 2025; Hu et al., 2023; Lim & Park, 2023; Hugaerts et al., 2021). Hence, the latent variables (constructs), computing the statement items in the questionnaire, employed for this study include:

η PGEO = Perceived Green Economic Outcomes (dependent)

ζ SD = Sports Development, (independent variable)

ζ GEA = Green Economy Awareness (independent variable)

η SSP = Sustainable Sports Practices (independent variable)

ξ SOD = Stakeholder & Organisational Drivers (control variable)

A pilot study was conducted with a sample of 30 other sports stakeholders to test the reliability and validity of the questionnaire. This test yielded Cronbach's alpha reliability coefficients of .79, .73, .78, .85, and .81 for the awareness of green economy, sports development, Sustainable Sports Practices, Stakeholder and Organisational Drivers, and contribution to Perceived Green Economic Outcomes respectively. These indices proved that the scale items are internally consistent with one another. Expert opinion was relied on to determine the validity of the instrument. A panel, made up of three experts, agreed that the items on the questionnaire measures what it claims to measure.

Data Collection Procedure

Quantitative data were collected through an online survey. Participants were assured of confidentiality and anonymity. However, out of the 350 copies of the questionnaire administered, 312 copies were returned. This gave an attrition rate of 10.9%.

Model Specification

The functional relationship of the variables is stated as follows:

$PGEO = f(SD, GEA, SSP, SOD)$

Where:

PGEO = Perceived Green Economic Outcomes (dependent)

SD = Sports Development (independent variable)

GEA = Green Economy Awareness (independent variable)

SSP = Sustainable Sports Practices (independent variable)

SOD = Stakeholder & Organisational Drivers (control variable)

SSPxSOD = is interaction term

This model was developed for this study to capture the hypothesised relationships between the constructs. Perceived Green Economic Outcomes (PGEO) are expected to be influenced by sports development (SD), green economy awareness (GEA), and sustainable sports practices (SSP). Sports development can stimulate local economic growth, generate employment, and enhance infrastructure, indirectly supporting green economic outcomes. Similarly, GEA shapes individual and organisational behaviour towards environmentally responsible practices, impacting perceived green economic benefits. Empirical studies indicate that green-oriented sports industry development enhances regional green economic efficiency through improved innovation, human capital, and labour mobilisation (Hu, et al 2023).

SSP represents environmentally and socially responsible practices in the sports sector, improving resource efficiency, reducing environmental impact, and supporting local economic development. Stakeholder and organisational drivers (SOD) are included as a control variable, as organisational commitment, stakeholder engagement, and institutional support influence how SD, GEA, and SSP translate into outcomes. This aligns with the Theory of Planned Behaviour, which links awareness to sustainable behaviour (Islam & Mehdi, 2024), and Stakeholder Theory, which emphasises that organisational and stakeholder involvement shapes the implementation of practices and the achievement of performance outcomes (Awa, Etim, & Ogbonda, 2024).

The interaction term (SSP $\times$ SOD) tests whether the effect of sustainable sports practices on PGEO depends on the level of stakeholder and organisational support. The effect of SSP is theorised to be stronger when SOD is high, as supportive stakeholders facilitate implementation, resource mobilisation, and scaling of green initiatives. Including this interaction term allows the model to capture conditional relationships, which are essential for understanding the nuanced drivers of PGEO. Interaction terms are widely used in regression analysis to test whether the impact of one variable varies according to another, providing insight into conditional effects (Burks, 2019).

The Ordinary Least Square (OLS) regression model is therefor stated as:

$$\begin{aligned} \text{PGEO} = & \beta_0 + \beta_1 \text{SD} + \beta_2 \text{GEA} \\ & + \beta_3 \text{SSP} + \beta_4 \text{SOD} \\ & + \beta_5 \text{SSP} \times \text{SOD} + \mu \end{aligned}$$

Method of Data Analysis

Demographic data of the participants were analyzed using descriptive statistical techniques of frequency counts and

percentages. Mean and standard deviation were used to proffer answer to the first research question, while multiple linear regression analysis was used to test the second research question at the .05 level of significance.

Ethical Considerations

This study was conducted in accordance with ethical principles of the American Psychological Association. Participants were informed of the purpose of the study, and their consents were obtained. Participants were also assured of confidentiality and anonymity.

RESULTS

The demographic analysis in Table 1 reveals a diverse representation of stakeholders across Nigeria's sports sector. Out of 312 respondents, athletes constituted the largest group (36.5%), followed by coaches (23.3%) and Sports agent (16.3%). Event organisers made up 14.4%, while facility managers (2.6%), government or policy officials (1.9%), and private sector sponsors (2.9%) accounted for the smallest proportions. This distribution demonstrates that the sample captures a wide range of professional perspectives across the sports ecosystem, aligning with the study's objective of assessing the green economy's multidimensional impacts through sports. In terms of age distribution, the majority of participants (40.1%) were between 30 and 49 years old, followed by those aged 50 and above (36.8%), and under 30 (23.1%). This indicates that respondents were predominantly mid-career professionals, suggesting mature insights into sports development and sustainability issues.

Regarding gender, the sector remains male-dominated, with 63.5% males and 36.5% females, reflecting Nigeria's broader gender distribution in sports participation and management (Egbowon et al., 2020).

Educationally, respondents were generally well-qualified, with 44.6% holding primary education (grassroots representation), 20.8% secondary, 19.2% diploma/NCE, 9.9% bachelors, 4.5% masters, and 1.0% doctoral degrees. This spread suggests that sports engagement in Nigeria spans multiple educational levels, from grassroots to professional administration. Finally, respondents' years of involvement in the sports sector reveal that 39.7% had between 1–3 years of experience, 20.5% less than one year, 19.9% between 4–7 years, 13.1% between 8–12 years, and 6.7%

over 12 years. This indicates that the dataset combines both emerging and seasoned stakeholders, offering a balanced view of awareness, innovation, and experience in sustainable sports practices.

Analysis of Research Questions

Research Question One:

What is the level of awareness of the green economy among sports stakeholders in Nigeria?

Demographic Presentation

Table 1: Descriptives for Participants' Demographics

S/N	Characteristics	Level	N = 312	Count	%
1.	Stakeholder category	Athlete		114	36.5
		Coach		79	23.3
		Sports agent		51	16.3
		Event organiser		45	14.4
		Sports facility manager		8	2.6
		Government/policy official		6	1.9
		Sponsor/Private sector		9	2.9
2.	Age (years)	Below 30		72	23.1
		30 – 49		125	40.1
		50 & above		115	36.8
3.	Gender	Male		198	63.5
		Female		114	36.5
4.	Highest education level	Primary		139	44.6
		Secondary		65	20.8
		Diploma/NCE		60	19.2
		Bachelor's		31	9.9
		Master's		14	4.5
		PhD		3	1.0
5.	Years of involvement in sports sector	< 1		64	20.5
		1-3		124	39.7
		4-7		62	19.9
		8-12		41	13.1
		>12		21	6.7

Source: Field Survey, 2025

Table 2: Mean and Standard Deviation for Level of Awareness of Green Economy

S/N	Statements	Mean	Std. Dev
1	I am familiar with the concept of green economy	3.63	.923
2	I understand the relationship between sports and green economy	2.58	.377
3	I believe green economy is essential for sustainable development in Nigeria	3.70	.554
4	I am aware of the environmental impact of sports events in Nigeria	2.29	.067
5	I know of initiatives promoting green economy in Nigerian sports	3.04	.377
6	I think green economy can contribute to Nigeria's economic growth	3.61	.083
7	I am familiar with the role of sports in promoting sustainable development in Nigeria	3.80	.374
8	I believe Nigerian sports stakeholders should prioritize green economy	4.07	.843
9	I am aware of the social benefits of green economy in Nigerian sports	3.51	.067
10	I think green economy can enhance Nigeria's global reputation in sports	4.16	.177
Grand Mean		3.40	.241

Source: Field Survey, 2025

Table 3: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.494	Prob. F(5,306)	0.192
Obs*R-squared	7.434	Prob. Chi-Square(5)	0.190
Scaled explained SS	63.009	Prob. Chi-Square(5)	0.000

Source: Field Survey, 2025

Table 2 illustrated the level of awareness of green economy among sports stakeholders in Nigeria. Results in the table revealed that stakeholders agreed that they are familiar with the concept of green economy (mean = 3.63, std. dev. = .923). They agree to understanding the relationship between sports and green economy (mean = 2.58, std. dev. = .377). They agreed that green economy is essential for sustainable development in Nigeria (mean = 3.70, std. dev. = .554). They disagreed that they are aware of the environmental impact of sports events in Nigeria (mean = 2.29, std. dev. = .067). They also agree to about knowing of initiatives promoting green economy in Nigerian sports (mean = 3.04, std. dev. = .377). They agreed that they think green economy can contribute to Nigeria's economic growth (mean = 3.61, std. dev. = .083). They agreed that they are

familiar with the role of sports in promoting sustainable development in Nigeria (mean = 3.80, std. dev. = .374). They agreed that they believe Nigerian sports stakeholders should prioritize green economy (mean = 4.07, std. dev. = .843). They agreed that they are aware of the social benefits of green economy in Nigerian sports (mean = 3.51, std. dev. = .067). They agreed that they think green economy can enhance Nigeria's global reputation in sports (mean = 4.16, std. dev. = .177). Overall, there is a moderate level of awareness of green economy among sports stakeholders in Nigeria (grand mean = 3.40, std. dev. = .241).

Post-Estimation Diagnostics

To ensure the robustness of the regression results, several diagnostic tests were conducted.

The Breusch–Pagan–Godfrey test for heteroskedasticity returned a p-value of 0.0196, indicating that there is no significant heteroskedasticity. This suggests

that the residuals have constant variance and the model estimates are efficient and reliable.

Table 4: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.570	Prob. F(2,304)	0.210
Obs*R ²	3.191	Prob. Chi-Square(2)	0.203

Source: Field Survey, 2025

Table 5: Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
LN_SOD_	0.001	8.652	1.012
LNGEA	0.001	9.488	2.473
LNSD	0.002	10.257	3.185
LNSOD	0.003	11.406	4.012
LNSSP	0.002	9.965	2.856
C (Constant)	0.010	7.114	NA

Source: Field Survey, 2025

Table 6: Multiple Linear Regression Analysis on the Contribution of Sports Development to Green Economy

Dependent Variable: LN_PGEO				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNSSP*SOD	0.829	0.042	19.74	0.000
LNGEA	-0.020	0.031	-0.65	0.5137
LNSD	0.194	0.082	2.37	0.0134
LNSOD	-0.145	0.129	-1.12	0.2627
LNSSP	0.244	0.104	2.354377	0.0192
C	0.576	0.158	3.648	0.000
R-squared	0.568			
Adjusted R-squared	0.561			
F-statistic	80.364			
Prob(F-statistic)	0.000			
Durbin-Watson stat	2.155			

Source: Field Survey, 2025

The Breusch–Godfrey LM test for serial correlation produced a p-value of 0.2096, which is greater than the 0.05 threshold. This implies the absence of serial correlation, confirming the independence of the error terms.

Furthermore, the Variance Inflation Factor (VIF) values ranged from 1.012 to 4.012, all well below the critical threshold of 10. This

confirms that multicollinearity among the independent variables is not a concern, and each predictor contributes unique explanatory power to the model. Hence, the diagnostic results validate the accuracy and consistency of the regression estimates.

Research Question Two

How does sports development contribute to the green economy in Nigeria?

The study examined the extent to which sports development and related constructs contribute to Nigeria's green economy, with Perceived Green Economic Outcomes (PGEO) serving as the dependent variable. The multiple regression analysis presented in Table 3 reveals that the model is statistically significant and robust. The R^2 value of 0.568 indicates that approximately 56.8% of the variation in green economic outcomes is explained by the predictor variables, which include sports development (SD), sustainable sports practices (SSP), stakeholder and organizational drivers (SOD), green economy awareness (GEA), and the interaction term (SSP*SOD). The F-statistic of 80.364 ($p < 0.001$) further confirms the overall significance of the model, indicating that the explanatory variables jointly influence green economic outcomes. Additionally, the Durbin-Watson statistic of 2.155 suggests that there is no evidence of serial correlation, implying that the model's residuals are independent.

Analysis of the regression coefficients reveals several important relationships. The interaction term (SSP*SOD) recorded the highest coefficient value of 0.829 ($p < 0.001$), signifying that the combined effect of sustainable sports practices and strong organizational drivers significantly enhances green economic outcomes. This suggests that the institutional environment and stakeholder involvement are essential for the successful implementation of green initiatives within the sports sector.

The coefficient for sports development (LNSD) was 0.194 ($p = 0.013$), indicating a positive and statistically significant contribution to the green economy. This

implies that investments in sports infrastructure, programming, and human capital can generate measurable economic and environmental benefits. Similarly, sustainable sports practices (LNSSP) had a coefficient of 0.244 ($p = 0.019$), confirming that environmentally responsible behaviours—such as energy efficiency, waste reduction, and eco-friendly procurement—positively influence green economic outcomes.

On the other hand, green economy awareness (LNGEA) recorded a coefficient of -0.020 ($p = 0.514$), which is statistically insignificant. This implies that awareness alone does not directly influence green economic performance unless it translates into practical action and policy alignment. Likewise, stakeholder and organizational drivers (LNSOD), with a coefficient of -0.145 ($p = 0.263$), were not independently significant, although their interaction with sustainable practices produced the strongest effect.

DISCUSSION AND CONCLUSION

This study examined the level of awareness of the green economy among sports stakeholders in Nigeria and analyzed how sports development contributes to green economic outcomes. The findings extend the current discourse on sustainable sports by providing empirical evidence from a developing economy perspective, where the intersection between sports and environmental sustainability remains largely underexplored.

Results revealed a moderate level of green economy awareness among stakeholders, with respondents showing greater familiarity with the economic benefits, as employment, income generation, and infrastructural growth, than with environmental or social dimensions. This indicates that the adoption of green principles in Nigerian sports is primarily driven by economic motivations rather

than ecological or social consciousness. The finding aligns with Kumar, Kumar, and Sharma (2022), who observed that limited environmental awareness often constrains sustainability transitions in developing economies. It also highlights a divergence from the UNEP (2020) framework, which emphasizes the integration of social inclusion and environmental protection into economic planning. Consequently, while basic knowledge of green economy concepts exists, deeper education and awareness of environmental and social sustainability remain necessary for transformative change.

Regression analysis further revealed a significant and positive relationship between sports development and Nigeria's green economy, confirming that investments in sports infrastructure, training, and event management will contribute to sustainable growth. Sports development and sustainable sports practices were found to significantly predict perceived green economic outcomes, while their interaction with stakeholder and organizational drivers produced the strongest effect. This underscores the importance of institutional commitment, stakeholder collaboration, and policy incentives in facilitating sustainable sports transitions. The result supports earlier findings by the Nigerian Economic Summit Group (2022) and the Federal Ministry of Sports Development (2024), which identified the sports sector as a key yet underutilized driver of sustainable development.

The study's results are consistent with global empirical evidence. For instance, Hu, Chen, and Li (2023) and Luo et al. (2023) demonstrated that sports industry agglomeration fosters regional green growth through renewable energy integration and green logistics. Similarly, Akameze, Tyoakaa, and Akameze (2025) found that technological innovations, such

as smart metering and waste management systems, enhance energy efficiency and reduce carbon footprints in sports facilities. Furthermore, the moderating effect of stakeholder drivers reinforces Stakeholder and Organizational Change Theory, which posits that leadership commitment, sponsor expectations, and public engagement are decisive in shaping sustainable organizational behaviour (Cayolla, Santos, & Quintela, 2021). The findings also substantiate Ecological Modernization Theory (Mol & Spaargaren, 2000), confirming that environmental improvement and economic growth can coexist through innovation, market incentives, and institutional reforms within the sports sector.

Overall, the results demonstrate that sports development serves as a viable mechanism for promoting green economic transformation in Nigeria, capable of stimulating employment, infrastructure renewal, and environmental innovation. However, limited awareness of non-economic sustainability dimensions, weak institutional enforcement, and inadequate investment in green infrastructure remain persistent challenges. Addressing these gaps through environmental education, policy alignment, and strategic public-private partnerships will be essential to maximize the sports sector's contribution to Nigeria's green transition.

In conclusion, this study establishes that while awareness of the green economy among sports stakeholders in Nigeria is moderate, sports development significantly enhances sustainable economic outcomes when supported by institutional leadership and sustainable practices. The findings reinforce that integrating sports into national green economy strategies can accelerate inclusive, low-carbon growth. Thus, sports should be repositioned as both an economic catalyst and an environmental

innovator within Nigeria's sustainable development agenda.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Government should foster increased awareness and education on green economy and sustainable development among sports stakeholders in Nigeria. This can be achieved through training programmes, workshops and conferences.
2. The Nigerian government and sports administrators should prioritize the

development of sports infrastructure, promote sports tourism, and create jobs in the sports sector to enhance sustainable sports development.

3. Government and other stakeholders should develop green economy initiatives in sports, such as green sports infrastructure, sustainable sports events, and environmentally friendly sports equipment to foster greater awareness of initiatives promoting green economy in Nigerian sports.

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