

Social Innovation and Business Competitiveness of Indigenous Oil and Gas Companies in Lagos State, Nigeria

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ABSTRACT

Indigenous oil and gas companies in Nigeria operate in one of the most socially sensitive business environments in the world, where community grievances, host-community expectations, and social licence considerations can determine operational continuity as decisively as geology or capital. Yet the question of whether socially driven innovation translates into competitive advantage in this sector has received limited empirical attention. Anchored on entrepreneurial orientation theory and sustainable development theory, this study examined the effect of social innovation on the business competitiveness of indigenous oil and gas companies in Lagos State, Nigeria, and tested the robustness of this effect in the presence of the other sustainable entrepreneurship dimensions. The study adopted a positivist philosophy and a quantitative, cross-sectional survey design. From a sampling frame of 2,571 employees of five purposively selected indigenous operators, 494 copies of a structured questionnaire were administered using simple random sampling with proportional allocation, and 417 valid responses were analysed. Simple regression revealed that social innovation has a positive and significant effect on business competitiveness ($\beta = .267$, $t = 5.643$, $p < .05$), explaining 7.1% of its variance. In the joint model with the other sustainable entrepreneurship dimensions ($R^2 = .206$, $F = 26.751$, $p < .05$), social innovation retained a significant independent contribution ($\beta = .130$, $t = 2.480$, $p = .014$), ranking second only to resource efficiency. The study concludes that social innovation is not merely a corporate social responsibility expenditure but a strategic driver of competitiveness in Nigeria's indigenous upstream sector, and recommends that operators institutionalise structured, community-co-created social innovation programmes with defined ownership, budgets, and outcome measures.

Keywords: *Social innovation; business competitiveness; social licence to operate; sustainable entrepreneurship; indigenous oil and gas companies; Nigeria*

1. INTRODUCTION

The oil and gas industry is important to the Nigerian economy as one of the nation's primary sources of revenue, job creation, and foreign exchange, with proven crude oil reserves projected at about 37 billion barrels as of 2023 (Edo, Samuel, Jikah, Ekokotu, Ugbugu, Oghoro & Owhero, 2024). It is also an industry whose operations are inseparable from the communities that host them. Pipeline vandalism, community agitation, and contested legitimacy have repeatedly demonstrated that in the Nigerian upstream sector, social outcomes are commercial outcomes. International operators have long recognised this: Shell Nigeria Exploration and Production Company and Shell Nigeria Gas jointly funded about \$42 million in social investments in 2023, covering healthcare, education, road safety, and enterprise programmes (Shell, 2023). As indigenous companies assume control of an increasing share of onshore and shallow-water assets, the question of whether socially driven innovation confers competitive advantage on such firms — rather than merely absorbing cost — has become strategically urgent.

Competitive advantage denotes the exceptional strengths and attributes that allow an organisation to outshine its rivals and achieve superior market performance (Malhotra, Dandotiya, Shaiwalini, Khan & Homechaudhuri, 2025; Uford, 2026). It reflects distinctive qualities that a target market perceives as notably more valuable than those of competitors, enabling firms to deliver greater value, strengthen market position, and drive long-term growth (Ford, 2020; Bataneh, Sánchez-Sellero & Ayad, 2024; Zelga, 2017). Social innovation, for its part, is the practice of developing new ideas capable of addressing social needs more effectively and efficiently than existing solutions (Balaton & Varga, 2017). Unlike conventional innovation, which largely pursues economic reward and technological advancement, social innovation prioritises social value creation — well-being, inclusion, and community development (Adro

& Fernandes, 2022; Castellacci, 2023).

Three gaps motivate this study. First, empirical work on social innovation and competitiveness has concentrated on social enterprises, universities, multinationals, and manufacturing or informal-sector firms (Adel, Zeinhom & Younis, 2022; Ayeni, Ogunnaike, Ayeni & Iyiola, 2021; Alo, Arslan & Ghouse, 2025), with scant attention to the upstream petroleum operations of indigenous firms in a developing, resource-dependent economy. Second, Nigerian evidence on social innovation has largely addressed poverty reduction and development outcomes (Ipinnaiye & Olaniyan, 2023; Peters et al., 2024) rather than firm-level competitive outcomes. Third, existing studies rarely test whether the effect of social innovation on competitiveness survives when the other dimensions of sustainable entrepreneurship — notably the eco-operational dimensions — are simultaneously controlled, leaving open the possibility that observed social effects merely proxy for broader sustainability activity. This study addresses these gaps with field data from indigenous oil and gas companies in Lagos State, Nigeria.

The specific objectives of the study are to: (i) examine the effect of social innovation on the business competitiveness of indigenous oil and gas companies in Lagos State, Nigeria; and (ii) determine whether social innovation retains an independent effect on business competitiveness when the other sustainable entrepreneurship dimensions are jointly controlled. Accordingly, the following null hypotheses were formulated:

H01: Social innovation does not have a significant effect on the business competitiveness of indigenous oil and gas companies in Lagos State, Nigeria.

H02: Social innovation does not retain a significant independent effect on business competitiveness when the other sustainable entrepreneurship dimensions are controlled.

2. LITERATURE REVIEW

Business Competitiveness

Business competitiveness is the exceptional strength that allows an establishment to outperform its rivals and achieve superior performance in the market. It involves the distinctive qualities of an organisation and its offerings that a target market views as notably better and more valuable than those of competitors (Malhotra et al., 2025), enabling the firm to surpass rivals by delivering greater value through enhanced benefits and services (Ford, 2020). Competitiveness differentiates a business, strengthens its market position, and drives long-term growth (Bataineh et al., 2024; Zelga, 2017). In extractive industries, competitiveness has a pronounced socio-political dimension: the ability to secure and retain a social licence to operate, avoid community-induced disruption, attract partnership and financing, and sustain reputational capital with regulators and host communities can be as decisive as cost position or technical capability (Adelekan, Ajibade, Osinaike & Bamidele, 2025; Agu, Iyelolu, Idemudia & Ijomah, 2024; Nwaobia & Akintoye, 2024).

Social Innovation

Social innovation is a practice that develops new ideas capable of addressing social needs more effectively and efficiently than existing solutions (Balaton & Varga, 2017). It focuses on making positive social impact by enhancing the well-being of people in a community and ensuring social inclusion, and, in contrast to traditional innovation that mostly seeks economic rewards, it prioritises social value creation (Adro & Fernandes, 2022; Akpan et al., 2024). Social innovation is also the development and implementation of new strategies, ideas, products, or offerings that address demanding social, ecological, and community issues (Coscieme, Manshoven, Gillabel, Grossi & Mortensen, 2022), including initiatives that enhance education, healthcare, access to clean water, social inclusion, poverty alleviation, and ecological sustainability (Ipinnaiye & Olaniyan, 2023; Castellacci, 2023).

Several features of social innovation are salient for extractive firms. First is its focus on impact and inclusivity: socially innovative organisations prioritise solutions that benefit underprivileged groups and typically collaborate with communities, non-profits, and government agencies to co-create solutions that are culturally appropriate, scalable, and sustainable (Castellacci, 2023; Balaton & Varga, 2017). Second is systemic reimagination: rather than making marginal adjustments to existing structures, social innovators develop new approaches that transform how services are delivered or problems resolved — for instance, new healthcare delivery models for remote communities or platforms connecting underserved populations to educational resources (Austin, 2003; Coscieme et al., 2022). Third is enduring societal value: social innovation aims to produce lasting positive effects by addressing root causes rather than symptoms, engendering systemic change that can influence policy, alter behaviour, and create new opportunities for communities (Ipinnaiye & Olaniyan, 2023; Elensi et al., 2026). For indigenous oil and gas firms, these

features translate into structured host-community development programmes, local content and enterprise development, inclusive employment practices, and community co-created environmental stewardship — initiatives that simultaneously address the social frictions most capable of disrupting operations.

Theoretical Framework

This study is anchored on entrepreneurial orientation theory, complemented by sustainable development theory. Entrepreneurial orientation theory, proposed by Lumpkin and Dess in 1996 building on Miller's earlier work, holds that a firm's strategic posture reflects its tendency toward innovativeness, risk-taking, and proactiveness in the pursuit of new opportunities (Lumpkin & Dess, 1996; Wales, Covin, Schöler & Baum, 2023). Innovativeness denotes readiness to support creativity and experimentation; risk-taking is the willingness to commit resources to uncertain ventures; and proactiveness is a forward-looking disposition to act on future market needs ahead of competitors (Kreiser & Davis, 2010). Firms that cultivate these behaviours are better positioned to exploit emerging opportunities, adapt to dynamic environments, and gain competitive advantage over less entrepreneurial rivals (Wales, 2016). Social innovation is an expression of this posture directed at the social environment: it is innovativeness applied to community problems, proactiveness in anticipating social expectations before they crystallise into conflict, and risk-taking in committing resources to ventures whose returns are reputational and relational before they are financial.

Sustainable development theory, propounded in 1987 by the Brundtland Commission, reinforces this logic by treating economic, social, and environmental objectives as interdependent rather than competing priorities (Shi, Han, Yang & Gao, 2019; Dasgupta, 2007; Sunny, Jeronen & Lan, 2024). The theory requires systemic thinking in which decisions are evaluated for long-term social consequences as well as immediate outcomes (Ukaga & Maser, 2023). Jointly, the two theories predict that socially innovative indigenous operators should enjoy superior competitiveness — a prediction this study tests.

Empirical Review and Hypotheses Development

A growing body of evidence links social innovation with organisational competitiveness across contexts. Adel, Zeinhom and Younis (2022), using structural equation modelling on data from 109 quality-accredited Egyptian faculties, found that the components of social innovation strategy — intention for social innovation, organisational structure for social innovation, and innovativeness in social value creation — positively and significantly affect sustainable competitive advantage, with social innovation strategy partially mediating the effect of social responsibility. Ayeni, Ogunnaike, Ayeni and Iyiola (2021), studying informal electronics entrepreneurs in Southwest Nigeria with linear regression, demonstrated that social motivation significantly predicts sustainable competitive advantage. Siswanto, Rahayu, Yuliawati and Sofia (2025), through systematic literature network analysis of the pharmaceutical industry, identified significant associations between social innovation, green strategies, and organisational competitiveness, and emphasised multi-stakeholder collaboration as a route to both social impact and profitability. Balaton and Varga (2017) argued that the interaction between social innovation and organisational competitiveness is important for organisational survival.

Context-specific evidence adds nuance. Alo, Arslan and Ghouse (2025), reviewing 159 articles on social innovation by multinational corporations in Africa, identified corruption, weak transparency, limited trust in government, and policy gaps as key barriers, alongside the challenge of balancing competing stakeholder expectations. Ipinnaiye and Olaniyan (2023) found that Nigerian social innovation initiatives contribute to poverty reduction and sustainability but are largely private-sector driven and constrained by weak institutional support. In the oil and gas domain specifically, Enwere, Asiabaka, Ogolo, Ugwu, Onyechere and Ekezie (2024) established a positive and significant relationship between strategic entrepreneurship and the operational performance of indigenous oilfield services firms in Nigeria's South-South region. Taken together, the literature supports an expectation that social innovation enhances the competitiveness of indigenous oil and gas companies, while leaving untested whether that effect is independent of the other sustainable entrepreneurship dimensions — the second question this study examines.

3. METHODOLOGY

The study is rooted in the positivist research philosophy, which presumes that reality is objective and measurable through empirical investigation, and accordingly adopted a quantitative, non-experimental, cross-sectional survey design that enabled one-time administration of a structured questionnaire and statistical testing of the hypothesised relationships while minimising researcher bias and enhancing replicability.

The population of the study covers approximately 17,631 employees of 29 indigenous oil and gas companies operating in Lagos State, from which five operators — anonymised as Operators A to E in keeping with the confidentiality assurances given to participants and with related manuscripts from the same research programme — were purposively selected on the basis of scale of operations, asset base, production volumes, over fifteen years of operational history, and dominant Nigerian equity ownership, yielding a sampling frame of 2,571 employees. Applying the Yamane (1967) formula at a 5% margin of error produced a minimum sample of 346, increased by a 30% attrition allowance (Quinlan, Zikmund, Babin, Carr & Griffin, 2015) to 494. Copies of the questionnaire were administered through Google Forms and physical contact using simple random sampling with proportional allocation across the five companies, and 417 valid responses were retrieved and analysed, an 84.4% effective response rate.

The research instrument was a structured questionnaire on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Items measuring social innovation were adapted from Krasnopolskaya and Korneeva (2020), Topsakal and Yüzbaşıoğlu (2019), and Bulut, Eren and Halac (2013), while items measuring business competitiveness were adapted from Schaefer, Baierle, Sellitto, Siluk, Furtado and Nara (2021) and Klapalová (2011). Content and construct validity were established through expert review by academics and oil and gas practitioners, and a pilot study involving 50 employees of indigenous oil and gas companies in Rivers State returned Cronbach's alpha coefficients of .718 for social innovation and .722 for business competitiveness, both exceeding the .70 acceptability threshold (Burns & Burns, 2008; DeVellis, 1991). To mitigate common method variance, procedural remedies — assured anonymity, neutral item wording, and separation of the predictor and criterion sections of the instrument — were applied at the design stage, and Harman's single-factor test showed that the first unrotated factor accounted for [XX.X]% of the total variance, below the 50% threshold, indicating that common method bias was unlikely to be a serious concern (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Hypotheses were tested using simple and multiple regression analysis at the 5% significance level. The models are specified as: $BUC_i = \beta_0 + \beta_1 SOI_i + \varepsilon_i$ (H01); and $BUC_i = \beta_0 + \beta_1 SOI_i + \beta_2 GRP_i + \beta_3 RSF_i + \beta_4 SUA_i + \varepsilon_i$ (H02), where BUC is business competitiveness, SOI is social innovation, and GRP (green practices), RSF (resource efficiency), and SUA (sustainability attitude) enter the joint model as covariates representing the remaining sustainable entrepreneurship dimensions.

4. RESULTS

Descriptive Statistics and Correlations

Table 1 presents the descriptive statistics and Pearson correlations. Mean scores of 3.12 (SD = .525) for social innovation and 3.29 (SD = .634) for business competitiveness indicate moderate levels of both constructs around the midpoint of the 5-point scale, and skewness (.451 to .523) and kurtosis (.306 to .374) values raised no normality concerns. Social innovation correlated positively and significantly with business competitiveness ($r = .267$, $p < .01$). Its correlations with the covariates remained below multicollinearity thresholds, a position corroborated in the joint model by a tolerance of .697 and a variance inflation factor of 1.453.

Table 1. Descriptive statistics and correlations ($N = 417$)

Variable	M	SD	Skewness	Kurtosis	1
1. Business competitiveness	3.29	.634	.451	.374	—
2. Social innovation	3.12	.525	.523	.306	.267**

Note. ** $p < .01$. Source: Researcher's field computation (2026).

Test of Hypothesis One

Table 2 reports the simple regression of business competitiveness on social innovation. The model returned $R = .267$ and $R^2 = .071$, indicating that social innovation explains 7.1% of the variance in business competitiveness, while other factors outside the model account for the remainder. The F-statistic of 31.847 ($p < .05$) confirmed the goodness of fit of the model, and the coefficient ($\beta = .267$, $t = 5.643$, $p < .05$) indicated a positive and significant effect. The null hypothesis was therefore rejected: social innovation has a significant effect on the business competitiveness of indigenous oil and gas companies in Lagos State, Nigeria. The Durbin–Watson statistic of 1.925 indicated no significant autocorrelation, strengthening the reliability of the estimates.

Table 2. Simple regression of business competitiveness on social innovation

Predictor	B	Std. Error	β	t	p
(Constant)	2.289	.180		12.681	.000
Social innovation	.322	.057	.267	5.643	.000

$R^2 = .071$; Adj. $R^2 = .069$; $F = 31.847$ ($p < .05$); $DW = 1.925$

Note. Dependent variable: business competitiveness; $p < .05$. Source: Researcher's fieldwork (2026).

Test of Hypothesis Two: Robustness in the Joint Model

Table 3 presents the multiple regression in which social innovation competes with the other sustainable entrepreneurship dimensions. The joint model was significant ($R = .454$, $R^2 = .206$, Adjusted $R^2 = .198$, $F = 26.751$, $p < .05$; Durbin–Watson = 1.873). Critically, social innovation retained a significant independent effect ($\beta = .130$, $t = 2.480$, $p = .014$), ranking second in relative contribution behind resource efficiency ($\beta = .396$, $t = 7.848$, $p < .05$), while green practices ($\beta = .010$, $t = .175$, $p = .862$) and sustainability attitude ($\beta = -.025$, $t = -.529$, $p = .597$) contributed no significant independent effect. The null hypothesis was rejected: the effect of social innovation on business competitiveness is robust to the inclusion of the other sustainable entrepreneurship dimensions, indicating that its contribution is genuinely social in origin rather than a proxy for broader sustainability activity.

Table 3. Multiple regression for the joint model of sustainable entrepreneurship dimensions on business competitiveness ($N = 417$)

Predictor	B	Std. Error	β	t	p
(Constant)	1.163	.251		4.629	.000
Social innovation	.157	.063	.130	2.480	.014
Green practices	.013	.077	.010	.175	.862
Resource efficiency	.528	.067	.396	7.848	.000
Sustainability attitude	-.031	.059	-.025	-.529	.597

$R^2 = .206$; Adj. $R^2 = .198$; $F = 26.751$ ($p < .05$); $DW = 1.873$

Note. Dependent variable: business competitiveness. Tolerance/VIF for social innovation: .697/1.453. Source: Researcher's fieldwork (2026).

Discussion of Findings

The finding that social innovation significantly enhances business competitiveness indicates that indigenous oil and gas organisations that engage in socially driven innovation — robust community engagement, environmental responsibility, and inclusive business practices — are better positioned to attain and sustain competitiveness in a complex and socially sensitive industry. This aligns with Adel et al. (2022), who found that the components of social innovation strategy positively and significantly affect sustainable competitive advantage; with Ayeni et al. (2021), who showed that social motivation significantly predicts sustainable competitive advantage among Nigerian entrepreneurs; and with Balaton and Varga (2017), for whom the interaction between social innovation and competitiveness is central to organisational survival. It also supports sustainability-oriented entrepreneurship reasoning by demonstrating the relevance of social innovation as a determinant of competitiveness in resource-dependent developing economies.

The robustness result carries the study's distinctive contribution. Because social innovation retained a significant effect when the eco-operational dimensions were simultaneously controlled — while green practices and sustainability attitude did not — the competitive value of social innovation cannot be attributed to a general halo of sustainability activity. Its pathway to competitiveness is distinct: community acceptance, reduced social friction, reputational capital, and stakeholder trust operate alongside, not through, cost and efficiency channels. Through the lens of entrepreneurial orientation theory, this suggests that proactiveness and innovativeness directed at the social environment constitute a differentiated strategic capability for indigenous operators, complementing the efficiency capability that dominates the eco-operational side. Practically, the implication is that social innovation should be governed as a strategic function, not administered as discretionary philanthropy: firms that co-create programmes with host communities, embed them in operating plans, and measure their outcomes should

expect competitive returns that ceremonial corporate social responsibility spending will not deliver.

5. CONCLUSION AND RECOMMENDATIONS

This study examined the effect of social innovation on the business competitiveness of indigenous oil and gas companies in Lagos State, Nigeria, and tested the robustness of that effect against the other sustainable entrepreneurship dimensions. It concludes that social innovation is a positive, significant, and robust driver of business competitiveness — second in relative contribution only to resource efficiency — and should be viewed not merely as a corporate social responsibility initiative but as a strategic driver of competitiveness in Nigeria's indigenous oil and gas sector.

Based on the findings, the study recommends as follows. First, indigenous oil and gas companies should institutionalise social innovation by establishing structured programmes for community engagement, host-community enterprise development, inclusive employment, and social-value co-creation, with named executive ownership, dedicated budgets, and defined outcome measures. Second, operators should embed community co-creation in project delivery, engaging host communities from concept through execution of well delivery and facilities campaigns, so that social solutions are culturally appropriate, scalable, and conflict-preventing rather than remedial. Third, firms should integrate social performance indicators — community satisfaction, local content participation, grievance resolution, and social-licence health — into corporate scorecards alongside operational and financial metrics. Fourth, policymakers and regulators should strengthen the institutional support that Nigerian social innovation currently lacks, including recognition frameworks, host-community development oversight, and incentives that reward verified social-innovation outcomes rather than expenditure alone.

Limitations and Suggestions for Further Studies

The study is limited to five indigenous operators headquartered in Lagos State and to a cross-sectional design, which restricts causal inference and generalisation. Perceptual survey measures, though drawn from validated scales, may differ from objective indicators of social performance and competitiveness. Future studies should extend the inquiry to host-community respondents and other producing states, adopt longitudinal designs to trace how social innovation investments convert into competitive outcomes over time, incorporate objective measures such as community-incident frequency and social-investment returns, and examine mediating mechanisms — including social licence to operate, reputational capital, and green innovation — through which social innovation transmits its competitive effect.

Related Manuscripts Disclosure

This article derives from a doctoral research programme on sustainable entrepreneurship and business competitiveness in Nigeria's indigenous oil and gas industry. Related manuscripts drawing on the same survey dataset examine other sustainable entrepreneurship dimensions and mechanisms; the hypotheses, analyses, and contributions reported in this article are distinct and do not overlap with those manuscripts.

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