

Impact of Entrepreneurship and Innovation on Sustainable Development in Nigeria

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Abstract

This study explores the influence of entrepreneurship and innovation on Nigeria's sustainable development, highlighting key enablers and barriers within a complex socio-economic landscape. Using hierarchical regression analysis of data from North Central Nigeria, findings reveal that access to resources and technological adoption are the most significant drivers of sustainable outcomes. Resource availability alone accounts for over 50% of sustainability variance, underscoring its foundational importance, while technological integration further enhances positive impacts. Although policy, cultural factors, and entrepreneurial motivation exhibit positive associations, their individual effects are less statistically significant, suggesting context-dependent roles. The results emphasize the need for targeted policies that improve resource mobilization, streamline regulations, and foster innovation ecosystems. Promoting technological capacity and aligning socio-cultural values with sustainability principles are vital for resilient, long-term socio-economic growth. This research offers actionable insights for policymakers, development agencies, and entrepreneurs committed to leveraging innovation for Nigeria's sustainable future.

Keywords: sustainable development, entrepreneurship, innovation, resource access

Background to the Study

Nigeria's socio-economic landscape is complex and multifaceted, having experienced significant changes driven by a combination of internal factors and external influences. The country continues to face persistent challenges such as economic diversification, high unemployment rates, environmental degradation, and widening social inequalities. These issues underscore the urgent need for sustainable development strategies that can promote resilient economic growth while addressing social and environmental concerns (Akanbi & Oje, 2015). Nigeria's commitment to achieving the Nigerian National Sustainable Development Goals (NSDGs), aligned with the global Sustainable Development Goals (SDGs), reflects a national aspiration to foster sustainable growth. However, the realization of these goals remains elusive due to systemic barriers like inadequate infrastructure, inconsistent policy implementation, limited technological capacity, and insufficient institutional support (Nwankwo & Ijeoma, 2017).

Recent socio-economic disruptions, particularly the COVID-19 pandemic, have further exposed vulnerabilities within Nigeria's economic and health systems. The pandemic has disrupted traditional business operations, increased unemployment, and highlighted the importance of innovation and resilience among entrepreneurs. Many business owners have had to pivot rapidly

to digital platforms and adopt sustainable practices to survive and thrive in these turbulent times. This situation emphasizes the critical role of technological adaptability and innovative capacity in entrepreneurial resilience, especially during crisis periods.

In addition to systemic challenges, socio-cultural factors such as traditional beliefs, gender norms, and community expectations influence entrepreneurial behaviors and decision-making processes. Despite government initiatives like the Nigerian Enterprise Development Programme and various youth entrepreneurship schemes aimed at fostering an enabling environment, entrepreneurs still face significant obstacles. These include bureaucratic red tape, limited access to finance, insufficient entrepreneurial training, and socio-cultural barriers that may inhibit women and marginalized groups from fully participating in sustainable entrepreneurship.

Given these dynamics, this study is motivated by the need to understand what drives entrepreneurs towards sustainable practices within this challenging environment. It aims to identify the key enablers—such as access to resources, supportive policies, and technological tools—and barriers—like regulatory hurdles, financial constraints, and socio-cultural limitations—that influence the capacity of entrepreneurs to adopt sustainable and resilient business models. Furthermore, the study seeks to evaluate how recent disruptions, including the COVID-19 pandemic, have reshaped entrepreneurial strategies and their ability to implement sustainable solutions.

The overarching goal is to generate actionable insights and policy recommendations that can enhance the entrepreneurial ecosystem in Nigeria. By examining these factors, the research will contribute to understanding how systemic and socio-cultural influences can be managed or leveraged to promote sustainable development. Ultimately, this study aims to support policymakers, development agencies, and entrepreneurs themselves in creating an environment conducive to sustainable and resilient entrepreneurship, which is essential for Nigeria's socio-economic transformation and long-term growth. The specific objectives—assessing motivations, identifying barriers and enablers, analyzing the impact of socio-economic disruptions, and providing strategic recommendations—are all aligned with addressing these critical issues, thereby contributing to the broader goal of sustainable development in Nigeria

Literature Review

Access to resources is widely recognized as a key determinant of entrepreneurial success and innovation. Research such as Ayyagari et al. (2011) highlights that financial capital, natural and human resources, and social networks are essential facilitators for entrepreneurs to launch and maintain innovative ventures. In Nigeria, limited resource availability presents notable challenges; however, government initiatives and infrastructure improvements can help alleviate these constraints. Osoba (2014) emphasizes that policy measures positively influence resource mobilization for entrepreneurs. The effective utilization and availability of resources directly impact entrepreneurs' ability to pursue sustainable innovation, aligning with findings by Nwankwo et al. (2019), who stress the importance of resource access in fostering sustainable entrepreneurship.

The policy and regulatory landscape significantly influence entrepreneurial innovation. According to the World Bank (2018), flexible regulatory frameworks and supportive policies encourage the development of sustainable business models, whereas bureaucratic obstacles often impede progress (Akinboade & Kinfack, 2019). In Nigeria, government programs and incentives are crucial for nurturing sustainable entrepreneurship, yet regulatory bottlenecks still limit innovation potential. This highlights the necessity for policy reforms that strike a balance between regulation and entrepreneurial freedom to advance sustainable practices, as suggested by Oduro et al. (2020).

Entrepreneurial motivation—especially the desire to address social and environmental issues—serves as a vital catalyst for sustainability-oriented innovation. Scholars like Schaltegger et al. (2016) argue that intrinsic motivation driven by social impact encourages entrepreneurs to pursue environmentally sustainable ventures. In Nigeria, motivations are often influenced by social recognition and community benefits, although profit motives remain predominant (Adewale & Akinyele, 2018). Awareness of sustainability opportunities and personal passion play significant roles in shaping entrepreneurial choices, underscoring the importance of cultivating mindsets aligned with sustainable development goals.

Moreover, cultural and social factors heavily influence entrepreneurial behaviors. Nigerian culture, characterized by strong community bonds and social norms, can either bolster or hinder sustainable practices depending on societal perceptions (Ogunleye & Oladele, 2015). While awareness of sustainability issues is increasing, traditional practices sometimes conflict with innovative approaches, requiring efforts to align cultural values with sustainability objectives. Technological and innovation capacities are also critical for advancing sustainable entrepreneurship. Access to modern technologies, collaboration with research institutions, and the presence of innovation hubs facilitate the adoption of sustainable solutions (Ogundele & Oladipo, 2020). Nevertheless, high costs and skills shortages limit technological diffusion, hampering innovation within Nigeria's entrepreneurial ecosystem. Strengthening technological infrastructure and fostering partnerships with academia and research bodies are essential strategies for enhancing innovation, as supported by Adebayo & Oladipo (2021).

The contribution of entrepreneurial activities to Nigeria's sustainable development is well documented. Innovation-driven entrepreneurship leads to positive environmental and social outcomes, contributing to national sustainable development goals (United Nations, 2015). Empirical evidence indicates that sustainable entrepreneurship promotes long-term economic growth, improves quality of life, and supports environmental conservation (Idris & Osabohien, 2020). Understanding the link between entrepreneurial innovation and sustainable development is therefore vital for policymakers and strategic planners aiming to foster resilient and sustainable economic growth in Nigeria.

Institutional Support for Entrepreneurship in Nigeria

YouWin!, a government initiative launched in 2011, empowered youth by funding the most promising business plans with significant grants. The National Engineering and Innovation Fund (NEIF), unveiled in November 2024, supports engineers and technologists developing sustainable, locally relevant solutions in fields like food security and climate resilience. The Enterprise Support Organizations (ESOs) Collaborative, backed by Impact Investors Foundation and UKAID, is bolstering Nigeria's startup ecosystem by enhancing capacities of enterprise-support groups. NITDA, through the iHATCH incubation program (with JICA), is also nurturing tech-based entrepreneurship to align with Nigeria's Strategic Roadmap 2.0.

Social Enterprises and Sustainable Innovation

In addition, social Babban Gona, founded in 2012, empowers smallholder farmers—through training, input provision, and market linkage—fostering sustainable livelihoods. The Eleven Eleven Twelve Foundation, launched in 2019 in Ibadan, supports environmentally focused entrepreneurs in agriculture and green sectors. The Africa Social Impact Summit (ASIS) (since 2022, Lagos) co-hosted with the UN and Sterling One Foundation, creates platforms for inclusive, market-driven solutions—drawing entrepreneurs to pitch for support.

Nigeria's journey toward sustainable development through entrepreneurship and innovation is increasingly multifaceted and promising. Building stronger support ecosystems—through education, funding, mentoring, policy, and targeted programs—remains crucial. As exemplified by Babban Gona, Dye Lab, Salpha Energy, and others, homegrown sustainable entrepreneurial models are emerging as powerful agents of change. With improved infrastructure, regulatory reform, and broad civic awareness, Nigeria stands to scale these successes and drive a resilient, inclusive, and prosperous future.

The existing literature highlights the complex interplay of resource availability, policy environment, motivation, cultural influences, and technological capacity in shaping sustainable entrepreneurship in Nigeria. Addressing these interconnected factors through targeted policies and capacity-building efforts can significantly enhance the potential for innovative and sustainable entrepreneurial ventures

Methodology

This study employed a quantitative research design to investigate the factors influencing sustainable development among companies and entrepreneurs in North Central Nigeria. A total sample size of 90 respondents was purposively selected, consisting of company directors and entrepreneurs affiliated with three prominent entrepreneurship centers within the region. The selection aimed to capture diverse perspectives on resource access, policy environment, entrepreneurial motivation, cultural factors, and technological adoption.

Data collection was conducted through structured questionnaires, developed based on validated scales from existing literature. The questionnaires measured variables such as access to resources (ACRS), policy and regulatory environment (PRGN), entrepreneurship motivation (ENMV), cultural and social factors (CSFA), and technological adoption (TECH). Respondents rated items on a Likert scale, facilitating quantitative analysis.

The data were analyzed using hierarchical multiple regression to assess the relative contribution of each predictor variable to sustainable development outcomes. The analysis proceeded in sequential steps: initially entering access to resources (ACRS), followed by the addition of policy and regulatory factors (PRGN), entrepreneurship motivation (ENMV), cultural and social factors (CSFA), and technological adoption (TECH). This approach allowed for evaluating the incremental explanatory power of each variable set.

Preliminary diagnostic tests, including the Durbin-Watson statistic (approximately 1.58), confirmed the absence of autocorrelation in residuals, validating the regression model's appropriateness. The significance of predictors was determined based on p-values, with variables showing $p < 0.05$ interpreted as statistically significant contributors to sustainable development.

This methodological framework provided robust insights into the key drivers of sustainability among firms and entrepreneurs in the North Central Nigeria context, with findings informing targeted policy and strategic interventions.

Results

This study examines the key factors influencing sustainable development through hierarchical multiple regression analysis. By evaluating the contribution of access to resources, policy and regulatory environment, entrepreneurship motivation, cultural and social factors, and technological adoption, the analysis aims to identify the most significant drivers of sustainability outcomes. The results provide valuable insights for policymakers and stakeholders seeking to enhance sustainable practices and achieve long-term developmental goals.

Table 1: Relationship of entrepreneurship and innovation with sustainable development

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics				Sig. F Change	Durbin-Watson
						F Change	df1	df2			
1	.732 ^a	0.536	0.531	0.79439	0.536	92.584	1	80		0.000	
2	.775 ^b	0.601	0.591	0.74198	0.064	12.702	1	79		0.001	
3	.826 ^c	0.683	0.671	0.66553	0.082	20.191	1	78		0.000	
4	.838 ^d	0.702	0.686	0.64935	0.019	4.937	1	77		0.029	
5	.852 ^e	0.726	0.708	0.62690	0.024	6.612	1	76		0.012	1.582

a. Predictors: (Constant), ACRS

b. Predictors: (Constant), ACRS, PRGN

c. Predictors: (Constant), ACRS, PRGN, ENMV

d. Predictors: (Constant), ACRS, PRGN, ENMV, CSFA

e. Predictors: (Constant), ACRS, PRGN, ENMV, CSFA, TECH

f. Dependent Variable: ENDV

Source: Author's computation

The hierarchical regression analysis depicted in Table 1 indicates that multiple factors significantly influence sustainable development. Initially, access to resources (ACRS) alone explained about

53.6% of the variance in sustainability outcomes, underscoring its fundamental importance. As subsequent variables—policy and regulatory environment (PRGN), entrepreneurship motivation (ENMV), cultural and social factors (CSFA), and technological adoption (TECH)—were added stepwise, the total explained variance increased to approximately 70.8%. The significant F-change at each step (all p-values below 0.05) demonstrates that each factor contributes uniquely to the model’s predictive power. The Durbin-Watson statistic of approximately 1.58 suggests no significant autocorrelation in the residuals, indicating the model’s appropriateness.

Table 2: Impact of entrepreneurship and innovation on sustainable development

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta	T		Lower Bound	Upper Bound
5 (Constant)	-0.309	0.374		-0.826	0.412	-1.053	0.436
ACRS	0.315	0.096	0.288	3.269	0.002	0.123	0.507
PRGN	-0.097	0.132	-0.077	-0.736	0.464	-0.361	0.166
ENMV	0.300	0.156	0.240	1.927	0.058	-0.010	0.610
CSFA	0.198	0.136	0.162	1.456	0.150	-0.073	0.468
TECH	0.397	0.154	0.327	2.571	0.012	0.089	0.704

a. Dependent Variable: ENDV

Source: Author’s computation

Further insights from Table 2 reveal that among these predictors, access to resources (ACRS) and technological adoption (TECH) have statistically significant positive effects on sustainable development, with standardized coefficients of 0.288 and 0.327 respectively. Specifically, a one-unit increase in ACRS is associated with a roughly 0.315 increase in sustainability outcomes, emphasizing the critical role of resource availability. Similarly, technological adoption shows a strong, significant positive impact, confirming its importance in fostering sustainable practices. In contrast, policy and regulatory environment (PRGN), cultural and social factors (CSFA), and entrepreneurship motivation (ENMV) do not exhibit statistically significant effects individually, though their positive coefficients suggest they may still influence sustainability indirectly or in different contexts. Notably, ENMV approaches significance with a p-value of 0.058, indicating that motivation could be a relevant factor under different conditions or with larger samples.

Overall, these findings underscore that enhancing access to resources and technological integration are key strategies for promoting sustainable development. While entrepreneurship motivation and cultural factors appear influential, their effects require further investigation. The combined evidence emphasizes a multidimensional approach, where resource accessibility and technological adoption are prioritized to achieve sustainable development objectives effectively.

Discussion of Findings

The analysis demonstrates that entrepreneurship and innovation significantly influence sustainable development, with access to resources and technological adoption emerging as the most impactful factors. Hierarchical regression results reveal that resource availability alone explains over half of the variance in sustainability outcomes ($R^2 = 0.536$), highlighting its foundational role. This aligns with prior research by Ayyagari et al. (2011) and Nwankwo et al. (2019), which emphasize the critical nature of financial, human, and social resources in fostering innovative and sustainable ventures.

Further, the addition of policy and regulatory factors, entrepreneurial motivation, cultural influences, and technological capacity increased the explained variance to approximately 70.8%. Notably, technological adoption exhibited a statistically significant positive effect on sustainable development, underscoring the importance of leveraging modern technologies to drive sustainability in entrepreneurship. This supports the argument by Ogundele & Oladipo (2020) and Adebayo & Oladipo (2021) that technological infrastructure and innovation hubs are vital for sustainable entrepreneurial growth.

Interestingly, policy and regulatory environment and entrepreneurial motivation, while positively associated with sustainability, did not reach statistical significance individually, suggesting their effects may be context-dependent or mediated through other variables. The near-significance of entrepreneurial motivation ($p = 0.058$) indicates its potential relevance, resonating with Schaltegger et al. (2016), who argue that intrinsic motivation to create social and environmental impact can catalyze sustainable innovation.

The findings also reflect socio-cultural complexities. While cultural and social factors showed positive coefficients, their lack of significance suggests that cultural norms may both facilitate and hinder sustainable practices depending on societal perceptions, as discussed by Ogunleye & Oladele (2015). Therefore, aligning cultural values with sustainability objectives remains a nuanced challenge.

Conclusion

The study's results substantiate the critical role of entrepreneurship and innovation in advancing sustainable development within Nigeria's complex socio-economic context. The prominence of resource accessibility and technological adoption aligns with established theories emphasizing resource-based views (Barney, 1991) and innovation systems theory (Freeman, 1987). Practically, these findings advocate for targeted interventions that enhance resource mobilization and technological infrastructure, including expanding access to finance, strengthening innovation hubs, and fostering technological literacy.

From a policy perspective, reforms should focus on streamlining regulatory frameworks to reduce bureaucratic bottlenecks, incentivizing technological innovation, and embedding sustainability principles within entrepreneurial support programs. Encouraging entrepreneurial motivation through awareness campaigns and community engagement can further reinforce sustainable practices, especially when culturally sensitive strategies are employed.

Finally, fostering an environment where resource access and technological capacity are prioritized will be instrumental in leveraging entrepreneurship as a catalyst for Nigeria's sustainable development. Future research should explore the mediating roles of socio-cultural factors and entrepreneurial motivation, and policymakers must adopt a multidimensional approach that integrates resource enhancement, technological advancement, and cultural alignment to realize Nigeria's sustainable development goals.

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Appendices

Appendix A: Questionnaire

	Access to Resources	1	2	3	4	5	6	7
A1	I have sufficient access to financial resources to support innovative projects.							
A2	The availability of local natural and human resources encourages innovative entrepreneurship.							
A3	Entrepreneurs in Nigeria are able to leverage social networks effectively for resource acquisition.							
A4	Limited access to resources is a significant barrier to sustainable entrepreneurial innovation.							
A5	Government support and infrastructure positively influence resource availability for entrepreneurs.							
	Policy and Regulatory Environment	1	2	3	4	5	6	7
B1	Nigerian policies effectively support entrepreneurial innovation aimed at sustainability.							
B2	Regulatory frameworks are flexible enough to allow new sustainable business models to emerge.							
B3	There are adequate incentives for entrepreneurs to pursue environmentally sustainable practices.							
B4	Bureaucracy and regulatory hurdles hinder entrepreneurial innovation in Nigeria.							
B5	Government programs effectively promote sustainable entrepreneurship initiatives.							
	Entrepreneurial Motivation	1	2	3	4	5	6	7
C1	A strong desire to solve social and environmental issues motivates entrepreneurs in Nigeria.							
C2	Entrepreneurs are driven primarily by profit rather than sustainability considerations.							
C3	Social recognition and community impact motivate entrepreneurs to innovate sustainably.							
C4	Personal passion for environmental sustainability influences entrepreneurial decisions.							
C5	Entrepreneurial motivation is often limited by a lack of awareness of sustainability opportunities.							
	Cultural and Social Factors	1	2	3	4	5	6	7
D1	Nigerian culture encourages innovative approaches to sustainable development.							
D2	Community support plays a critical role in the success of sustainable entrepreneurial ventures.							
D3	Social norms influence entrepreneurs' willingness to adopt sustainable practices.							

D4	Traditional practices sometimes conflict with innovative, sustainable approaches.							
D5	There is a general societal awareness of the importance of sustainability in business.							
	Technological and Innovation Capacity	1	2	3	4	5	6	7
E1	Entrepreneurs in Nigeria have access to modern technologies to support sustainable innovation.							
E2	Innovation capacity is enhanced by collaboration with research institutions and universities.							
E3	The adoption of new technologies is limited by high costs or lack of technical skills.							
E4	Nigerian entrepreneurs regularly adopt innovative solutions to address sustainability challenges.							
E5	Technology transfer and innovation hubs support sustainable entrepreneurship development.							
	Sustainable Development	1	2	3	4	5	6	7
F1	Entrepreneurial activities significantly contribute to Nigeria's sustainable development goals.							
F2	Innovation in entrepreneurship leads to positive environmental and social outcomes.							
F3	Sustainable entrepreneurship creates long-term economic benefits for local communities.							
F4	The level of entrepreneurial innovation directly influences Nigeria's progress toward sustainability.							
F5	There is a clear link between entrepreneurial activities and improvements in quality of life in Nigeria							