



Assessing the Innovation and Business Sustainability Issues of Indigenous Entrepreneurship in Northern Ghana

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Abstract

The study explores the interrelationship between innovation practices and business sustainability among indigenous entrepreneurs in Northern Ghana. The research adopted a mixed-methods design involving 250 survey responses and 15 qualitative interviews. Two key objectives guided the investigation: Examining the nature and characteristics of indigenous entrepreneurship in Northern Ghana and analysing the linkage between innovation and sustainability. Empirical findings indicate that product, process, marketing, organizational, and eco-innovations significantly influence business sustainability, with product innovation emerging as the most impactful predictor ($B = 0.182$, $p = 0.001$). The study also confirms a strong positive relationship between innovation practices and sustainability outcomes ($B = 0.624$, $p < 0.001$), explaining 30.1% of the variance.

The study concludes that innovation is not only a technical adaptation but also a cultural and strategic tool for resilience in indigenous enterprise development. It recommends context-specific policy interventions, capacity-building programs, and ecosystem support to scale indigenous innovation and promote long-term sustainability.

Keywords: Indigenous entrepreneurship, innovation practices, business sustainability, livelihood outcomes, Northern Ghana, eco-innovation, resource-based view

Introduction

Entrepreneurship is widely acknowledged as a critical driver of economic development, employment creation, and social transformation, particularly in emerging and developing economies. Within this broad spectrum, indigenous entrepreneurship rooted in local traditions, cultural values, and social structures has increasingly gained attention for its potential to foster inclusive growth and sustainable development. In Northern Ghana, where poverty, limited industrial infrastructure, and socio-economic disparities persist, indigenous entrepreneurship offers an alternative economic pathway that integrates local knowledge systems, indigenous skills, and community-based resources (Danso *et al.*, 2019) ^[10]. However, despite its socio-cultural significance and potential for economic up-liftment, indigenous entrepreneurship in this region continues to face profound challenges relating to innovation, scalability, and long-term business sustainability.

The Northern regions of Ghana comprising the Northern, Upper East, and Upper West regions are often characterized by underdevelopment relative to the southern parts of the country. This imbalance is partly a legacy of colonial neglect and post-independence developmental planning that favored the south. As a result, indigenous entrepreneurs in the north operate in environments marked by low capital investment, infrastructural inadequacies, limited access to markets, and low technological diffusion (Asiedu & Freeman, 2020) ^[7]. These conditions pose serious challenges for innovation, the lifeblood of modern entrepreneurship and threaten the long-term viability of indigenous enterprises. The situation is further compounded by the informal nature of many indigenous businesses, which limits access to credit facilities, formal business training, and government support programs aimed at modern enterprise development.

Innovation is widely recognized as central to entrepreneurial

success and sustainability. It enables firms to adapt to changing market dynamics, improve their competitiveness, and meet evolving consumer demands. However, in indigenous contexts, innovation may not always align with conventional notions of technological advancement or industrial sophistication. Instead, it often manifests in culturally embedded practices such as adaptive reuse of traditional materials, socially-driven marketing strategies, and local resource optimization (Abdulai & Quartey, 2020). Yet, such forms of innovation are rarely acknowledged or supported within mainstream policy frameworks, leading to missed opportunities for formal integration and scalability. The concept of business sustainability encompassing economic viability, environmental stewardship, and social responsibility is also gaining prominence in contemporary development discourse. For indigenous entrepreneurs in Northern Ghana, achieving sustainability is particularly challenging due to external pressures such as climate variability, fluctuating commodity prices, and the erosion of traditional livelihoods. Many indigenous enterprises are dependent on natural resources, which are increasingly threatened by environmental degradation and land-use conflicts. Additionally, intergenerational knowledge transfer, which is vital for sustaining indigenous practices, is weakening due to urban migration and changing youth aspirations (Yeboah & Adomako, 2019) ^[22]. These dynamics raise important questions about how indigenous enterprises can innovate while retaining their cultural identity and ensuring long-term resilience in the face of socio-economic and environmental uncertainties.

Despite these challenges, there is a growing recognition of the importance of supporting indigenous entrepreneurship as part of a broader inclusive development agenda. National policies such as the Ghana Shared Growth and Development Agenda (GSGDA) and programs under the Ministry of Business Development have highlighted the need to

promote entrepreneurship across all regions, including the north. However, such efforts often lack specificity in addressing the unique circumstances and potential of indigenous entrepreneurs. More targeted research is therefore needed to assess the interplay between innovation practices and sustainability challenges within indigenous entrepreneurship in Northern Ghana.

This study, therefore, seeks to fill a critical gap in the literature by assessing the innovation and business sustainability issues facing indigenous entrepreneurship in Northern Ghana. Through empirical inquiry, it aims to explore the dynamics that enable or hinder the growth and longevity of these enterprises, with a focus on locally driven innovation, resource management, institutional support, and cultural adaptation. By doing so, it contributes to both academic scholarship and policy discourse on inclusive and sustainable entrepreneurship in marginalized contexts.

Outcome of the study from an academic standpoint addresses a critical gap in the literature concerning indigenous entrepreneurship in Ghana's rural and marginalized regions. Most existing research on entrepreneurship in Ghana is urban-centric, focusing on formal, tech-driven, or small and medium-sized enterprises (SMEs) operating in the southern regions. This leaves the unique experiences, challenges, and potential of indigenous entrepreneurs in the north under-researched and poorly understood (Asiedu & Freeman, 2020) [7]. The study has significant policy relevance as well. Northern Ghana continues to lag behind other regions in terms of infrastructural development, private investment, and employment creation. This study provides evidence-based insights that can inform the design of more tailored interventions.

1. Research Objectives

The study aims to Assess the Innovation and Business Sustainability Issues of Indigenous Entrepreneurship in Northern Ghana. Specifically, the study seeks to:

1. Examine the nature and characteristics of indigenous entrepreneurship in Northern Ghana and;
2. Analyze the linkages between innovation practices and business sustainability outcomes in the indigenous entrepreneurial context.

Literature Review

Conceptualizing Indigenous Entrepreneurship

Indigenous entrepreneurship has emerged as a critical area of scholarly attention, particularly within development studies, cultural economics, and entrepreneurship theory. It refers to entrepreneurial activities undertaken by indigenous people that are embedded in their cultural, social, and ecological contexts. Unlike conventional entrepreneurship, which is often measured by growth, innovation, and profit maximization, indigenous entrepreneurship integrates communal goals, cultural preservation, and sustainable livelihoods as central outcomes (Anderson & Dana, 2019) [6]. In this regard, it is as much a socio-cultural activity as it is an economic pursuit.

The term "indigenous" is not merely an ethnic or demographic label; it encompasses a deep-seated connection to ancestral land, traditional knowledge systems, and intergenerational values. As such, indigenous entrepreneurship is shaped by the interplay of history, identity, ecological stewardship, and collective well-being

(Peredo & McLean, 2020) [19]. It represents a culturally embedded process that involves not only the creation of economic value but also the maintenance of cultural integrity, social cohesion, and environmental balance.

In the Ghanaian context, and particularly in Northern Ghana, indigenous entrepreneurship is widely practiced in agriculture, crafts, food processing, traditional medicine, and local services. These enterprises are typically informal, community-centered, and driven by necessity rather than opportunity.

Innovation in Indigenous Entrepreneurship

Innovation, traditionally understood as the development and application of new ideas, products, or processes to gain a competitive advantage, has largely been conceptualized from a Western, technology-driven perspective. However, within the context of indigenous entrepreneurship especially in regions like Northern Ghana innovation assumes a more context-sensitive, resource-conscious, and culturally embedded character. It often manifests not through radical technological breakthroughs but through incremental adaptations, creative resource mobilization, and knowledge recombination within traditional frameworks (George *et al.*, 2020) [13].

Indigenous innovation typically emerges from necessity and is driven by limited access to capital, formal education, or modern infrastructure.

In Northern Ghana, examples of indigenous innovation are widespread across sectors such as agriculture, crafts, textiles, food processing, and herbal medicine. Farmers adopt intercropping techniques based on traditional ecological knowledge to optimize land use and maintain soil fertility. Local artisans combine traditional motifs with contemporary designs to appeal to broader markets. Shea butter producers integrate improved processing techniques with age-old manual methods to enhance product quality without compromising traditional authenticity. These practices represent frugal innovations low-cost, resource-efficient, and sustainable solutions tailored to local needs and constraints.

Business Sustainability in Indigenous Contexts

Business sustainability has traditionally been discussed in relation to corporate strategies that align economic performance with environmental stewardship and social responsibility. However, in indigenous contexts particularly in underserved regions like Northern Ghana business sustainability takes on a broader, more integrated meaning that encompasses survival, cultural continuity, ecological harmony, and community well-being (Peredo & McLean, 2020) [19]. It reflects the capacity of indigenous entrepreneurs not only to maintain their enterprises over time but to do so in a way that supports the resilience of their communities and ecosystems.

In the Northern Ghanaian context, business sustainability is often synonymous with livelihood sustainability. Many indigenous entrepreneurs engage in multi-activity enterprises farming, artisanal work, and trading anchored in survival strategies rather than capitalist accumulation. The continuity of these businesses depends on their adaptability to seasonal cycles, cultural festivals, environmental shifts, and family labor availability. For instance, a family-run smock weaving business may be sustained over decades not because of economies of scale, but due to its embeddedness

in local customs, knowledge transfer between generations, and trust-based community networks.

The Nature and Characteristics of Indigenous Entrepreneurship in Northern Ghana

Indigenous entrepreneurship in Northern Ghana is deeply rooted in socio-cultural traditions, local economic practices, and the structural realities of rural livelihoods. Unlike conventional Western models of entrepreneurship, which are typically individualistic and profit-driven, indigenous entrepreneurship in this region is predominantly community-oriented, informal, and driven by necessity (Banerjee & Tedmanson, 2019) ^[9]. The nature of indigenous entrepreneurship in Northern Ghana reflects a hybrid economic logic that blends cultural, social, and economic motivations. For instance, many entrepreneurial ventures in the region arise from customary practices such as pottery, shea butter processing, weaving, leatherwork, blacksmithing, and small-scale trading. These activities are often passed down through generations and maintained not solely for profit, but also to preserve heritage and provide livelihood for extended family and community networks (Agyemang & Ansong, 2020). Entrepreneurship in this context is largely informal, operating outside state regulatory frameworks due to limited access to formal credit, institutional support, and market integration (Agyemang & Ansong, 2020).

A key characteristic of indigenous entrepreneurship in Northern Ghana is its resilience and adaptability in the face of environmental and socio-economic uncertainty. Entrepreneurs frequently rely on locally available resources and communal labor, demonstrating forms of frugal innovation and improvisation (George *et al.*, 2020) ^[13]. For example, smallholder women entrepreneurs in the Upper East and Northern Regions have developed adaptive strategies for processing agricultural products using low-cost, energy-efficient technologies developed within the community. Such practices illustrate that innovation in indigenous enterprises does not necessarily involve cutting-edge technology, but rather resourcefulness, local experimentation, and problem-solving tailored to the community context (Rao, 2021) ^[20].

Social embeddedness is another defining trait. Entrepreneurs often mobilize family and clan networks to acquire labor, market information, and credit. This social capital compensates for the absence of formal institutions and plays a critical role in sustaining the business. Trust, reciprocity, and collective responsibility govern business transactions, making reputation a central currency in entrepreneurial success (Kuada, 2020) ^[14].

In addition, indigenous entrepreneurship in the region is heavily influenced by gendered norms. While both men and women are active in entrepreneurial activities, women dominate sectors such as food processing, textiles, and small-scale retail. However, their efforts are often constrained by patriarchal norms, limited control over productive assets, and poor access to credit and training (Danso *et al.*, 2022) ^[11].

Finally, it is important to note the territorial embeddedness of indigenous entrepreneurship in Northern Ghana. Most ventures are localized, catering to village or regional markets with limited national or international reach. This localization restricts scalability but also enhances relevance and sustainability, as businesses are closely tied to local

demand, ecological realities, and traditional modes of production (Scoones, 2021) ^[21].

Types and Drivers of Innovation Practices

Innovation among indigenous entrepreneurs in Northern Ghana is distinctively informal, resource-constrained, and culturally embedded. Unlike the standardized models of innovation that emphasize technological sophistication and large-scale R&D, innovation in indigenous contexts is more frugal, incremental, and need-driven (George *et al.*, 2020) ^[13]. This section critically examines the typologies of innovation and the key forces that drive such practices among indigenous entrepreneurs.

Product Innovation: Product innovation refers to the development or substantial improvement of goods and services that meet the specific needs of a target market (OECD, 2019) ^[17]. Among indigenous entrepreneurs in Northern Ghana, product innovation is closely linked to their cultural, ecological, and subsistence realities of their environment. This form of innovation often involves adapting traditional products to meet changing consumer preferences, health considerations, and market standards without losing the cultural essence embedded in the original product.

Process Innovation: Process innovation involves the improvement or introduction of new methods of production or delivery, which enhance efficiency, reduce costs, or improve product quality (OECD, 2019) ^[17]. In the context of indigenous entrepreneurship in Northern Ghana, process innovation is predominantly informal, driven by necessity, and rooted in the creative adaptation of available resources to local challenges.

Marketing Innovation: Marketing innovation refers to the implementation of new strategies or significant improvements in product promotion, pricing, packaging, or placement aimed at increasing market reach, customer satisfaction, or competitive advantage (OECD/Eurostat, 2019) ^[17]. In indigenous entrepreneurial contexts such as Northern Ghana, marketing innovation is often driven by the need to differentiate products, attract new customers, and adapt to shifting market dynamics despite limited access to formal marketing infrastructure.

Organizational Innovation: Organizational innovation involves the adoption of new organizational methods in business practices, workplace arrangements, or external relations that improve a firm's performance, adaptability, or learning capacity (OECD, 2019) ^[17]. In the indigenous entrepreneurial landscape of Northern Ghana, this type of innovation often arises from the need to respond flexibly to social, environmental, and institutional limitations, particularly in rural and semi-urban economies where formal structures are often weak or absent.

Eco-Innovation: Conceptual Perspectives and Relevance to Business Sustainability: Eco-innovation, also known as environmental or sustainable innovation, refers to the development and application of new products, processes, organizational systems, or business models that reduce environmental harm, enhance resource efficiency, and contribute to sustainable development (OECD, 2020).

Unlike traditional innovation, which focuses primarily on economic returns, eco-innovation explicitly incorporates ecological and social objectives into innovation practices (OECD, 2020).

Linkages between Innovation Practices and Business Sustainability Outcomes in the Indigenous Entrepreneurial Context

In recent years, the relationship between innovation and business sustainability has received growing attention within development and entrepreneurship literature. Innovation, traditionally associated with technological breakthroughs, is now broadly understood as a multifaceted concept that encompasses product development, process improvement, marketing strategies, organizational restructuring, and institutional change. When applied in indigenous entrepreneurial contexts, innovation becomes a strategic necessity for business continuity, adaptation, and long-term survival especially in environments constrained by limited resources and institutional support (Danso *et al.*, 2022) ^[11].

In indigenous settings such as Northern Ghana, innovation often emerges from necessity rather than choice. It is typically embedded in socio-cultural practices, frugal methods, and community-driven solutions. For example, process innovations such as modifying traditional shea butter processing techniques or repurposing agricultural waste for new products directly enhance operational efficiency and reduce costs, thereby contributing to business sustainability (Adomako *et al.*, 2020) ^[3]. Similarly, marketing innovations such as the use of WhatsApp for customer outreach or leveraging community fairs to promote local products expand market reach and strengthen brand visibility, even in informal economies (Osei & Appiah, 2023) ^[18].

The linkage between innovation and sustainability is particularly evident in the resilience of indigenous businesses. Entrepreneurs who adopt innovative strategies such as diversifying income streams, integrating traditional knowledge with modern practices, or forming cooperative networks are more likely to withstand environmental shocks, market volatility, and socio-economic pressures (Azumah & Agyapong, 2021) ^[8].

Methodology

The study adopts the a mixed-methods research design, combining both quantitative and qualitative approaches to gain a comprehensive understanding of innovation and business sustainability challenges among indigenous entrepreneurs in Northern Ghana.

The target population consists of indigenous entrepreneurs operating across various sectors such as agribusiness, handicrafts, and petty trading in Northern Ghana. A sample size of 250 will be determined using Taro Yamane's formula, with respondents selected through multi-stage sampling techniques comprising purposive sampling to identify regions with a high concentration of indigenous entrepreneurs, followed by stratified and simple random sampling to ensure representativeness across gender, business type, and location.

Primary data was collected using a structured questionnaire designed around the two research objectives, complemented by semi-structured interviews with selected key informants, including local enterprise development officers and

experienced indigenous entrepreneurs. The quantitative data was analyzed using descriptive statistics, Pearson's correlation, and multiple regression analysis with SPSS, while thematic analysis was employed for qualitative responses to identify recurring patterns and contextual explanations.

To ensure reliability and validity, Cronbach's alpha was used to test internal consistency of questionnaire items, with acceptable reliability scores ($\alpha > 0.7$) across the scales. Ethical clearance was obtained, and informed consent was ensured for all participants.

Results

Demographic Characteristics of the Respondents

Understanding the demographic characteristics of respondents is crucial to contextualizing the findings of this study.

Gender Distribution: The analysis reveals a relatively balanced gender distribution among the respondents, with 52% male and 48% female. This reflects the increasing involvement of both men and women in entrepreneurial activities within indigenous communities, albeit with gendered differences in business types and access to resources.

Age Distribution: The age of respondents ranged from 21 to 65 years. The highest proportion (38%) fell within the 31–40 year bracket, followed by 26% in the 41–50 range, 19% in the 21–30 category, and 17% above 50 years. This distribution suggests a strong representation of the economically active age group, aligning with the notion that youth and middle-aged adults constitute a significant portion of indigenous entrepreneurs in the region (Bawa *et al.*, 2022).

Educational Background: Regarding education, 34% of the respondents had attained basic education, 29% had secondary-level education, 21% had no formal education, and 16% had attained tertiary education. The relatively low levels of formal education are consistent with patterns observed in rural entrepreneurial ecosystems where practical skills and indigenous knowledge often substitute for formal qualifications (Zakaria *et al.*, 2021).

Type of Indigenous Enterprise: Respondents operated various types of indigenous enterprises. 30% were involved in agro-based businesses (e.g., shea butter processing, groundnut oil extraction), 24% in handicrafts and arts, 20% in retail trading of local products, 15% in traditional food processing, and 11% in construction and indigenous manufacturing. This spread highlights the diversity and embeddedness of indigenous entrepreneurship in local economic activities rooted in culture and natural resource endowments.

Years of Business Operation: The analysis of experience levels showed that 43% of the entrepreneurs had been in operation for 6–10 years, 27% for 3–5 years, 18% for more than 10 years, and 12% for less than 3 years. This indicates a relatively stable entrepreneurial landscape in which most respondents had surpassed the early-stage startup phase, potentially allowing for more meaningful engagement with innovation and sustainability practices.

Objective One: Examine the Nature and Characteristics of Indigenous Entrepreneurship in Northern Ghana

The study sought to examine the nature and defining features of indigenous entrepreneurship in Northern Ghana. Responses were gathered on various aspects such as: business ownership structure, enterprise motivation, product/service uniqueness and embeddedness in local culture.

Nature of Indigenous Entrepreneurial Enterprises: Most indigenous enterprises in the study area were sole proprietorships (64%), with the remaining consisting of family-owned businesses (23%), and cooperative or group-based ventures (13%). These enterprises were largely micro or small-scale, with the majority employing fewer than five people and operated primarily at the community level. Many of these businesses were unregistered formally, yet held high recognition and trust within their communities.

Entrepreneurial Motivation and Purpose Orientation:

The data showed that necessity-driven entrepreneurship was more common than opportunity-driven efforts. Approximately 59% of respondents indicated they started their businesses due to economic hardship or lack of formal employment, while 27% mentioned taking over family or generational businesses, and 14% indicated they pursued a unique market opportunity.

Despite these constraints, a recurring theme was the strong cultural motivation—many entrepreneurs (71%) indicated that preserving traditional crafts, farming methods, or indigenous knowledge was part of their enterprise mission, showing a dual commitment to economic survival and cultural sustainability.

Cultural Embeddedness and Community Orientation:

A key defining feature of indigenous entrepreneurship identified in this study is its deep embeddedness in socio-cultural norms and community systems. About 83% of the participants stated that their business practices align closely with traditional customs, local ethics, and communal expectations. For instance, business decisions are often influenced by chiefs, elders, or family heads, especially for land-based enterprises.

This orientation is also reflected in the informal governance structures, where obligations such as supporting communal festivals, contributing to local development, or providing employment for kin are emphasized. This reinforces the collectivist and relational identity of indigenous entrepreneurship.

Product and Service Characteristics:

Indigenous entrepreneurs in Northern Ghana often focus on products or services that reflect local identity. These include shea butter, leather goods, indigenous textiles, food preservation techniques, herbal medicine, and artisanal construction methods. Approximately 76% of respondents reported that their products use locally sourced raw materials and production techniques that have been handed down through generations.

While many of these products have a niche market appeal, most entrepreneurs cited challenges in scaling production and maintaining quality standards due to limited access to modern tools, credit, and training

Objective Two: Analyze the Linkages between Innovation Practices and Business Sustainability Outcomes in the Indigenous Entrepreneurial Context

This objective sought to determine the extent to which various innovation practices adopted by indigenous entrepreneurs contribute to sustainable business outcomes in Northern Ghana. The innovation practices analyzed included product innovation, process innovation, marketing innovation, organizational innovation, and eco-innovation. Business sustainability outcomes were operationalized across three domains: economic viability, social relevance, and environmental responsibility. A multiple regression analysis was conducted to examine the predictive relationships between the five innovation types and sustainability outcomes. The results of the regression analysis are presented as follows:

Model Summary

From the statistics results, Multiple Correlation Coefficients (R = 0.735)

The R value of 0.735 indicates a strong positive correlation between the set of independent variables (innovation practices) and the dependent variable (business sustainability outcomes).

Also, the R Square value of 0.540 means that approximately 54.0% of the variance in business sustainability outcomes can be explained by the collective influence of the innovation practices included in the model.

The Adjusted R Square corrects for the number of predictors in the model and provides a more accurate estimate of the explained variance in the population. An adjusted R² of 0.532 suggests that even after accounting for potential overfitting, the model retains strong explanatory power. This further validates the robustness of the regression model.

Additionally, the Standard Error of Estimate reflects the average distance between the actual data points and the predicted values from the model. A standard error of 0.591 indicates a moderate level of prediction error.

Hence, the model summary reveals that innovation practices significantly predict business sustainability among indigenous entrepreneurs in Northern Ghana. With an R² of 0.540 and a high R value of 0.735, the model demonstrates both practical relevance and statistical strength. Table 1 presents the results

Table 1: Model Summary

R	R Square	Adjusted R Square	Std. Error of Estimate
0.735	0.540	0.532	0.591

Source: Field data, 2025

Anova

The Analysis of Variance (ANOVA) test is used in this study to assess the overall statistical significance of the multiple regression model developed to predict business sustainability outcomes based on five innovation practices: product, process, marketing, organizational, and eco-innovation.

Sum of Squares (Regression = 88.774): This represents the amount of variability in the dependent variable (business sustainability) explained by the set of independent variables (the five types of innovation). Sum of Squares (Residual = 75.606): This is the unexplained variance or error remaining after the model is fitted. It reflects the variability in business sustainability not captured by the innovation variables.

The ANOVA results affirm the overall goodness-of-fit and robustness of the regression model. The statistically significant F-test ($p < 0.001$) confirms that the combined innovation practices significantly contribute to explaining variations in the sustainability performance of indigenous entrepreneurs in Northern Ghana. This finding validates the conceptual assumption that innovation is a critical driver of sustainable enterprise development in the local context. Table 2 presents the results

Table 2: ANOVA Results

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	88.774	5	17.755	50.903	0.000***
Residual	75.606	216	0.350		
Total	164.380	221			

Source: Field data, 2025

Coefficient

The regression coefficients of the study illustrate the individual contribution of each type of innovation practice to the business sustainability outcomes of indigenous entrepreneurs. Both unstandardized (B) and standardized (Beta) coefficients are reported, along with their statistical significance.

Constant (B = 1.824, p < 0.001)

The intercept represents the expected value of the dependent variable (business sustainability) when all innovation practices are held at zero. This value is statistically significant and serves as the baseline level of sustainability in the absence of innovation inputs.

Product Innovation (B = 0.182, Beta = 0.208, p = 0.001)

Product innovation has the strongest positive influence on business sustainability among all predictors. A unit increase in product innovation leads to an estimated 0.182 unit increase in sustainability outcomes.

Process Innovation (B = 0.147, Beta = 0.179, p = 0.005)

Process innovation also shows a strong and statistically significant impact. Improvements in production or service delivery processes enhance efficiency and resource utilization, which in turn support economic and environmental sustainability.

Marketing Innovation (B = 0.125, Beta = 0.162, p = 0.012)

Marketing innovation, which includes novel promotional strategies and market positioning, positively influences sustainability. This reflects the growing importance of customer engagement and market differentiation in sustaining indigenous enterprises, especially in competitive environments.

Organizational Innovation (B = 0.114, Beta = 0.140, p = 0.026)

This variable is also statistically significant, suggesting that internal restructuring, knowledge sharing, and novel management practices contribute to sustainability. Although its effect size is modest, it highlights the importance of managerial innovation in enhancing long-term business viability.

Eco-Innovation (B = 0.099, Beta = 0.122, p = 0.036)

Eco-innovation shows a positive but slightly lower impact compared to the other forms. Nonetheless, the significance of its coefficient implies that environmentally responsible practices are increasingly relevant, especially in promoting social legitimacy and environmental sustainability.

All five types of innovation practices: product, process, marketing, organizational, and eco-innovation exert a statistically significant positive effect on business sustainability outcomes. Product innovation emerges as the most influential, followed by process and marketing innovations. The results underscore the need for policy and institutional support systems that encourage multi-dimensional innovation in local enterprise development.

Table 3 presents the results

Table 3: Coefficient

Predictor Variable	Unstandardized Coefficients (B)	Std. Error	Beta	t	Sig. (p-value)
(Constant)	1.824	0.218	-	8.372	0.000
Product Innovation	0.182	0.055	0.208	3.309	0.001
Process Innovation	0.147	0.052	0.179	2.827	0.005
Marketing Innovation	0.125	0.049	0.162	2.551	0.012
Organizational Innovation	0.114	0.051	0.140	2.235	0.026
Eco-Innovation	0.099	0.047	0.122	2.106	0.036

Source: Field data, 2025

Result Discussions

Objective One: Nature and Characteristics of Indigenous Entrepreneurship in Northern Ghana

The findings reveal that indigenous entrepreneurship in Northern Ghana is shaped by a blend of informal business structures, entrepreneurial motivation, cultural embeddedness, community-centeredness, necessity-driven

Business Structure and Ownership

Quantitative data showed that 64% of the enterprises were sole proprietorships, followed by 23.20% family-owned and 12.80% group or cooperative-based ventures. This distribution highlights a strong preference for individual or family-driven entrepreneurial models. These businesses are largely micro or small-scale enterprises, often employing

fewer than five people and operating informally within community settings.

Qualitative responses confirmed that many entrepreneurs inherited their businesses from older generations, often viewing entrepreneurship as a social duty rather than a purely economic activity. One interviewee explained, "My mother and grandmother sold these herbs, and I am continuing that tradition—it's how our family has survived." This underscores a deeply embedded cultural continuity in indigenous entrepreneurship.

Entrepreneurial Motivation

The study found that necessity-driven entrepreneurship dominates the sector, with 59% of respondents citing economic hardship or unemployment as their primary motivation. Additionally, 26.80% inherited family

businesses, while only 14% entered due to an identified market opportunity. These figures suggest a reactive rather than proactive entrepreneurial orientation, consistent with findings from other low-income regions where entrepreneurship is often a survival strategy (Yiridomoh *et al.*, 2022) [23].

Cultural Orientation and Social Embeddedness

A key characteristic that emerged was the strong socio-cultural orientation of these businesses. Approximately 83.20% of respondents indicated that their practices are aligned with traditional customs, such as consulting elders or operating according to communal norms. Business decisions are often influenced by chiefs or family heads, particularly in land-dependent sectors like agriculture and crafts. Obligations such as supporting local festivals and employing relatives reflect a relational and collectivist entrepreneurial identity. This finding aligns with the works of Abukari and Adams (2023) [1], who emphasized the role of culture in shaping rural enterprise dynamics in Ghana.

Product and Service Orientation

Indigenous entrepreneurs tend to focus on locally relevant and culturally distinctive products such as shea butter, indigenous textiles, leather goods, and herbal medicines. About 76% of entrepreneurs use locally sourced raw materials and traditional production techniques. However, scaling production and improving product quality are hindered by lack of modern equipment and limited access to training, highlighting a tension between tradition and modernization.

Objective Two: Analyzing the Linkages between Innovation Practices and Business Sustainability Outcomes in the Indigenous Entrepreneurial Context

Drawing on data from both quantitative surveys and qualitative interviews, this objective sought to clarify the practical and developmental impact of innovation on business longevity, environmental stewardship, and livelihood improvements among indigenous entrepreneurs.

Quantitative Insight

The study result demonstrates that all five forms of innovation examined: product, process, marketing, organizational, and eco-innovation positively and significantly influence business sustainability among indigenous entrepreneurs. These findings offer empirical support to the growing body of literature that links innovation capacity with long-term firm performance, particularly in resource-constrained and culturally embedded entrepreneurial environments such as Northern Ghana.

Among the innovation dimensions, product innovation emerges as the most influential predictor of sustainability ($B = 0.182$, $\beta = 0.208$, $p = 0.001$). This supports earlier findings by Adegbite *et al.* (2021) [4], who observed that the ability to develop or adapt products that reflect local needs and cultural preferences significantly enhances customer loyalty and revenue stability. The strength of product innovation in this context suggests that firms that align their offerings with indigenous identities are better positioned for sustained market relevance.

Process innovation ($B = 0.147$, $\beta = 0.179$, $p = 0.005$) also significantly contributes to sustainability. The finding aligns

with research by Darko and Frimpong (2022) [12] which emphasized that operational improvement especially those that blend local knowledge with modern techniques can reduce costs and improve production quality, thereby increasing profitability and environmental efficiency. For indigenous entrepreneurs, such innovations may include local material substitution, hybridized processing techniques, or energy-saving adaptations.

The positive impact of marketing innovation ($B = 0.125$, $\beta = 0.162$, $p = 0.012$) underscores the value of indigenous branding, digital outreach, and culturally resonant messaging. This reflects findings by Narteh and Braimah (2019) [16], who argued that visibility and emotional resonance are key to sustaining market presence for local brands in competitive and rapidly changing marketplaces. Particularly for indigenous firms, marketing innovation may also involve storytelling and social media integration to reach younger and diaspora consumers.

Organizational innovation ($B = 0.114$, $\beta = 0.140$, $p = 0.026$) also shows a statistically significant effect, affirming that changes in internal structure and decision-making processes can enhance business resilience. As shown in work by Adomako and Danso (2021) [2], flatter hierarchies, employee empowerment, and the integration of community participation in decision-making improve both adaptive capacity and continuity in indigenous enterprises.

Eco-innovation ($B = 0.099$, $\beta = 0.122$, $p = 0.036$) exerts a significant yet comparatively smaller positive effect. This outcome is consistent with literature highlighting the increasing awareness among indigenous entrepreneurs of the importance of environmental stewardship (Ampomah *et al.*, 2020) [5]. While still emerging, practices like recycling, energy-saving, and eco-packaging help build brand legitimacy and may attract environmentally conscious consumers and donors. The result suggests that eco-innovation, though secondary in impact, is gaining importance in long-term sustainability strategies.

The findings validate that innovation across product, process, marketing, organizational, and ecological dimensions are key strategic resource that drives sustainable development in indigenous businesses.

Qualitative Insights on Innovation-Sustainability Dynamics

Interview narratives corroborated the quantitative findings.

Entrepreneurs emphasized that innovation helped them:

Diversify income streams: "I started adding shea butter soap to my product line, and now I have more regular customers and income even during the dry season."

Reduce waste and improve resource use: "By using the leftover fabrics for small crafts, I save money and attract more customers who like eco-products."

Expand markets and improve branding: "My son helped me create a WhatsApp catalogue. Now I sell to people outside the community."

Enhance customer trust and retention: "Changing the way we package our dawadawa made more people come to our shop. They say it looks clean and professional now."

These testimonies highlight that innovation is not merely a technological phenomenon but also a cultural and relational process shaped by local needs, knowledge, and contexts.

The findings from the study suggest that innovation is a central driver of business sustainability among indigenous entrepreneurs in Northern Ghana. However, the extent of its

impact is influenced by both internal capacity and external enabling conditions. While many entrepreneurs are already innovating in contextually relevant ways, the scaling and institutional support of such innovation efforts remain weak.

Conclusion

The study set out to explore the dynamic interface between innovation and business sustainability within the indigenous entrepreneurial context of Northern Ghana. The findings collectively advance theoretical, practical, and policy-oriented understandings of indigenous entrepreneurship in under-resourced and culturally embedded settings.

Firstly, the study established that indigenous entrepreneurship in Northern Ghana is characterized by distinctive socio-economic and cultural traits, including strong communal values, resource dependence, and an orientation toward subsistence livelihoods. These contextual realities not only shape the entrepreneurial motives and models adopted by indigenous actors but also inform the unique innovation paths they pursue. Such indigenous business models diverge from mainstream capitalist paradigms and underscore the need for more nuanced, culturally grounded entrepreneurial theories. The research identified five core innovation types: product, process, marketing, organizational, and eco-innovation that are actively employed by indigenous entrepreneurs. These innovation practices are not always formal or high-tech but are often grassroots, incremental, and deeply contextual. They reflect the creative adaptation of local knowledge, materials, and networks to enhance business outcomes. Notably, product innovation emerged as the most prevalent and impactful, signaling the importance of aligning business offerings with local tastes, traditions, and needs.

Secondly, the study provided strong empirical evidence of the positive linkages between innovation practices and business sustainability outcomes. All five innovation types were found to significantly enhance business resilience, income stability, customer loyalty, environmental stewardship, and market access. This confirms the centrality of innovation as a strategic capability for indigenous enterprises and aligns with the dynamic capabilities theory, which emphasizes adaptability and resource reconfiguration in uncertain environments.

Recommendation

Based on the findings and conclusions drawn from this study, these recommendations are proposed to enhance the innovation capacity and sustainability of indigenous entrepreneurs in Northern Ghana. These recommendations are directed at key stakeholders, including government agencies, development organizations, academic institutions, and the entrepreneurs themselves.

Strengthen Indigenous Innovation Ecosystems: The Government and development partners should prioritize the establishment of localized innovation hubs and incubators that reflect the socio-cultural realities of indigenous entrepreneurs. These spaces should integrate traditional knowledge, promote peer-to-peer learning, and facilitate access to affordable technologies. Supporting community-based innovation platforms can foster inclusive growth and build resilience in underserved regions.

Incorporate Indigenous Entrepreneurship into Policy Frameworks: National and regional policy frameworks

must explicitly recognize the role of indigenous entrepreneurship in rural development and poverty alleviation. Policy interventions should promote culturally sensitive business development services, tax incentives for eco-innovative practices, and inclusion of indigenous voices in entrepreneurship policymaking.

Promote Capacity Building through Contextualized Training:

Educational institutions and NGOs should develop modular training programs focused on practical innovation, business sustainability, digital skills, and financial literacy. These programs must be adapted to local languages and learning styles to ensure inclusion and effectiveness. Special attention should be paid to gender-responsive training to empower women entrepreneurs.

Facilitate Market Access and Branding Support: To maximize the benefits of marketing and product innovation, indigenous entrepreneurs require assistance in accessing broader markets. Government agencies and trade associations should support participation in trade fairs, develop rural e-commerce platforms, and facilitate quality branding and packaging services that reflect indigenous identity and authenticity.

Encourage Environmentally Responsible Innovation:

Given the growing relevance of eco-innovation, development actors should introduce incentives for businesses adopting sustainable practices such as waste reduction, renewable energy use, and green packaging. Donor-funded sustainability grants, carbon credit schemes, and environmental certification can further motivate the transition to greener business models.

Suggestions For Future Studies

To build on the findings of this study, future research could consider adopting a longitudinal design to track the innovation trajectories and sustainability transitions of indigenous enterprises over time. Such an approach would provide a more dynamic understanding of how businesses adapt, innovate, and survive under changing socio-economic and environmental conditions.

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