



AGRICULTURAL ENTREPRENEURSHIP AND ECONOMIC DEVELOPMENT IN NORTHERN ADAMAWA, NIGERIA

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ABSTRACT: *This study assessed Agricultural Entrepreneurship and Economic Development in Northern Adamawa, Nigeria. The bedrock of the study was the overdependence on oil revenue by the government, making the state government to pay little attention to agricultural entrepreneurs. The inadequate attention given to agricultural entrepreneurship has a negative effect on agro-based industries and this adversely affects economic development. Data were collected from 400 respondents across Madagali, Michika, Mubi North, Mubi South and Maiha Local Government Areas using both closed and open-ended questionnaires. The analysis involved the use of descriptive statistics and multiple regression. Likert scale technique was used as the measurement instrument for the study, while Cronbach alpha test was used to measure the reliability of the instrument, which showed a result of 76.5% reliability. The result of the study shows that agricultural entrepreneurship is at a low ebb due to the fact that most of the citizens of Northern Adamawa are into subsistence agriculture instead of agricultural entrepreneurship. However, a 1% increase in farm level production (FLP) leads to an increase in economic development by 0.645, while a 1% increase in agricultural service provision (ASP) leads to an increase in economic development by 0.643. The findings of the study therefore show that agricultural entrepreneurs, such as farm level production, and agricultural service provision have a positive effect on economic development in Northern Adamawa at 5% level of significance. The study therefore recommends that while encouraging people of Northern Adamawa to engage in Agriculture as a business, for economic development, the government needs to encourage more farmers by the provision of loans, arable lands and subsidized agricultural services, such as transportation, storage facilities and agricultural education. This is to enable the subsistence farmers to partake in commercial agriculture.*

KEYWORDS: Agriculture, Entrepreneurship and Development.



INTRODUCTION

Economic development is a major issue for nations seeking to improve the standards of living of the populace. Economic development is nothing but an increase in income, improved infrastructure, employment opportunities, and reduction in poverty and inequality (Todaro, 2015). There is a popular view that agricultural entrepreneurship plays a significant role in driving economic development, especially in developing countries where agriculture is a primary economic activity (World Bank, 2020).

Agricultural entrepreneurship is a strategic pathway to achieving economic development. Agricultural entrepreneurship involves the identification, development, and management of innovative agricultural ventures that not only enhance productivity but also create employment and income-generating opportunities (Kahan, 2013). In Asia, Latin America, and Sub-Saharan Africa, governments at all levels together with development partners have increasingly focused on strengthening agripreneurship as a response to rural poverty and youth unemployment (FAO, 2017).

Agriculture contributes significantly to the GDP of African countries and employs over 60% of the labor force, but its potential remains underutilized due to structural constraints such as inadequate infrastructure, limited access to finance, and low levels of mechanization (AfDB, 2019). Agricultural entrepreneurship therefore offers an opportunity to transform the sector from subsistence farming into a market-oriented, high-value enterprise that can drive sustainable development and economic growth (Eneji et al., 2019). Thus innovative agripreneurship helps to diversify the economy and reduce dependence on oil and extractive industries.

Within Nigeria, agriculture remains the backbone of rural livelihoods, contributing about 23% to the GDP and employing nearly 70% of the labor force (NBS, 2022). However, the agricultural sector in the country continues to face productivity challenges due to inadequate attention by the government, in the form of insufficient investment and policy inconsistencies. Despite these challenges, agricultural entrepreneurship has shown promise in driving rural development, especially in northern Nigeria, where agriculture is a way of life (Oni et al., 2020). Several initiatives, including the Anchor Borrowers Programme and the Youth Farm Lab, were introduced to encourage youth participation in agribusiness, aiming to reduce rural-urban migration and improve economic resilience (CBN, 2021).

These initiatives are yet to bring agricultural entrepreneurship to most of the citizens in Northern Adamawa. Northern Adamawa is bedeviled by unemployment, poverty, and economic underdevelopment, exacerbated by insecurity and limited access to education and technology (Aliyu & Ibrahim, 2020). That notwithstanding, the emergence of local agripreneurs who engage in poultry farming, irrigation-based vegetable production, and dairy processing is a stride towards economic self-reliance. This is because the entrepreneurial activities contribute not only to job creation, but local food production, and income generation. Despite gains from agriculture, agricultural entrepreneurship remains backwards due to overdependence on oil revenue. It is for this reason that the study assessed agricultural entrepreneurship and economic development in Northern Adamawa. The hypotheses that farm level production has no significant effect on economic development in Northern Adamawa and that agricultural service provision has no significant effect on economic development in



northern Adamawa were tested to proffer solution to overdependence on oil revenue through recommendations.

Objectives of the Study

The major objective of the study was to assess the effect of agricultural entrepreneurship on economic development in Northern Adamawa. The specific objectives were to:

- i. assess the effect of farm level production on economic development in Northern Adamawa.
- ii. determine the effect of agricultural services provision on economic development in Northern Adamawa.

CONCEPTUAL CLARIFICATIONS

Agricultural Entrepreneurship

Agricultural entrepreneurship is the process of recognizing, developing, and managing agricultural ventures with the aim of generating profit and contributing to food security and rural development. It involves the application of entrepreneurial skills such as innovation, risk-taking, and resource management within the agricultural sector. Entrepreneurs in agriculture engage in crop and livestock production, agro-processing, and agricultural marketing, by introducing new technologies or practices to improve productivity and sustainability (Ndubisi, 2020).

According to Esiobu et al. (2015), agricultural entrepreneurship involves innovative and risk-bearing activities that individuals undertake to commercialize agricultural production. This definition stresses the entrepreneurial mindset of rural farmers who go beyond subsistence farming to establish profitable agri-business ventures. Agricultural entrepreneurs contribute significantly to the agricultural value chain by creating employment opportunities, increasing food production, and fostering rural economic growth. Olowa and Olowa (2016) define agricultural entrepreneurship as the capacity of individuals to identify business opportunities within agriculture, mobilize necessary resources, and effectively manage agribusiness ventures for both economic and social gains. Their definition emphasizes the importance of education, training, and access to capital in nurturing agricultural entrepreneurs. They argued that entrepreneurship in agriculture is a critical strategy for transforming the sector from a low-productivity, subsistence-based system to a high-income, market-oriented enterprise.

Farm Level Production

Farm level production is the process by which a farmer combines land, labor, capital, and management to produce crops and livestock within a specific farming unit, with the aim of maximizing productivity or profit (Olukosi & Erhabor, 2008). Farm level production is the physical and economic transformation of inputs into outputs at the farm level, emphasizing efficient resource use and decision-making to achieve optimal output (Heady & Dillon, 1961). According to the Food and Agriculture Organization (FAO), farm level production involves the implementation of farming practices and technologies by individual farmers aimed at



producing food and agricultural products for household consumption and market supply (FAO, 2017).

In addition, farm level production can be described as the on-field activities conducted by farmers such as land preparation, planting, input application, and harvesting intended to produce agricultural goods (Adewumi & Omotesho, 2002). Farm level production is the fundamental unit of agricultural development, wherein individual farmers' decisions and actions play a crucial role in influencing food security, rural employment, and economic growth (World Bank, 2007).

Agricultural Services Provision

FAO (2017) defines agricultural services provision as the delivery of both public and private support services to farmers, including extension services, input supply, credit, and marketing services that enhance agricultural productivity and rural livelihoods. According to Birner et al. (2009), agricultural services provision refers to the institutional arrangements through which knowledge, inputs, financial services, and technologies are made accessible to farmers to support sustainable agricultural development. Kilelu et al. (2013) describe agricultural services provision as the facilitation of a range of support functions such as advisory, technical, and financial services necessary for farmers to innovate and remain competitive in agricultural markets.

As stated by Swanson and Rajalahti (2010), agricultural service provision encompasses the systems and actors involved in delivering research, extension, training, and input services to farmers in a coordinated and responsive manner. Anderson and Feder (2014) define agricultural services provision as the organized delivery of public goods and services related to farming practices, technologies, and market access to improve smallholder productivity and welfare.

Economic Development

According to Nnadozie (2019), economic development in Nigeria refers to the sustained, coordinated expansion of the economy through improved infrastructure, employment creation, poverty reduction, and an increased standard of living for the population. This definition emphasizes both the physical and social aspects of development, highlighting the importance of government-led initiatives that directly impact the livelihoods of citizens.

Adegbite and Aderemi (2020) provided a more structural perspective, describing economic development in Nigeria as the transformation of the economy from a primarily agrarian structure to an industrial and service-based economy. This process aims to improve the general well-being of the populace, implying a shift in economic activities that can support higher productivity and income levels. In a similar vein, Ogunleye (2018) defines economic development as a process through which Nigeria achieves a sustained increase in per capita income, equitable distribution of wealth, reduction in unemployment, and broader access to basic services such as health and education. This definition underscores the role of equity and social inclusion in assessing development progress.

Furthermore, Bello and Danjuma (2021) define economic development in Nigeria as the continuous improvement in the socio-economic indicators of citizens, especially through inclusive growth, diversification of the economy, and innovation. Their emphasis on inclusivity



and diversification aligns with current national goals of reducing reliance on crude oil and promoting sectors like agriculture, technology, and manufacturing. Lastly, Muhammed (2022) provides a human-centered approach by defining economic development as structural changes in the Nigerian economy that focus on poverty reduction, the promotion of sustainable livelihoods, and the expansion of human capabilities. This definition incorporates aspects of sustainability and human capital development, highlighting the need for long-term strategies that empower individuals and communities.

THEORETICAL FRAMEWORK

This theoretical framework, grounded in Schumpeterian innovation theory and agrarian transformation theory, provides a multidimensional lens for analyzing the role of agricultural entrepreneurship in Nigeria's economic development. By leveraging entrepreneurial capacities within the agricultural sector, Nigeria can accelerate inclusive and sustainable economic growth.

Schumpeterian Innovation Theory of Entrepreneurship

Schumpeter (1934) introduced the concept of "creative destruction" to describe the dynamic role of entrepreneurs in driving economic transformation. According to Schumpeter, entrepreneurs disrupt existing market structures by introducing innovations—new products, processes, or business models—that render old ones obsolete. This cycle of innovation fosters economic progress by continuously replacing the outdated with the novel. In Nigeria, agricultural entrepreneurs exemplify Schumpeter's theory through their transformative activities in the farming sector. By introducing improved farming techniques, adopting mechanized equipment, developing agro-processing facilities, and enhancing agricultural value chains, these entrepreneurs are reshaping traditional subsistence farming into a more efficient and market-oriented enterprise. This transformation is particularly vital for Nigeria, which seeks to diversify its economy and reduce over-reliance on oil revenues. Through innovation-led agricultural entrepreneurship, the country can unlock the full potential of its vast arable land, create employment, ensure food security, and foster inclusive economic growth, thereby aligning with national development goals.

Agrarian Transformation Theory

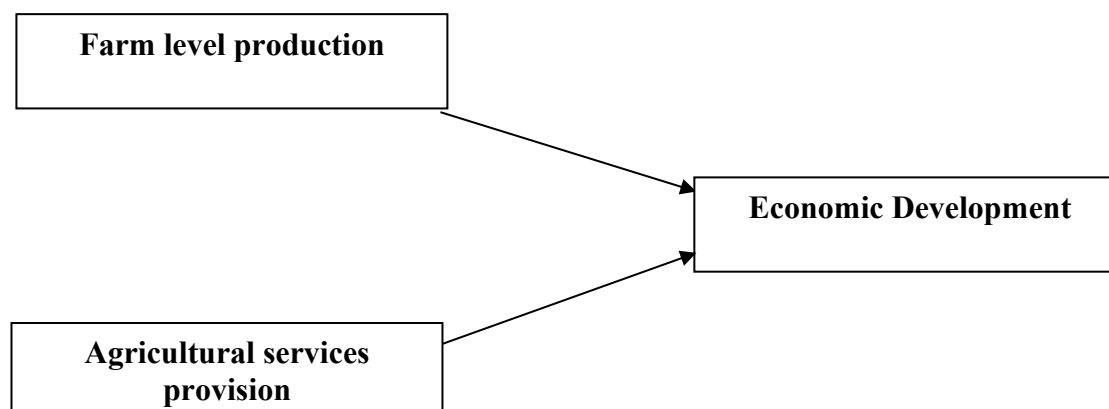
The theory of structural change, notably presented by W. Arthur Lewis in 1954, provides a framework for understanding economic development through the reallocation of labor from low-productivity sectors, such as traditional agriculture, to high-productivity sectors like industry and modern services. According to Lewis, many developing economies have a surplus labor force in subsistence agriculture, which can be gradually absorbed into more productive activities without reducing agricultural output. This transition drives overall economic growth and improves living standards by increasing national productivity. As surplus labor shifts to modern sectors, it supports industrial expansion, increases incomes, and stimulates demand for goods and services, which in turn fuels further economic transformation.



CONCEPTUAL FRAMEWORK

Independent Variables

Dependent Variable



Source: *Researcher's Design, 2025*

REVIEW OF EMPIRICAL STUDIES

Umar (2023), in his study titled “Impact of Agricultural Entrepreneurship on Economic Growth in Northern Adamawa: A Case Study Approach,” focused on selected local government areas in Northern Adamawa and involved a population of 500 agricultural entrepreneurs and local economic development officers. The sample consisted of 100 agricultural entrepreneurs selected through systematic random sampling and 10 key informants selected purposively. Data were collected using questionnaires and in-interviews, while descriptive statistics, and multiple regression were used for analysis. Their findings revealed that agricultural entrepreneurship contributes significantly to GDP growth and food security in the region. Challenges such as climate change impacts and inconsistent policy were noted by the researchers. The study recommended formulation of clear and consistent agricultural policies to support entrepreneurship programs and enhance public-private partnerships. For future research, the authors proposed examining how climate change mitigation policies affect the sustainability of agricultural entrepreneurship in the area. The study however failed to cover all the five local government areas in Northern Adamawa.

Adamu and Bala (2022) explored the relationship between agricultural entrepreneurship and rural economic development in Northern Adamawa through a cross-sectional study titled “Agricultural Entrepreneurship and Rural Economic Development: Evidence from Northern Adamawa State.” Their population comprised registered agricultural entrepreneurs and cooperative members totaling about 1,500 individuals. Using purposive sampling, they surveyed 150 agricultural entrepreneurs. Data were collected using questionnaires and focus group discussions (FGDs), and analyzed using SPSS for descriptive and correlation analyses. The study found that agricultural entrepreneurship positively correlates with increased rural employment and poverty reduction. Membership in cooperatives was shown to enhance access to agricultural inputs and market opportunities. Despite these positive outcomes, the study highlighted challenges including inadequate capital, weak market linkages, and fluctuating input prices that hamper entrepreneurial growth. The authors concluded that empowering



agricultural entrepreneurs via cooperative societies can stimulate rural economic growth. The study recommended strengthening cooperatives to improve bargaining power and input access, establishing government-backed microcredit schemes tailored towards agricultural entrepreneurs. The study suggested that future research should focus on the role of gender in agricultural entrepreneurship and economic development within Northern Adamawa. However, the study sampled only 150 farmers for the research.

Ibrahim and Musa (2021) conducted a descriptive survey study titled “The Role of Agricultural Entrepreneurship in Enhancing Economic Development in Northern Adamawa.” The research was carried out among smallholder farmers and agricultural entrepreneurs in Northern Adamawa, with a population estimated at 2,000 individuals. Using stratified random sampling, they selected a sample of 200 respondents. Data collection involved structured questionnaires and interview schedules, and analysis was done through descriptive statistics and regression analysis. Their findings revealed that agricultural entrepreneurship significantly enhances household income and job creation in the region. However, the study also identified inadequate infrastructure as a major constraint hindering the full potential of agricultural entrepreneurship. The authors concluded that agricultural entrepreneurship is a crucial engine for economic development in Northern Adamawa but emphasized the need for enhanced support through improved infrastructure, finance, and skills training. They recommended improvement in credit accessibility, investing in rural infrastructure such as roads and storage facilities, and strengthening extension services. For future research, they suggested investigating the role of digital technologies and mobile platforms in boosting agricultural entrepreneurship in the region. Nevertheless the study did not cover all the local government areas.

Yahaya (2021) examined the effect of farm-level agricultural production on economic growth in Kaduna State, Northern Nigeria, in his study titled “Farm-Level Agricultural Production and Its Effect on Economic Growth in Northern Nigeria.” The study employed a cross-sectional survey design and targeted about 8,000 registered farmers, from which a sample of 400 was selected using systematic random sampling. Questionnaire was used in collecting data, while analysis involved descriptive statistics and econometric modeling using Ordinary Least Squares regression. The findings revealed that farm-level production has a positive and significant impact on Kaduna State’s GDP growth. Increased agricultural output was linked to higher employment rates and improved living standards within the region. Despite these benefits, challenges such as poor rural infrastructure and limited market access for farm produce were highlighted. The study concluded that farm-level production is a key driver of economic growth in Northern Nigeria, particularly by generating employment and increasing household income. The research recommended improving rural infrastructure, including roads and storage facilities, to enhance Agricultural entrepreneurship. The study however was not conducted in Adamawa State.



METHODOLOGY

The study adopted a quantitative research design. Due to difficulties involved in getting the actual number of farmers in Northern Adamawa, Cochran's formula was used to determine the sample size of 384. Sixteen (16) farmers were added to the sample size pro rata to the total population of each local government to arrive at a sample size of 400. Data were therefore collected from the 400 respondents across Madagali, Michika, Mubi North, Mubi South and Maiha Local Government Areas using structured questionnaires. Likert scale was used to measure respondents' perceptions, and the instrument's reliability was confirmed with a Cronbach alpha score of 76.5%, indicating good internal consistency. Descriptive and multiple regression analysis was used to determine the impact of FLP and ASP on economic development at 5% level of significance.

DISCUSSION OF RESULTS

Descriptive Statistics

Table 1: Mean and Standard Deviation of Farm Level Production and Economic Development in Northern Adamawa

Variables	N	Min.	Max.	Mean	Std. D
Farm-level production contributes significantly to household income in my area.	400	3	5	4.78	0.436
Increased crop yield has a direct impact on the local economy.	400	2	5	4.38	0.552
Farming activities provide employment for a large portion of the community.	400	3	5	4.60	0.508
Poor road networks limit the market access of farm produce.	400	2	5	4.56	0.562
Climate change has negatively affected agricultural productivity.	400	3	5	4.41	0.510
Youth involvement in farming has increased in recent years.	400	4	5	4.60	0.490
Agricultural production has led to the establishment of agro-allied businesses.	400	1	5	4.56	0.591

Source: *Field Survey (2025)*

The findings from Table 1 show that farm-level production significantly contributes to household income in Northern Adamawa, with a high mean of 4.78 and a low standard deviation of 0.436, indicating strong agreement among respondents. Increased crop yield also impacts the local economy (mean = 4.38, SD = 0.552), and farming provides employment for many in the community (mean = 4.60, SD = 0.508). Poor road networks are seen as a major barrier to market access (mean = 4.56, SD = 0.562), while climate change is perceived to negatively affect agricultural productivity (mean = 4.41, SD = 0.510). Encouragingly, youth involvement in farming has risen (mean = 4.60, SD = 0.490), and agricultural activities have led to the growth of agro-allied businesses (mean = 4.56, SD = 0.591). The consistent high



means and low standard deviations shows a strong agreement on the importance and challenges of farm-level production in Northern Adamawa.

Table 2: Mean and Standard Deviation of Agricultural Services Provision and Economic Development in Northern Adamawa

Variables	N	Min.	Max.	Mean	Std. D
Provision of agricultural services has significantly improved crop yields in Northern Adamawa.	400	3	5	4.21	0.429
Access to extension services has empowered farmers with better farming techniques.	400	2	5	4.57	0.545
Subsidies on fertilizers and seedlings have boosted farmers' productivity.	400	3	5	4.39	0.522
Agricultural mechanization has enhanced economic activities in the region.	400	3	5	4.37	0.519
Poor access to credit limits the positive impact of agricultural services on development.	400	2	5	4.78	0.492
Training programs for farmers have contributed to improved income and living standards.	400	3	5	4.58	0.528
Collaboration between local farmers and government agencies is effective.	400	1	5	4.56	0.591

Source: *Field Survey (2025)*

The data in Table 2 shows a strong agreement among respondents that agricultural services positively influence economic development in Northern Adamawa. High mean scores across variables indicate widespread support, especially regarding the importance of access to credit (mean = 4.78), which remains a major challenge. Other key factors include access to extension services, training programs, and collaboration with government agencies, all vital for farmer empowerment. Subsidies and mechanization are also recognized as essential for boosting productivity. The low standard deviations suggest consistent views among the 400 respondents, emphasizing the critical role of agricultural services despite persistent credit access issues.

Table 3: Model Summary of the Effect of Farm Level Production on Economic Development

Variables	Coefficient	Std. Error	T-Values	P-Values	Hypotheses
1 (Constant)	0.645	1.040	5.119	0.000	
Farm level production	0.563	0.028	5.295	0.000	Rejected
R	0.358				
R ²	0.432				
Adjusted R	0.441				
F-Stats	132.02				

a. Dependent Variable: ED

Source: *Field Survey (2025)*



The results presented in Table 3 provide an overview of the regression analysis assessing the effect of farm level production on economic development. The Pearson correlation results indicate a strong positive bivariate relationship between the dependent and independent variables ($r = 0.358$). The coefficient of determination (R-Square) derived from the regression model summary reveals that farm level production accounts for approximately 43.2% of the variation in economic development. The remaining 56.8% of the variation is attributed to factors not included in this study's model. The analysis of variance (ANOVA) results, which assess the model's goodness of fit, show statistical significance ($F = 132.02$, $P < 0.05$), suggesting that the variables in the model collectively predict economic development. The unstandardized regression coefficient of 0.645 indicates that a one-unit increase in farm level production leads to a 0.645 unit increase in economic development, with this relationship being statistically significant at the 5% level. Therefore, the study concludes that farm level production has a significant and positive effect on economic development in Northern Adamawa State, Nigeria.

Table 4: Model Summary of the Effect of Agricultural Service Provision (ASP) on Economic Development

Variables	Coefficient	Std. Error	T-Values	P-Values	Hypotheses
1 (Constant)	0.643	1.031	6.431	0.000	
Farm level production	0.761	0.044	6.356	0.000	Rejected
R	0.458				
R ²	0.601				
Adjusted R	0.678				
F-Stats	99.821				

a. Dependent Variable: ED

Source: Field Survey (2025)

The results presented in Table 4 provide an overview of the regression analysis assessing the effect of agricultural service provision on economic development. The Pearson correlation results indicate a strong positive bivariate relationship between the dependent and independent variables ($r = 0.458$). The coefficient of determination (R-Square) derived from the regression model summary reveals that agricultural service provision accounts for approximately 60.1% of the variation in economic development. The remaining 40.9% of the variation is attributed to factors not included in this study's model. The analysis of variance (ANOVA) results, which assess the model's goodness of fit, show statistical significance ($F = 99.821$, $P < 0.05$), suggesting that the variables in the model collectively predict economic development. The unstandardized regression coefficient of 0.643 indicates that a one-unit increase in farm level production leads to 0.643 unit increase in economic development, with this relationship being statistically significant at the 5% level. Therefore, agricultural service provision has a significant and positive effect on economic development in Northern Adamawa State, Nigeria.



CONCLUSION AND RECOMMENDATIONS

The study concludes that farm level production and agricultural service provision have a significant and positive effect on economic development in Northern Adamawa State, Nigeria.

The study therefore recommends that while encouraging people of Northern Adamawa to engage in agriculture as a business, for economic development, the government needs to encourage more farmers by the provision of loans and arable lands, and subsidize agricultural services such as transportation, storage facilities and agricultural education. This is to enable subsistence farmers to partake in commercial agriculture.

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