



ADAN J. Agric. 2025, 6 (2): 154-162
© Association of Deans of Agriculture in Nigerian Universities (ADAN)
ISSN 2736-0385
DOI: 10.36108/adanja/5202.60.0271

Investigating Effects of Globalization on Agribusiness in Benue State, Nigeria: A case study of Agro-allied firms

*^AOkpeke, G. A., **Okpachu, O.G., *** Adejo, A. M.

*Department of Agribusiness Management, Joseph Sarwuan Tarka University, Makurdi, Benue State

**Federal Ministry of Agriculture and Food Security, Abuja, FCT.,

***Department of Agricultural Economics, Joseph Sarwuan Tarka University, Makurdi, Benue State, Nigeria

^a Corresponding Author: okpeke4god1972@gmail.com

Abstract

This study investigates the effects of globalization on agro-allied firms in remote communities of Benue State, Nigeria, using a sample size of 133 small-scale enterprises (rice millers 42.9 %, cassava/grain grinders 30.8 %, timber sawyers 26.3 %). Most firms (55.6 %) employ 1–5 workers. Approximately 70 % reported tariff reductions on imported agricultural products, 26.3 % had formal trade agreements, and 24.8 % engaged in foreign partnerships. Technological transfer was reported by 69.9 % of firms, and 63.9 % adopted foreign machinery/technologies. Linear regression analysis revealed that trade liberalization ($\beta = 0.471$, p value; 0.001), global market trends ($\beta = 0.195$, $p = 0.025$), and hiring foreign workers ($\beta = 0.610$, p value; 0.001) significantly enhance productivity. However, globalization variables showed no significant impact on profitability or competitiveness. The study concludes that while globalization improves productivity in remote agro-allied firms, structural constraints limit broader performance gains. The study recommends the Strengthen of rural infrastructure (roads, electricity, and digital connectivity) to lower transaction costs and improve market access for agro-allied firms. It recommends targeted financial incentives (low-interest credit, matching grants) and institutional support to facilitate adoption of foreign machinery and technology transfer.

Key word: Globalization, Agribusiness, Agro-allied firms.

Introduction

Globalization refers to the increasing connection and exchange of goods, services, and ideas between countries (Tsai, 1995). It has led to increased trade, investment, and economic growth in many countries (Singh and Dhumale, 2000). It has transformed the way businesses operate worldwide, including agribusiness in remote communities. By opening up markets, facilitating technology transfer, and integrating value chains globally. Understanding the dynamics of globalization's impact on remote communities' agribusiness is crucial for fostering inclusive and sustainable development.

Singh and Dhumale, (2000), noted that globalization has contributed to the growth of the Nigerian economy, particularly in the agricultural sector. According to Tsai, (1995) globalization has lifted millions of people out of poverty worldwide. However, Han et. al. (2012) warns that globalization has also led to increased income inequality in many countries. However, it also poses challenges such as job displacement and cultural homogenization (Han et. al. 2012).

Market access refers to the ability of a business to sell its products or services to customers in a particular market (FAO, 2020). It is critical for agricultural businesses,

particularly small-scale farmers, to access markets and sell their produce at competitive prices (Wanlin 2023). In addition, market access can be facilitated through infrastructure development, trade agreements, and market information systems (Aker 2010). FAO (2020), reported that improving market access for small-scale agro-allied firms can lead to increased income and food security. Wanlin (2023) noted that market access is a key factor in the success of agricultural businesses in developing countries. Aker (2010) highlights the importance of market information systems in facilitating market access for businesses.

Technology transfer refers to the sharing or exchange of knowledge, skills, and equipment between individuals, organizations, or countries ((Majeed, 2015). It is critical for agricultural businesses to adopt new technologies and improve productivity (Cinar et. al. 2021). Technology transfer can be facilitated through partnerships, training, and investment in research and development (Milanovic, 2005). According to Majeed (2015), technology transfer has contributed to the growth of the agricultural sector in many developing countries. Cinar et. al. (2021) notes that technology transfer has improved the productivity and competitiveness of agricultural businesses in Africa. According to Milanovic, (2005), highlights the importance of investment in research and development to facilitate technology transfer.

Agro-allied firms development refers to the growth and improvement of agricultural businesses, including farming, processing, and marketing (Wanlin 2023). It is critical for food security, employment, and economic growth in many countries (FAO, 2020). These can be facilitated through investment in infrastructure, training, and market access (Tsai, 1995). According to Wanlin (2023), agribusiness development has contributed to the reduction of poverty and hunger in many developing countries. FAO (2020) notes that agribusiness development is critical for food security and nutrition. Tsai, (1995) highlights the importance of investment in agribusiness

development to achieve sustainable economic growth.

Statement of the Problem

Remote communities often face challenges in agribusiness development due to limited access to markets, technologies, and resources. Globalization presents opportunities for connecting these communities to broader markets and value chains. However, the impact of globalization on agribusiness in remote communities is not well understood, necessitating a study to explore these dynamics.

Despite the growing importance of technology transfer in agribusiness development, there is a lack of research investigating the effectiveness of technology transfer initiatives in improving market access for small-scale agro-allied firms in Nigeria (Cinar et. al. 2021), and Benue State in particular. The limited availability of modern technologies and inadequate infrastructure hinder the ability of small-scale agro-allied firms to access markets, leading to reduced income and food insecurity (Singh and Dhumale, 2000). Furthermore, the impact of globalization on agribusiness development in Nigeria remains unclear, with some studies suggesting that it has led to increased competition and decreased market share for local farmers (Han et. al. 2012).

The United Nations Conference on Trade and Development ((Majeed, 2015)) notes that technology transfer is a critical component of agricultural development, but its implementation is often hindered by inadequate policies and institutional frameworks. Tsai, (1995) also highlights the importance of global value chains in promoting agricultural development, but notes that small-scale agro-allied firms in Nigeria often face significant challenges in accessing these chains.

Objectives of the Study are to:

1. identify the demographic characteristics of agribusiness in remote communities.
2. analyze the integration of remote communities into global agribusiness value chains.

Test of Hypotheses

H01: Globalization does not positively impact on agribusiness growth in remote communities.

This study focuses on the impact of globalization on agribusiness (small scale agro-allied firms) in remote communities, considering aspects like market access, technology transfer, value chain integration, challenges.

The impact of globalization on agribusiness in remote communities can inform policies and strategies to enhance benefits for these communities. It can contribute to inclusive development by highlighting ways to leverage globalization for agribusiness growth in remote areas.

Methodology

The study adopts cross sectional survey in finding effects of globalization on agribusiness in Benue State. The population for this study was 200 made up of all small scale agro-based firms. The sample size for the study is 133 small scale agro-based entrepreneurs in the selected areas of Benue State (L.G.A Secretariat). This was determined based on entrepreneurs who have processing facilities and attends to an average of 10 customers weekly

The sample size for the study was obtained using Taro Yamane formula, and Bowley's proportional allocation technique was adopted to allocate the sample to the selected areas. Sample size of (133) small scales agro-based enterprises were selected. A multistage simple random sampling technique was used to select the entrepreneurs for this study. The first stage involved the stratification of the state into three (3) agricultural zones namely; zone A, zone B and zone C. In the second stage, three (3) Local Government Areas where the activities of small scale agro-based enterprises are high were purposively selected. Three enterprises including Rice millers, Saw millers and Cassava/Grain grinders were purposively selected and allocated.

Here is Taro Yamane's formula below:

$$n = \frac{N}{1+N(e)^2}$$

Where;

n = Sample size

N = Population Size

e = Significant level of error (0.05) or 5%

Bowley's (1926) proportional allocation technique was used to distribute the sample size among the selected Local Government Areas. The formula is shown below.

$$n_h = \frac{n \times N_h}{N}$$

Where:

n_h = Number of units to be allocated to each stratum

n = Total sample size

N_h = Total number of elements in each stratum

N = Total population of the study

Bowley's proportional allocation technique

$$n_h = \frac{n \times N_h}{N}$$

Allocation for Katsina Ala

$$n_h = \frac{133 \times 50}{200} = 33 \text{ approximately (Breakdown= Rice millers 15, Saw millers 7, Cassava/Grain grinders 11)}$$

Allocation for Makurdi

$$n_h = \frac{133 \times 100}{200} = 67 \text{ approximately (Breakdown= Rice millers 27, Saw millers 17, Cassava/Grain grinders 23)}$$

Allocation for Otukpo

$$n_h = \frac{133 \times 50}{200} = 33 \text{ approximately (Breakdown= Rice millers 15, Saw millers 11, Cassava/Grain grinders 7)}$$

Data Collection

Data for this study was collected from primary sources with the use of a well-structured questionnaire to investigate effects of globalization on agribusiness in Benue State, Nigeria. The total of 133 questionnaires was distributed.

Validating of the Instrument

The construct validity by factor analysis was used and shows a significant probability of AVE 0.762 therefore is accepted. (i.e. AVE 0.762 > 0.55 cutoff point).

Reliability of the Instrument

To obtain the reliability of the questionnaire, questionnaires were trial tested by administering 20 copies of the questionnaires to the enterprises within the study area twice in different period. For the purpose of obtaining the internal consistency of the research instrument, Cronbach Alpha reliability method was used to obtain the value in the table.

Variable Specification

Changes in firms Productivity measured in Likert scale (1-3)
 Changes in firms Profitability was measured in Likert scale (1-3)
 Changes in firms competitiveness was measured Likert scale (1-3)
 Trade Liberalization was measured in Likert scale (1-3)
 Foreign Direct Investment (FDI) was measured in Likert scale (1-3)
 Global Market Trends was measured in Likert scale (1-3)
 Technological Transfer was measured in Likert scale (1-3)
 Labour Mobility was measured in Likert scale (1-3)
 Size of firm was measured in number of employees
 Type of firms was measured (yes= 1, No=0)
 Tariff reduction on imported agric products was measured in (yes= 1, No=0)
 Trade agreement was measured in (yes= 1, No=0)

Foreign partnership was measured in (yes= 1, No=0)

New technology/Management expertise was measured in (yes= 1, No=0)

Changes in global prices affecting your price at home was measured in (yes= 1, No=0)

Foreign machine/technologies adoption was measured in (yes= 1, No=0)

Technology transfer improve productivity was measured in (yes= 1, No=0)

Hired foreign worker was measured in (yes= 1, No=0)

Bought new skills/expertise was measured in (yes= 1, No=0)

Model Specification

A linear regression was used to analyzed effects of Globalization on Agribusiness

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9$$

Where:

Y= Changes in firms Productivity measured in Likert scale (1-3)

Y= Changes in firms Profitability was measured in Likert scale (1-3)

Y= Changes in firms competitiveness was measured Likert scale (1-3)

X₁=Trade Liberalization was measured in Likert scale (1-3)

X₂=Foreign Direct Investment (FDI) was measured in Likert scale (1-3)

X₃=Global Market Trends was measured in Likert scale (1-3)

X₄=Technological Transfer was measured in Likert scale (1-3)

X₅=Labour Mobility was measured in Likert scale (1-3)

X₆= Trade agreement was measured in (yes= 1, No=0)

X₇= Foreign machine/technologies adoption was measured in (yes= 1, No=0)

X₈= Hired foreign worker was measured in (yes= 1, No=0)

X₉= Bought new skills/expertise was measured in (yes= 1, No=0)

X is the explanatory variable (Independent variable)

b=the slope of the line

a= is the intercept

Results and Discussion

Demographic Characteristics of the Sample

The demographic profile of the agro-allied firms in Benue State, Nigeria (Table 1), reveals key insights into their structure and exposure to globalization. The majority of the firms are rice millers (42.9%), followed by cassava/grain grinders (30.8%) and timber sawyers (26.3%). Most firms are micro-enterprises, with 55.6% employing 1–5 workers and only 14.3% having 11 or more employees. This aligns with findings that small-scale agribusinesses dominate Nigeria's rural economy (Singh and Dhumale, 2000; Wanlin 2023).

Regarding globalization exposure, about 69.9% reported tariff reductions on

imported agricultural products, indicating openness to trade liberalization, while only 26.3% had formal trade agreements. Foreign partnerships were low (24.8%), but most firms (58.6%) reported acquiring new technology or management expertise, and 63.9% adopted foreign machinery/technologies. Technological transfer was reported by 69.9% of respondents, consistent with studies highlighting its importance in improving productivity in African agribusinesses (Cinar et. al. 2021; Majeed, 2015). However, hiring foreign workers was rare (26.3%). Overall, the sample reflects a sector with limited firm size but moderate engagement with global markets and technology.

Table 1: Demographic Information and Firm Performance

Variable	Frequency	percentage
Type of Agro-Allied Firm		
Cassava/Grain grinder	41	30.8
Rice miller	56	42.9
Timber sawyer	36	26.3
Total	133	100
Size of Firm (No of Employee)		
1 - 5	74	55.6
6 – 10	40	30.1
≥11	19	14.3
Total	133	100
Tariff reduction on imported agric products		
No	40	30.1
Yes	93	69.9
Total	133	100.0
Trade agreement		
No	98	73.7
Yes	35	26.3
Total	133	100.0
Foreign partnership		
No	100	75.2
Yes	33	24.8
Total	133	100.0
New technology/Management expertise		
No	55	41.4
Yes	78	58.6
Total	133	100.0

Changes in global prices		
No	58	43.6
Yes	75	56.4
Total	133	100.0
Foreign machine/technologies adoption		
No	48	36.1
Yes	85	63.9
Total	133	100.0
Technological Transfer		
No	40	30.1
Yes	93	69.9
Total	133	100.0
Hired foreign worker		
No	98	73.7
Yes	35	26.3
Total	133	100.0
Bought new skills		
No	63	47.4
Yes	70	52.6
Total	133	100.0
Trade agreement		
No	85	63.9
Yes	48	36.1
Total	133	100.0

Source: Field Survey 2025

Effect of Globalization on Firms Productivity

The regression model for productivity ($R^2 = 0.478$) shows significant positive effects of trade liberalization ($\beta = 0.471$, $p < 0.001$). This suggests that as trade liberalization increases, productivity also increases. This could be due to increased access to foreign markets, technologies, and competition, which can drive firms to become more efficient. Hiring foreign workers ($\beta = 0.610$, $p < 0.001$), this indicates that adopting foreign machines and technologies has a strong positive impact on productivity. This is likely because new technologies can improve production processes

and efficiency. Global market trends also positively influence productivity ($\beta = 0.195$, $p = 0.025$). This suggests that transferring technology from abroad has a positive impact on productivity, possibly due to the acquisition of new knowledge and skills, while foreign machine adoption negatively impacts it ($\beta = -0.128$, $p = 0.024$). The findings suggest that reducing trade barriers and accessing skilled labor enhance productivity, consistent with trade liberalization theories (Singh and Dhumale, 2000). The negative effect of foreign machinery may reflect underutilization or high costs in low-capacity firms (Cinar et. al. 2021).

Table 2 A: Effects of Globalization on productivity of Agro-Allied firms

Variable	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
Constant	.051	.025		2.018	.046
Trade Liberalization	.471	.088	.478	5.358	.000*
Foreign Direct investment (FDI)	-.051	.039	-.050	-1.315	.191 NS
Global market trend	.195	.086	.187	2.269	.025*
Technological Transfer	.013	.065	.014	.201	.841 NS
Labour Mobility	.031	.041	.034	.759	.450 NS
Foreign machine/tech. adoption	-.128	.056	-.136	-2.282	.024*
Hired foreign worker	.610	.085	.619	7.167	.000*
Bought new skills	-.156	.082	-.152	-1.915	.058 NS
Foreign partnership	-.057	.061	-.063	-.933	.353 NS

Dependent Variable: Productivity

Source: Data analysis 2025, NS: Not significant, * means significant at 0.05**Effects of Globalization on Profitability of Agro-Allied firms**

The model for profitability ($R^2 = 0.131$) shows no significant effects from most globalization variables. Trade liberalization ($\beta = 0.034$, $p = 0.947$) and FDI ($\beta = 0.348$, $p = 0.191$) do not significantly impact profitability,

possibly due to high competition and weak value chain integration (Han et. al. 2012).

The lack of significant effects aligns with literature noting that gains from globalization often bypass small-scale African firms without supportive infrastructure (Tsai, 1995).

Table 2 B: Effects of Globalization on profitability of Agro-Allied firms

Variable	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
Constant	2.101	.149		14.100	.000
Trade Liberalization	.034	.516	.019	.066	.947 NS
Foreign Direct investment	.348	.229	.183	1.521	.131 NS
Global market trend	-.767	.506	-.395	-1.517	.132 NS
Technological Transfer	-.151	.384	-.089	-.392	.696 NS
Labour Mobility	.321	.241	.190	1.331	.186 NS
Foreign machine/tech. adoption	.182	.329	.104	.554	.580 NS
Hired foreign worker	-.475	.500	-.260	-.951	.344 NS
Bought new skills	.344	.479	.181	.719	.474 NS
Foreign partnership	.127	.358	.076	.356	.722 NS

Dependent Variable: Profitability

Source: Data analysis 2025, NS: Not significant, * means significant at 0.05**Effects of Globalization on Competitiveness**

The competitiveness model ($R^2 = 0.137$) shows no significant effects from

globalization variables (Table 4). Trade liberalization ($\beta = -0.399$, $p = 0.441$) and technological transfer ($\beta = 0.182$, $p = 0.637$) do

not improve competitiveness, likely due to low absorptive capacity and inadequate complementary inputs (Majeed, 2015). The results reflect challenges in leveraging globalization for competitive advantage in remote communities.

Table 2 C: Effects of Globalization on Competitiveness of Agro-Allied firms

Variable	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
Constant	2.020	.149		13.563	.000
Trade Liberalization	-.399	.516	-.218	-.773	.441 NS
Foreign Direct investment	-.057	.229	-.030	-.249	.803 NS
Global market trend	-.340	.505	-.175	-.674	.502 NS
Technological Transfer	.182	.384	.106	.473	.637 NS
Labour Mobility	.361	.241	.213	1.496	.137 NS
Foreign machine/tech. adoption	.336	.329	.192	1.021	.309 NS
Hired foreign worker	-.341	.500	-.186	-.683	.496 NS
Bought new skills	.253	.479	.133	.528	.598 NS
Foreign partnership	.040	.357	.024	.112	.911 NS

Dependent Variable: Competitiveness

Source: Data analysis 2025, NS: Not significant, * means significant at 0.05

Test of Hypothesis

H₀₁: Globalization does not positively impact agribusiness growth in remote communities.

To test this hypothesis, we need to examine the results of the linear regression analysis in Tables 2A, 2B, and 2C.

Based on the results, we reject the null hypothesis (H₀₁) that globalization does not positively impact agribusiness growth in remote communities. The findings suggest that globalization has a positive impact on the productivity of agro-allied firms in remote communities. However, the impact of globalization on profitability and competitiveness is not significant.

Conclusion

The study reveals that globalization exerts a selective influence on agro-allied firms in remote communities of Benue State. Trade liberalisation, awareness of global market trends, and the strategic hiring of foreign workers significantly boost firm productivity, indicating that openness to international trade and the infusion of external expertise can enhance operational efficiency. However, these positive effects do not translate into higher profitability or greater competitiveness, suggesting that productivity gains alone are insufficient to improve overall firm

performance in the absence of complementary assets such as market access, finance, and robust value-chain integration. The limited explanatory power of the regression models for profitability and competitiveness underscores the presence of structural impediments—namely inadequate infrastructure, weak institutional support, and low absorptive capacity—that inhibit firms from capitalising on global opportunities. Consequently, while the null hypothesis that globalization does not positively impact agribusiness growth is rejected with respect to productivity, it is retained for profitability and competitiveness. Globalization is a double-edged sword for remote agro-allied firms offering pathways to improved productivity but does not automatically engender broader economic benefits without supportive interventions.

Recommendation

The study recommends the strengthening of rural infrastructure (roads, electricity, digital connectivity) to lower

transaction costs and improve market access for agro-allied firms; provision of targeted financial incentives (low-interest credit, matching grants) and institutional support to facilitate adoption of foreign machinery and technology transfer. The study also recommends implementation of capacity-building programs to focus on entrepreneurship, market intelligence, and value-chain management to translate productivity gains into profitability and finally a design of inclusive trade policies that protect small-scale producers while encouraging their integration into global value chains and promoting equitable competition.

References

- Aker J.C, (2010). Information from markets near and far: mobile phones and agricultural markets in Niger. *American Economic Journal: Applied Economics* 23: 46-59.
- Cinar, O., Altuntas, S., & Alan, M. A., (2021). Technology transfer and its impact on innovation and firm performance: empirical evidence from Turkish export companies. *Kybernetes*, 50(7), 2179–2207
- FAO. (2020). The state of food security and nutrition in the world. Food and Agriculture Organization of the United Nations. ISBN978-92-5-132901-6 <https://openknowledge.fao.org/handle/20.500.14283/ca9692en>
- Han, J.; Liu, R.; Zhang, J. (2012): Globalization and wage inequality: Evidence from urban China, *Journal of International Economics*, 87, 288-297.
- Majeed, M. (2015): Distributional Consequences of Globalization: Is Organization of the Islamic Countries Different? *The International Trade Journal*, 29(3), 171-190.
- Milanovic, B. (2005): Can We Discern the Effect of Globalization on Income Distribution? Evidence from Household Surveys, *The World Bank Economic Review*, 19(1), 21-44
- Tsai, P. (1995): Foreign direct investment and income inequality: Further evidence, *World Development*, 23(3), 469-483
- Singh, A. and Dhumale, R. (2000): Globalization, Technology, and Income Inequality: A Critical Analysis, UNU WIDER Working Paper No. 210
- Wanlin Lu (2023) Growing prosperity: Agribusiness as the catalyst for rural economic growth. *International Journal of Agricultural Extension and Rural Development*. Vol. 11, Issue 3