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Youth Participation in Agribusiness and Associated Factors in Yamaltu-Deba Local Government Area of Gombe State, Nigeria

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ABSTRACT

The study examined the extent of youth participation in agribusiness and its associated factors in Yamaltu-Deba Local Government Area of Gombe State, Nigeria. The study adopted a cross-sectional survey design. A multistage sampling procedure was used to select 204 youths involved in agribusiness from 16 villages across three purposively selected wards. Data were collected using a structured questionnaire with a Cronbach's alpha reliability coefficient of 0.84. Descriptive statistics were used to determine the extent of participation, while ordered logistic regression was employed to examine the factors associated with participation categories. Participation was measured as the proportion of the identified agribusiness activities in which each respondent participated. The results showed that 39.2% of the respondents had low participation breadth, 23.5% had medium participation breadth, and 37.3% had high participation breadth. The mean participation score was 46.96% (SD = 21.57). The ordered logistic regression model was statistically significant (LR $\chi 2(10) = 155.31$, $p < .001$). Age, sex, education, household size, farm size, amount of credit accessed, training, annual income, and extension contact were significantly associated with participation category, whereas years of agribusiness experience was not statistically significant. The study concludes that youth participation in agribusiness varies considerably in breadth and is associated with a combination of socioeconomic and institutional characteristics. The study recommends improved youth-oriented access to credit, training, extension services, productive resources, and diversified agribusiness opportunities.

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INTRODUCTION

Agribusiness encompasses activities related to agricultural production, processing, marketing, distribution, input supply, transportation, and agricultural services. It provides opportunities for youths to generate income, create employment, promote entrepreneurship, and contribute to food security and rural development. However, youth participation varies according to socioeconomic characteristics, access to productive resources, and institutional support (Osabohien et al., 2021; Nigussie et al., 2024; FAO, 2025).

Studies in Nigeria have shown that youth participation in agribusiness is associated with factors such as age, education, gender, access to credit, farming experience, cooperative membership, and extension services (Nmeregini et al., 2020; Adeyanju et al., 2021; Lawan et al., 2023). Similarly, evidence from other African countries highlights the importance of finance, land, skills training, social networks, and institutional support in promoting youth

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participation (Boye et al., 2024; Nigussie et al., 2024).

In Yamaltu-Deba Local Government Area of Gombe State, Mohammed and Sani (2018) reported limited youth participation in rice production and identified inadequate credit, poor access to improved seeds, high input costs, and other resource-related challenges. However, their study focused on rice production and did not cover other agribusiness activities, such as livestock production, processing, marketing, input supply, transportation, and agricultural services. Consequently, limited evidence exists on the extent of youth participation across the broader agribusiness value chain in the area.

This study therefore examines the extent of youth participation in agribusiness and the socioeconomic and institutional factors associated with participation in Yamaltu-Deba Local Government Area of Gombe State, Nigeria. Participation is measured by the proportion of identified agribusiness activities undertaken by each respondent, providing a broader understanding of youth involvement and a basis for developing appropriate interventions to promote youth participation in agribusiness.

STATEMENT OF THE PROBLEM

Agribusiness provides opportunities for youth employment, income generation, entrepreneurship, food production, and rural development through activities including production, processing, marketing, input distribution, transportation, and agricultural services. However, the availability of these opportunities does not necessarily result in broad participation. Limited access to finance, land, improved inputs, technical knowledge, market information, infrastructure, extension, and other productive resources may constrain youth involvement (Adeyanju et al., 2021; Boye et al., 2024; Lawan et al., 2023; Mohammed & Sani, 2018; Nigussie et al., 2024).

The problem extends beyond whether youths participate to how broadly they participate across agribusiness activities. A youth involved in one activity may have different opportunities and support requirements from one involved in several activities across the value chain. Nevertheless, much of the existing Nigerian research has focused on particular commodities, programmes, or enterprises, including agricultural training, maize, poultry, rice, and aquaculture (Adeyanju et al., 2021; Lawan et al., 2023; Nmeregini et al., 2020; Nigussie et al., 2024).

In Yamaltu-Deba, previous research has concentrated mainly on rice production and therefore does not show the proportion of agribusiness activities undertaken by youths, their distribution across participation levels, or the socioeconomic and institutional factors associated with broader participation. This evidence gap may limit effective programme targeting and result in excessive emphasis on primary production while other opportunities such as processing, marketing, input supply, transportation, and equipment services receive insufficient attention. This study addresses the gap by examining the extent of youth participation in agribusiness and the factors associated with participation in Yamaltu-Deba Local Government Area. Specifically, it measures participation as the proportion of identified activities undertaken and examines its association with selected socioeconomic and institutional characteristics. The findings provide evidence relevant to improving youth access to credit, training, extension services, productive resources, and diversified agribusiness opportunities.

MATERIALS AND METHODS

The study was conducted in Yamaltu-Deba Local Government Area of Gombe State, Nigeria, where crop and livestock production, farm labour, marketing, processing, and related agribusiness activities provide livelihood opportunities. A cross-sectional survey design was adopted to collect data at one point in time and examine participation and its associated factors.

The study population comprised 417 youths involved in agribusiness and identified during a pre-field survey through agricultural associations and local structures in 16 selected villages. A multistage sampling procedure was used. In the first stage, three of the 11 wards in the

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study area (Kuri-Lano-Lambam, Kwadon-Liji-Kurba, and Hinna) were purposively selected based on their higher level of agribusiness activity. In the second stage, 16 villages were purposively selected from the respective wards: Lano, Lambam, Kuri, Dambu, Dahirma, and Dasa from Kuri-Lano-Lambam ward; Liji, Kwadon, Gidim, and Poli from Kwadon-Liji-Kurba ward; and Dadin Kowa, Hinna, Garin Sarki, Tunga, Yaranduwa, and Garin Abdullahi from Hinna ward. In the third stage, 204 youths were randomly selected from the identified population using proportional allocation. The sample size was determined using Yamane's (1967) formula at a 5% margin of error.

Data were collected in November and December 2024 using a structured questionnaire administered with the assistance of trained research assistants. The questionnaire covered socioeconomic characteristics, institutional support, available agribusiness activities, and respondents' participation in those activities. Face validation was conducted by three lecturers in the department of Agricultural Extension at Modibbo Adama University, Yola, and their observations were used to improve the instrument. The reliability coefficient was 0.84. The extent of participation was measured as the proportion of identified available agribusiness activities in which each respondent participated. Scores below 50% were classified as low, 50-69% as medium, and 70% or above as high, following Enugwu et al. (2022). The categories were coded 1, 2, and 3, respectively, for ordered logistic regression.

Descriptive statistics comprised frequencies, percentages, means, and standard deviations. Ordered logistic regression was used to examine the association between participation category and age, sex, educational attainment, household size, farm size (measured in hectares), agribusiness experience, amount of credit received, training, annual income, and extension contact. Results were presented using odds ratios, standard errors, z-values, and probability values, with significance assessed at the 1%, 5%, and 10% levels. All analyses were performed using Stata version 14. Given the cross-sectional design, the findings were interpreted as associations rather than causal effects.

RESULTS AND DISCUSSION

Socioeconomic Characteristics of Respondents

The socioeconomic characteristics of the 204 respondents are presented in Table 1. Males constituted 59.3% of the respondents, compared with 40.7% females, indicating greater male participation in agribusiness. This may reflect gender differences in access to land, capital and productive opportunities. Nevertheless, the substantial female participation demonstrates that women also play an important role in agribusiness. This agrees with Richard *et al.* (2020), who reported active participation of both genders in agribusiness in Malawi.

The mean age of respondents was 33 years (SD = 7.94), with the largest proportion aged 33-34 years (52.5%), followed by 31-32 years (30.4%). The concentration in the upper youth-age categories may indicate that participation increases with accumulated experience and resources. Ibrahim *et al.* (2019) similarly reported a relatively high mean age among youth agricultural entrepreneurs in Nasarawa State. Most respondents were married (69.1%), while 18.6% were single and 12.3% divorced. The dominance of married respondents may be associated with the need for stable livelihoods and household income. Thomas and Eforuoku (2022) reported a similar finding among youth entrepreneurs in Ondo State, although it differs from Owigho *et al.* (2023), who found that most youths participating in agriculture in Delta State were single.

Household size averaged six persons, with 39.2% and 35.3% having 5-6 and 7-8 members, respectively. Large households may provide family labour for agribusiness but also increase financial responsibilities. This agrees with Oluwafemi and Omonona (2022), who reported relatively large household sizes among youth farmers in Oyo State. Half of the respondents (50.0%) had tertiary education, followed by primary (22.0%), secondary (16.2%) and Qur'anic education (11.8%). Higher educational attainment may facilitate access to information, technology, financial services and

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improved management practices. Similar observations were reported by Owigho *et al.* (2023) and Alabi and Ogunmokun (2023).

Table 1. Socioeconomic Characteristics of Respondents

Variables	Category	Frequency	Percentage (%)
Sex	Male	121	59.3
	Female	83	40.7
Age	25 - 26	8	3.9
	27 - 28	11	5.4
	29 - 30	16	7.8
	31 - 32	62	30.4
	33 - 34	107	52.5
Marital status	Single	38	18.6
	Married	141	69.1
	Divorced	25	12.3
Household size	1 - 2	28	13.7
	3 - 4	14	6.9
	5 - 6	80	39.2
	7 - 8	72	35.3
	9 - 10	10	4.9
Education	Qur'anic	24	11.8
	Primary	45	22.0
	Secondary	33	16.2
	Tertiary	102	50.0
Total		**204**	**100.0**

Source: Field survey, 2024

Agribusiness Experience and Institutional Support

Table 2 shows that 35.8% of respondents had 1-5 years of experience, while 36.8% had 6-10 years, indicating that 72.6% had 1-10 years of experience. The mean experience was 9.55 years, suggesting moderate exposure to agribusiness. However, limited experience among some respondents could constrain enterprise management and decision-making, as noted by Alabi and Ogunmokun (2023).

Access to institutional support was generally limited. Only 27.5% had contact with extension agents, 30.4% had access to credit and 37.7% had received agribusiness training. These limitations may restrict access to technical information, productive resources, improved technologies and business management skills. The findings agree with Bello *et al.* (2021) and Owigho *et al.* (2023), who reported inadequate access to credit and extension services among youths involved in agribusiness. Among those who received training, government agencies accounted for 50.6%, NGOs 29.9% and the Central Bank of Nigeria 19.5%, demonstrating the important role of public and development institutions in youth capacity building.

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Table 2. Agribusiness Experience and Institutional Support

Variables	Category	Frequency	Percentage (%)
Experience	1 - 5 years	73	35.8
	6 - 10 years	75	36.8
	11 - 15 years	26	12.7
	16 - 20 years	20	9.8
	21 - 25 years	10	4.9
Extension contact	Yes	56	27.5
	No	148	72.5
Credit access	Yes	62	30.4
	No	142	69.6
Training access	Yes	77	37.7
	No	127	62.3
Total		**204**	**100.0**

Source: Field survey, 2024

Source of Training

Among the 77 respondents who received training, government agencies were the major providers (50.6%), followed by NGOs (29.9%) and the Central Bank of Nigeria (19.5%). The predominance of government-supported training indicates the importance of public institutions in youth agribusiness capacity development, while NGO participation demonstrates the complementary contribution of non-governmental organizations. Anifowose *et al.* (2023) similarly highlighted the contribution of government youth empowerment programmes to agribusiness development.

Table 3. Sources of Training

Training agency	Frequency	Percentage (%)
Government	39	50.6
NGOs	23	29.9
Central Bank of Nigeria	15	19.5
Total	**77**	**100.0**

Source: Field survey, 2024.

Agribusiness Activities Available to Respondents

Table 4 shows that livestock business (93.6%) and crop production (90.7%) were the most widely available agribusiness activities. These were followed by farm labour (71.6%), agro-marketing (65.7%) and agro-processing (64.2%). Less available activities included middlemen services (29.9%), input dealing (18.6%), agro-allied industries (16.2%), tractor/implement hiring (13.7%) and agro-consulting (5.4%). The dominance of crop and livestock activities reflects the importance of primary agricultural production in the study area and agrees with Maigari *et al.* (2023), who reported substantial youth involvement in livestock and crop production in Bauchi State. The limited availability of specialised activities may reflect inadequate infrastructure, capital and technical capacity.

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Table 4. Agribusiness Activities Available in the Study Area

Agribusiness	Frequency*	Percentage (%)	Rank
Livestock business	191	93.6	1st
Crop production	185	90.7	2nd
Farm labour	146	71.6	3rd
Agro-marketing	134	65.7	4th
Agro-processing	131	64.2	5th
Middlemen	61	29.9	6th
Input dealers	38	18.6	7th
Agro-allied industry	33	16.2	8th
Tractor/implement hiring	28	13.7	9th
Agro-consulting	11	5.4	10th

Source: Field survey, 2024, NB: *=multiple response

Agribusiness Activities Engaged in by Respondents

Actual participation was concentrated in crop production (83.8%) and livestock business (77.9%), followed by farm labour (49.9%), agro-marketing (37.3%), agro-processing (30.9%) and middlemen activities (26.5%). The concentration in primary production suggests that youths have greater involvement in activities requiring relatively fewer specialised resources, while participation in value addition and marketing is comparatively limited. Constraints relating to capital, infrastructure, equipment and market access may partly explain this pattern. The finding is consistent with Olubunmi *et al.* (2024), who reported substantial youth involvement in agricultural production and marketing.

Table 5. Agribusiness Activities Engaged in by Respondents

Agribusiness	Frequency*	Percentage (%)	Rank
Crop production	171	83.8	1st
Livestock business	159	77.9	2nd
Farm labour	100	49.9	3rd
Agro-marketing	76	37.3	4th
Agro-processing	63	30.9	5th
Middlemen	54	26.5	6th

Source: Field survey, 2024, NB: *=multiple response

Level of Youth Participation in Agribusiness

Participation was classified as low (<50%), medium (50-69%) and high (≥70%) following Enugwu *et al.* (2022). As shown in Table 6, 39.2% of respondents had low participation, 23.5% had medium participation and 37.3% had high participation. The mean participation level was 46.96% (SD = 21.57), with a range of 10-100%. Thus, the average respondent participated in less than half of the available agribusiness activities. The finding indicates that although a sizeable proportion of youths were highly involved, overall participation remained relatively low. This contrasts with Alabi *et al.* (2024) and Thomas and Eforuoku (2022), who reported high youth participation in selected agricultural value chains.

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Table 6. Level of Youth Participation in Agribusiness

Participation level	Frequency	Percentage (%)
Low	80	39.2
Medium	48	23.5
High	76	37.3
Total	**204**	**100.0**

Mean = 46.96%; SD = 21.57; Minimum = 10%; Maximum = 100%.
Source: Field survey, 2024.

Factors Influencing Youth Participation in Agribusiness

The ordered logistic regression model was statistically significant (LR χ^2 (10) = 155.31, p < .001), with a pseudo-R^2 of 0.3936, indicating that the explanatory variables jointly accounted for considerable variation in participation. The mean VIF of 2.69 indicates no serious multicollinearity. Age had a significant negative association with participation (OR = 0.841, p < .01), indicating lower odds of higher participation as age increased. In contrast, male respondents had substantially higher odds of higher participation than females (OR = 11.651, p < .05). Education positively influenced participation (OR = 1.142, p < .05), suggesting that additional schooling was associated with greater participation. Household size also had a positive and significant effect (OR = 2.616, p < .01), possibly because larger households provide additional labour for agribusiness.

Farm size (measured in hectares) had a negative effect (OR = 0.543, p < .01), indicating lower odds of higher participation among respondents with larger farm sizes. This differs from Oluwafemi and Omonona (2022), who reported a positive relationship between farm size and youth agricultural participation.

Access to credit (OR = 1.015, p < .01), training (OR = 29.798, p < .01), annual income (OR = 1.505, p < .05) and extension contact (OR = 2.161, p < .10) positively influenced participation. Training had the largest odds ratio, highlighting the importance of capacity building in promoting broader participation. Credit and income may increase youths' ability to acquire inputs and expand their enterprises, while extension services provide technical and managerial support. These findings are consistent with Bello *et al.* (2021), who identified credit and productive resources as important determinants of youth participation in agribusiness. Agribusiness experience was not statistically significant (OR = 1.021, p > .10), suggesting that years of experience alone did not distinguish respondents across participation categories after controlling for the other factors.

Table 7. Ordered Logistic Regression Estimates of Factors Associated with Youth Participation

Variable	Odds ratio	SE	z-value	Significance
Age	0.841	0.040	-3.60	1%
Sex	11.651	10.759	2.66	5%
Education	1.142	0.071	2.14	5%
Household size	2.616	0.445	5.65	1%
Farm size (hectares)	0.543	0.105	-3.15	1%
Agribusiness experience	1.021	0.039	0.56	NS
Credit received	1.015	0.003	5.22	1%
Training	29.798	18.041	5.60	1%

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Variable	Odds ratio	SE	z-value	Significance
Annual income	1.505	0.280	2.20	5%
Extension contacts	2.161	0.858	1.94	10%

Model statistics: LR χ^2 (10) = 155.31; $p < .001$; pseudo-R^2 = .3936; mean VIF = 2.69; N = 204.

CONCLUSION AND RECOMMENDATIONS

The study examined youth participation in agribusiness and the socioeconomic and institutional factors associated with participation in Yamaltu-Deba Local Government Area of Gombe State. Participation was concentrated mainly in crop production and livestock business, while the average participation score of 46.96% indicated limited involvement across the range of available agribusiness activities. Age, sex, education, household size, farm size, credit received, training, annual income, and extension contact were significantly associated with participation, whereas agribusiness experience was not significant. The findings demonstrate that broader youth participation is associated with both socioeconomic characteristics and access to institutional support. The following recommendations were made:

1. The Bank of Agriculture (BOA), National Agricultural Development Fund (NADF), and other financial institutions should provide affordable credit, start-up inputs, and practical business training to help youths expand into diverse agribusiness activities.
2. The Federal Ministry of Agriculture and Food Security and relevant NGOs should strengthen value-chain linkages by connecting youths with input suppliers, processors, aggregators, transporters, buyers, and markets through extension visits, practical training, and periodic buyer-seller engagements.

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