Analysis of the Demographic Variables of Youths Involved in the Different Stages of Cassava Value Chain Development Programme in Anambra State, Nigeria

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Article Info

Abstract

The study assessed the demographic variables and their influence on youths involvement in Cassava Value Chain Development Programme in Anambra State, Nigeria. A Taro Yamane sample size technique was used to calculate 387 respondents. Data was analysed using descriptive and probit model from SPSS version 25. The study determined the demographic variables and examined the variables that influenced their involvement. Findings show that a majority (50.1%) were female, the mean age was approximately 35 years, majority (74.2%) were single, greater proportion (46.3%) had formal education, mean household size was 4 persons, mean extension contact per annum was approximately 5 times, farming experience was approximately 8 years, mean farm size was 3.1 hectares, mean income was ₦251,308.07, and majority (51.7%) had access to credit. Variables that were significant at the supply stage were sex (3.109), age (-0.056), educational level (-0.218), household size (-0.237), and access to credit (1.890), at the 1% level of probability. Marital status (-0.559), farming experience (-0.060), farm size (0.235), and annual income (0.000) were at 5%. At the production stage, sex (0.537), household size (-0.053), and farming experience (0.071) were at 5%. At the harvest stage, sex (2.438), age (0.052), marital status (1.727), household size (0.122), access to credit (-0.852), and annual income (0.000) were at 1%. Farming experience (0.067) and farm size (-0.189) were at 5%. The study concluded that the programme's aims of engaging youths were met. The study recommended that more youths should join the programme to reduce their dependence on white collar jobs.

1. Introduction

Youth involvement in agricultural programmes is important in that it replaces the elderly population in agriculture, reduces the poor image of agriculture, reduces rural-urban migration which results in urban overcrowding, and reduces youth unemployment and its associated social problems (Twumasi *et al.*, 2019) [45].

The limited availability of jobs contributes to dissatisfaction and restiveness among the youth (Ezemenaka, 2021) [19]. There is no quick way to generate employment opportunities for youths in Nigeria and create an environment for innovation of spurring

economic growth except through targeted policies and investments such as investing in job hubs like agricultural programmes (Tejumola, 2021) [44]. Some of the programmes are the Agricultural Transformation Agenda (ATA), Anchor Borrowers' Programme (ABP), Youth Agricultural Entrepreneurship Programme (YAGEP), and the International Fund for Agricultural Development (IFAD) assisted Value Chain Development Programme (VCDP), among others.

It is important to involve youths in the planning, design, and implementation of the Value Chain Development Programme to ensure that their unique needs and perspectives are considered, as this can empower them to start their businesses, generate income, and reduce unemployment rates.

Empirical studies specifically focused on the demographic factors of the youths involved in the different stages of the cassava value chain in Anambra State are lacking. The closest to the study was conducted by Adeoye and Olorunfemi (2018) [2] focusing on agribusiness and rural entrepreneurship among Nigerian youth as an assessment of the value chain development programme while Ibrahim and Mustapha (2020) [23] focused on promoting youth agripreneurship for sustainable agriculture in Nigeria with a major concern on value chain development. The lack of evidence on these important aspects limits the scope and calls for a discussion on the improvement of young people through their involvement in the cassava value chain. It is against this backdrop that this study intends to address the following specific objectives:

a) To determine the demographic variables of youths involved in the cassava value chain development programme in the study area; and

b) To examine the variables that influence the youth's involvement in the cassava value chain activities of the VCDP in the study area.

2 Review of Related Empirical Studies
2.1 Determinants of the Demographic Variables
The empirical review highlights various studies on the demographic variables of cassava value chain. Akaninyene *et al*. (2023) [5] revealed that rural women were more active in the cassava value chain, particularly, in the processing sector (34.4%). Furthermore, Okafor *et al*. (2023) [35] revealed that male actors were more in the sampled population in their study area. Bamidele *et al*. (2019) reported that more men (12%) were involved in IFAD VCDP than women (1.52%). Adebisi *et al*. (2015) [1] revealed that when young farmers are involved in cassava harvesting, they gain skills, confidence, and decision-making abilities which can lead to broader societal benefits. Ibrahim and Mustapha (2020) [23] noted that most of the respondents were single. Okeke *et al*. (2022) [36] disclosed that a majority (57.52%) of the youths engaged in their study area were married. Nwalieji *et al*. (2018) [34] revealed that a majority (51.7%) of the respondents were married. Ashraf and Qasim (2019) [9] revealed that higher education often equips individuals with knowledge and skills. Funmilola *et al*. (2018) [21], revealed that education plays an important role in agricultural growth and improves the standard of living of respondents. The level of education could determine the level of opportunities available to enhance food security and reduce the level of poverty. Education opens the mind of the farmer to knowledge. The high education status of farmers will enable them to acquire

knowledge and skills, adopt new inputs such as high-yielding varieties, chemical fertilizers, and pesticides, and also embrace extension services. VCDP, therefore, is a programme that is relevant to the targeted rural farmers (Funmilola *et al*. 2018) [21].

Additionally, Ibrahim and Mustapha (2020) [23] revealed that youths have a low household size because only a few of them are married. Funmilola *et al*. (2018) [21] revealed that there was over 95 percent of improvements recorded in extension services in Anambra State. Uchemba *et al*. (2021) [46] found that the more experienced the farmers are the more they are willing to try new things for a better result. Okeke *et al*. (2022) [36], revealed that the mean farm size was found to be 2.29 hectares. Akaninyene *et al*. (2022) [6] and Akaninyene *et al*. (2023) [5] revealed that the respondents were still farming on fragmented/rented farmland to increase their cassava production resulting in most of the respondents cultivating farmland of less than 1ha. Okafor *et al*. (2023) [35] revealed that only 9.09% of respondents earned above ₦80,000 per annum. Chikezie *et al*. (2012) [14] revealed that access to credit facilities by youths is a negative influence on their involvement in agricultural activities.

2.2 Demographic variables that influenced youth's involvement
The empirical review highlights various studies on the demographic variables that influenced youths involvement in different stages of cassava value chain. Masamha *et al*. (2019) [30] revealed that women's involvement in the supply chain can enhance their access to critical resources such as land, extension services, and markets. Manganyi *et al*. (2023) [28] revealed that older farmers might find it challenging to participate in the activities related to cassava production fully. Samuel Darko-Koomson *et al*. (2020) [17] revealed that individuals who are married, may allocate more time to household and family duties, which could reduce their availability for cassava-related activities. They went further to disclose that married women may face expectations related to caregiving, which could affect their ability to participate in the value chain actively. Also, some married individuals may prioritize other income-generating activities over cassava production, leading to reduced involvement. Ibrahim (2022) [22] revealed that some married individuals may prioritize other income-generating activities over cassava production, leading to reduced involvement in cassava value chain activities. Furthermore, Selwyn (2022) [40] revealed that as education increases, some individuals may seek non-agricultural engagement due to perceived better prospects elsewhere. Tham-Agyekum *et al*. (2024) [43] revealed that larger households may face challenges related to labour allocation, resource availability, and decision-making. Mpiira *et al*. (2024) [31] revealed that while larger households have more labour, they may also face resource constraints. Decision-making becomes more complex in larger households. Martin *et al*. (2024) [29] revealed that the size of farmland directly influences the scale of cassava production and the number of people involved. They went further to reveal that larger farmlands can accommodate more youth engagement. Bello *et al*. (2021) [12] revealed that increased youth involvement can boost local economies by generating

income, creating jobs, and stimulating demand for cassava products. Also, Smith *et al*. (2018) [42] revealed that higher income enables youth farmers to engage more actively in the cassava supply chain. Blessing *et al*. (2017) [13] revealed that when young female cassava farmers actively engage in the production chain, it not only benefits them individually but also contributes to household well-being and gender equality within the cassava value. Nnahiwe *et al*. (2023) [33] revealed that as household size increases, the available labour also grows. However, this does not necessarily translate to an increase in participation in cassava production. Larger households may have competing demands for labour, such as tending to other crops, household chores, or off-farm activities. Consequently, young farmers might allocate less time and effort to cassava production due to these competing responsibilities. Quemada (2022) [39] reveal that familiarity with cassava cultivation allows farmers to optimize their production methods. They learn how to select suitable varieties, manage soil health, and apply appropriate fertilizers. Consequently, their yield per unit area increases, positively impacting the production chain.

Additionally, Leon-Himmelstine *et al*. (2021) [27] revealed that active involvement in the harvest chain allows young female farmers to generate revenue, contributing to their financial well-being and potentially reducing household poverty. Blessing *et al*. (2017) [13] revealed that increasing the involvement of young female cassava farmers in the harvest chain will have positive implications for gender equality, resource access, revenue generation, and overall community development. Adebisi *et al*. (2017) [1] revealed that when young farmers are involved in cassava harvesting, they gain skills, confidence, and decision-making abilities which can lead to broader societal benefits. Crevello (2022) [27] revealed that when young people actively participate in cassava harvesting, it can lead to increased productivity. Their energy, enthusiasm, and adaptability may contribute to more efficient harvesting practices. Bakker *et al*. (2021) [10] revealed that increased youth participation can positively impact household incomes as more young people engage in cassava harvesting. Yusuf (2021) [8] revealed that married individuals have family obligations that can motivate them to work harder and contribute more actively to cassava harvesting. Mylliemngap (2021) [32] revealed that larger households may have more labour available, which could enhance participation in labour-intensive activities like harvesting. Furthermore, Lamsal *et al*. (2015) [26] revealed that with more years of experience, young farmers may adopt improved harvesting practices. These practices can enhance cassava yields, leading to higher productivity for both individual farmers and the overall value chain. Oruma *et al*. (2021) [38] revealed that harvesting often involves manual labour, which can be physically demanding and time-consuming. Therefore, young farmers might prioritize other cassava value chains over harvesting due to the labour-intensive nature of this task. Oruma *et al*. (2021) [38] reveal that if youth focus more on accessing credit and less on on-farm activities, their direct involvement in cassava production (planting, and harvesting, among others) may

decrease. Also, Köhn *et al*. (2014) [25] revealed that higher income for young cassava farmers can empower them economically. As their income grows, they are more likely to invest in their farming activities, propose better tools, and improve their productivity which in turn, might encourage greater participation in the harvesting chain. With more income, youths can expand their cassava farms this will enable them to meet market demands, access large markets, and contribute to the value chain. Simon and Hephzibah (2017) [41] revealed that youths can expand their cassava farms with more income. They went further to reveal that this will enable them to meet market demands, access large markets, and contribute to the value chain.

3 Research Methodology
3.1 Study Area
The study was carried out in Anambra State, Nigeria. The State is bounded by Delta State to the West, Imo State to the South, Enugu State to the East, and Kogi State to the North. Anambra State is made up of 21 Local Government Areas. It is located between latitudes $5^{\circ} 32^{1}$ and $6^{\circ} 43^{1}$N and longitudes $6^{\circ} 43^{1}$ and $7^{\circ} 22^{1}$E of the area within the Greenwich meridian (Chukwuma *et al*. 2016) [15].

Anambra State is one of the nine States participating in the Value Chain Development Programme (VCDP). The VCDP pilot project in Anambra State covered five LGA's and their environs, while the additional financing (AF) added 3 new LGA's to bring the total number of LGA's covered by the VCDP to 8 (FGN/VCDP-AF, 2024).

3.2 Technique Procedure
The population of the study comprised all the 11,812 youths involved in the different segments of the cassava value chain of the IFAD/VCDP in Anambra State, Nigeria, since the Additional Finance Phase I.

The study utilised a Taro Yamane sample size determination adapted from Okeke *et al*. (2022) [36] to calculate the sample size for the study. The formula is defined as:

$$n = \frac{N}{1 + N(0.05)^2}$$

Where:
n = sample size
N = Total population of cassava farmers
e = error term at 0.05 level of probability
1 = constant
However, the sample size was calculated as:

$$n = \frac{11812}{1 + 11812 * (0.0025)}$$

$\approx$ 387 youths
This study applied a multi-stage sampling technique encompassing purposive and random selection methods.
In the first stage, the eight LGAs (Orumba North, Orumba South, Awka North, Anambra West, Anambra East, Ayamelum, Ogbaru, and Ihiala) of the programme were

purposively selected to give equal opportunity to all the cassava value chain actors participating in the programme. During the second stage, the stratum formula used to allocate sample strata adapted from Ekwere and Edem (2014) [18] was used to select the appropriate sample size from each LGA purposively. The formula is stated as:

$$n_{th} = \frac{n_i * n}{N}$$

Where:
n_{th} = LGA strata
n_i = LGA-specific population
n = study sample size
N = population sample size
The stratum formula was applied to populate Table 1 as:

Table 1: Sample representation of cassava value chain actors in the 8 VCDP LGA's

	LGA	Producers	Marketers	Processors	Total
Population	Orumba North	630	472	760	1863
	Orumba South	872	283	456	1612
	Awka North	735	402	646	1783
	Anambra West	629	307	494	1430
	Anambra East	1030	236	380	1646
	Ayamelum	161	118	190	469
	Ogbaru	720	331	532	1583
	Ihiala	870	213	342	1425
	Total	**5647**	**2362**	**3802**	**11812**
Stratum	Orumba North	21	15	25	61
	Orumba South	29	9	15	53
	Awka North	24	13	21	58
	Anambra West	21	10	16	47
	Anambra East	34	8	12	54
	Ayamelum	5	4	6	15
	Ogbaru	24	11	17	52
	Ihiala	29	7	11	47
	Grand total	**387**			

Source: Researcher's computation

In the third stage, all the communities participating in the VCDP intervention were randomly selected from where only youths (18 – 35 years as specified in the programme) involved in the cassava value chain were randomly selected according to the stratum values in Table 1. This brought the sample size to three hundred and eighty-seven value chain participants.

3.3 Methods of data collection
The data for the study was collected from primary sources using of a validated structured interview schedule. The interview schedule was organized into sections corresponding to the objectives of the study. The data collection instrument underwent validation by three lecturers in the Department of Agricultural Economics and Extension of Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. Four enumerators were properly trained to aid in the data collection.
To evaluate the reliability of the research instrument, a test-retest method was used. Forty cassava youth farmers received copies of the questionnaire and their responses were analyzed using Cronbach's Alpha test to assess the internal consistency at a 5% alpha level of significance. From Table 3.2 and Table 2, it was revealed that the instruments were reliable.

Table 2: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.806	0.817	20

Source: Field Survey Data, 2025

Table 3: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.811	0.823	20

Source: Field Survey Data, 2025

3.4 Model specification
probit regression for objective two is specified as:
$Y^* = f (X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, ...+ e)$
Where,
Y_i^* = level of involvement= 1 high involvement (2.5-4.0) and 0= Low involvement (1 - 2.49)
e = error term
X_1 = Age of respondents (years)
X_2 = Sex of respondents (dummy-male=1, female=0)
X_3 = Level of education (years)
X_4 = Marital status (dummy-0 = single, 1 = married)
X_5 = Cassava farming experience (years)
X_6 = Farm size (in hectares)
X_7 = Household size (number of persons)
X_8 = Access to credit (yes or no)
X_9 = Annual income (₦)

4 Results and Discussion
4.1 Demographic variables of the respondents
4.1.2 Sex of the respondents

Table 2 shows that the majority (50.1%) of the respondents were female while the remaining 49.9% were male. This indicates that the study was dominated by female actors. This study concurs with the study of Akaninyene et al. (2023) [5] that rural women were more active in the cassava value chain, particularly, in the processing sector (34.4%). Furthermore, this study disagrees with the study of Okafor et al. (2023) [35] that male actors were more in the sampled population in their study area.

4.1.3 Age of the respondents
Table 2 reveals that a greater proportion (41.1%) of respondents fell within the age bracket of 28-37 years, 37.0% fell within the age bracket of 38 years and above, and the remaining 22.0% fell within the age bracket of 18-27 years. On average, the value chain actors' age was approximately 35 years. This means that most of the respondents are at their productive age, enabling them to be actively involved in the cassava value chain. These findings are in line with the study of Adebisi et al. (2015) [1] that young farmers are involved more in cassava harvesting.

4.1.4 Marital status of the respondents
The study discloses that the majority (74.2%) of the respondents were single, and the remaining 25.8% were married (Table 2). This result indicates that the respondents in the study area were dominated by single farmers. This study agrees with the study of Ibrahim and Mustapha (2020) [23] who noted that a majority (88.5%) of the respondents were single.

4.1.5 Respondents level of education
Table 2 shows that a greater proportion (46.3%) of the respondents had secondary school education, 26.4% had tertiary school education, 16.8% had primary school education, and 10.6% had no formal education. The finding is in line with the findings of Funmilola et al. (2018) [21], that most (49.4%) of the respondents have completed secondary school education. Also, Ashraf and Qasim (2019) [9] revealed that higher education often equips individuals with knowledge and skills.

4.1.6 Household size of the respondents
Entries in Table 2 reveal that a greater proportion (38.0%) of the respondents had a household size of 6 persons and above, 33.1% had a household size of 3-5 persons, and finally, 28.9% had a household size of ≤ 3 persons. The mean household size was 4 persons, which is a result of their singlehood, making them not have enough household size and depend on hired labour as their family labour is not enough. This agrees with the study of Ibrahim and Mustapha (2020) [23] that youths have a low household size.

4.1.7 Respondent's number of extension contact
Findings in Table 2 show that a greater proportion (41.3%) of the respondents had between 5-8 times of contact per annum with extension agents, 40.3% of the respondents had between 1-4 times of contact with extension agents, 9.6% had between 9 times and above contact with extension agents, while 8.8% had no contact with extension agents per annum. The mean contact with extension agents per annum was approximately 5 times, which showed that the respondent's contact with extension agents was relatively sufficient. This aligns with the findings of Funmilola et al. (2018) [21] revealed that there was over 95 percent of improvements recorded in extension services in Anambra State.

4.1.8 Respondents' farming experience
Results in Table 2 reveal that a greater proportion (42.1%) of the respondents had 9 or above years of farming experience, 35.1% had farming experience between 5-8 years, while 22.7% of respondents in the study area had between 1-4 years of farming experience. The mean farming experience was 8.4 years. This reveals that the respondents had adequate farming experience, which is one of the important factors in agricultural engagement. This result is in line with earlier findings of Uchemba et al. (2021) [46] that the more experienced the farmers are the more they are willing to try new things for a better result.

4.1.9 Farm size of the respondents
Information in Table 2 indicates that the majority (63.8%) of the respondents had a farm size of 3 hectares and above, 19.1% had a farm size between 1-3 hectares, while 17.1% had a farm size of less than 1 hectare. The mean farm size was 3.1 hectares. The respondents have sufficient land, which is an advantage in cassava production. This study contradicts the findings of Akaninyene et al. (2022) [6] and Akaninyene et al. (2023) [5] that the respondents were still farming on fragmented/rented farmland to increase their cassava production resulting in most of the respondents cultivating farmland of less than 1ha.

4.1.10 Off-Farm income of the respondents
Entries in Table 2 states that the majority (70.0%) of the respondents had an income between ₦150,000.00 and above, 11.1% of respondents had a multiple response between ₦50,000.00 - ₦149,999.00, while 7.8% recorded between ₦1,000.00 - ₦49,999.00. The mean income was ₦251,308.07. This implies that the respondents earned enough off-farm income. The study disagrees with the study of Okafor et al. (2023) [35] who reveal that only 9.09% of respondents earned above ₦80,000 per annum.

4.1.11 Access to credit
The study discloses that the majority (51.7%) of the respondents had access to credit while 48.3% had no access to credit (Table 2). This implies that respondents in the study area had sufficient access to credit which enabled them to source funding for their cassava production. The findings disagree with Chikezie et al. (2012) [14] that access to credit facilities by youths is a negative influence on their involvement in agricultural activities.

Table 2: Respondents' demographic variables (n=387)

Variables	Frequency	Percentage	Mean
Sex			
Female	194	50.1	
Male	193	49.9	
Age			
18-27 Years	85	22.0	
28-37 Years	159	41.1	34.9 Years
38 Years and above	143	37.0	
Marital Status			
Single	287	74.2	
Married	100	25.8	
Level of Education			
No formal education	41	10.6	
Primary school education	65	16.8	
Secondary school education	179	46.3	
Tertiary school education	102	26.4	
Household Size			
$\leq$ 3 Persons	112	28.9	
4-6 Persons	128	33.1	4 Persons
> 6	147	38.0	
Farming Experience			
1-4 Years	88	22.7	
5-8 Years	136	35.1	8.4 Years
9 Years and above	163	42.1	
Farm Size (Ha)			
< 1	66	17.1	
1-3	74	19.1	
> 3	247	63.8	3.1 Ha
Off-Farm Income (₦)			
1,000-49,999	30	7.8	
50,000-99,999	43	11.1	
100,000-149,999	43	11.1	
150,000 and above	271	70.0	251,308.07
Access To Credit			
No	200	51.7	
Yes	187	48.3	
Extension Visit			
0	34	8.8	
1-4	156	40.3	
5-8	160	41.3	5 Times
9 and above	37	9.6	

Source: Field Survey Data, 2025

4.2 Demographic Variables that Influence the Youth's Involvement in Different Stages of Cassava Value Chain
4.2.1 Supply Chain

Table 3 shows that the omnibus test was significant (value, p $\leq$ 0.01), meaning that the model was fit for the analysis. Specifically, results for the supply chain revealed that sex (3.109), age (-0.056), educational level (-0.218), household size (-0.237), and access to credit (1.890) were all significant at 1% level of probability while marital status (-0.559), farming experience (-0.060), farm size (0.235), and annual income (0.000) were all significant at 5% level of probability. An increase in male respondents will increase youth involvement in the cassava value chain activity's supply chain by (B=22.391). Improved access to resources can empower men economically and contribute to poverty alleviation within households, which is part of the mission of the programme. These findings disagree with Masamha *et al*. (2019) [30] that women's involvement in the supply chain can enhance their access to critical resources such as land, extension services, and markets.

A unit increase in age will reduce youth involvement in the supply chain by (B=0.945). As individuals age, physical strength and endurance may decline. This corroborates Manganyi *et al*. (2023) [28] that older farmers might find it challenging to participate in the activities related to cassava production fully.

Marital status is negative, indicating that single youths are involved in the cassava value chain activity's supply chain by (B=0.572). Marriage often brings additional responsibilities. These findings agree with Samuel Darko-Koomson *et al*. (2020) [17] that individuals who are married, may allocate more time to household and family duties, which could reduce their availability for cassava-related activities. Also, some married individuals may prioritize other income-generating activities over cassava production, leading to reduced involvement. This corroborates Ibrahim (2022) [22] that some married individuals may prioritize other income-generating activities over cassava production, leading to reduced involvement in cassava value chain activities.

The educational level of the respondents is negative indicating that a unit increase in the education of the respondents will reduce their involvement in the supply chain of the cassava value chain activities by (B=0.804). Higher education may require time commitment which may reduce

the time available for agriculture related activities. These findings agree with Selwyn (2022) [40] that as education increases, some individuals may seek non-agricultural engagement due to perceived better prospects.

Household size is negative. This indicates that a unit increase in the household size of the respondents will reduce their involvement in the cassava value chain activity's supply chain by (B=0.789). Household size can significantly influence how individuals engage in agriculture-related activities. This finding agrees with Tham-Agyekum *et al.* (2024) [43] that larger households may face challenges related to labour allocation, resource availability, and decision-making. The findings also are in line with Mpiira *et al.* (2024) [31] that while larger households have more labour, they may also face resource constraints. Decision-making becomes more complex in larger households.

Farming experience is negative. This indicates that a unit increase in the number of years the farmers spent in cassava cultivation will reduce their involvement in the cassava value chain activity's supply chain by (B=0.942). This is as a result of cassava farmers maintaining their indigenous practices in the supply chain and would not want to be involved in anything else. From the findings, it can be deduced that the more experienced farmers are, the more they are unwilling to participate in the intervention programme's activities of the supply chain. These findings contradict Uchemba *et al.* (2021) [46] that the more experienced the farmers are the more they are willing to try new things for a better result.

Farm size is positive. This indicates that a unit increase in the size of the farmland will increase the number of youths involved in the cassava value chain activity's supply chain by (B=1.265). Hence, if the youths in cassava farming can access more land for cassava cultivation, they will show more interest in the intervention programme. These findings deduce that larger farmlands require more labour, creating employment opportunities for youths. The findings agree with Martin *et al.* (2024) [29] that the size of farmland directly influences the scale of cassava production and the number of people involved. They went further to reveal that larger farmlands can accommodate more youth engagement.

Access to credit as a factor that influences youths' involvement in the programme is positive. This indicates that an increase in access to credit facilities will increase the youths' involvement in the supply chain of the cassava value chain activities by (B=6.617). The implication is that there was sufficient funding for the youth in the cassava value chain to participate more in the supply chain. Youth involvement strengthens the cassava supply chain. From the findings, it is deduced that their active engagement contributes to sustainable cassava production. This finding aligns with Bello *et al.* (2021) [12] that increased youth involvement can boost local economies by generating income, creating jobs, and stimulating demand for cassava products.

Finally, the annual income was positive indicating that a unit increase in their annual income will increase the youth involvement in the supply chain by (B=1.000). The implication is that more income will attract more participants. As young farmers earn more, they may seek training and capacity-building opportunities, which can contribute to supply chain efficiency. This finding agrees with Smith *et al.* (2018) [42] that higher income enables youth farmers to engage more actively in the cassava supply chain.

4.2.2 Production Chain
Table 3 reveals that the omnibus test was significant (value; $p \leq 0.01$), meaning that the model was fit for the analysis. Specifically, results for the production chain revealed that sex (0.537), household size (-0.053), and farming experience (0.071), were all significant at a 5% level of probability.

An increase in male respondents will increase youth involvement in the cassava value chain activity's production chain by (B=1.710). Their involvement helps alleviate poverty by increasing overall income and influencing household-level decisions related to cassava farming. The finding disagrees with chain Blessing *et al.* (2017) [13] that when young female cassava farmers actively engage in the production chain, it not only benefits them individually but also contributes to household well-being and gender equality within the cassava value.

Household size is negative. This indicates that a unit increase in the household size of the respondents will reduce their involvement in the cassava value chain activity's production chain by (B=0.948). Decision-making within households can influence cassava involvement. Young farmer's voices may be marginalized, especially in larger households. Some young farmers may choose to diversify their income sources by engaging in non-farm activities or off-farm employment. A larger household could motivate them to seek alternative income streams beyond cassava farming. This diversification might reduce their direct involvement in cassava production. This finding aligns with Nnahiwe *et al.* (2023) [33] that as household size increases, the available labour also grows.

Finally, farming experience is positive. This indicates that a unit increase in the number of years the farmers spent in cassava cultivation will increase their involvement in the cassava value chain activity's production chain by (B=1.073). This implies that the more experienced a young cassava farmer is the more they want to try another method of cassava cultivation. As farmers gain experience over time, they become more knowledgeable about cassava cultivation techniques, pest management, and optimal practices. This expertise can enhance their efficiency and productivity in various stages of the cassava value chain. This agrees with Quemada (2022) [39] that familiarity with cassava cultivation allows farmers to optimize their production methods.

4.2.3 Harvest Chain
Table 3 reveals that the omnibus test was significant (value; $p \leq 0.01$), meaning that the model was fit for the analysis. Specifically, results for the harvest chain revealed that sex (2.438), age (0.052), marital status (1.727), household size (0.122), access to credit (-0.852) and annual income (0.000) were all significant at 1% level of probability while farming experience (0.067) and farm size (-0.189) were both significant at 5% level of probability.

An increase in male respondents will increase youth involvement in the cassava value chain activity's harvest chain by (B=11.452). It can be deduced that by participating in the harvest chain, they can learn about efficient farming practices, improve their income, and enhance productivity. This contradicts Leon-Himmelstine *et al.* (2021) [27] that active involvement in the harvest chain allows young female farmers to generate revenue, contributing to their financial well-being and potentially reducing household poverty. This also disagrees with Blessing *et al.* (2017) [13] that increasing the involvement of young female cassava farmers in the harvest chain will have positive implications for gender

equality, resource access, revenue generation, and overall community development.

A unit increase in age will increase youth involvement in the harvest chain of the cassava value chain activities by (B=1.054). Youth involvement can facilitate knowledge exchange between generations. Older farmers can share traditional wisdom, while younger individuals bring fresh ideas and innovative harvesting approaches. This finding aligns with Adebisi et al. (2017) [1] that when young farmers are involved in cassava harvesting, they gain skills, confidence, and decision-making abilities which can lead to broader societal benefits. Also, the findings agree with Crevello (2022) [27] that when young people actively participate in cassava harvesting, it can lead to increased productivity. Bakker et al. (2021) [10] also agree that increased youth participation can positively impact household incomes as more young people engage in cassava harvesting.

Marital status is positive which indicates that married youths are involved in the cassava value chain activities of the harvest chain by (B=5.622). When a young cassava farmer gets married, they may experience increased responsibility and commitment to their household. This could lead to greater dedication to their farming activities, including participating in the harvest chain. This is in agreement with Yusuf (2021) [48] that married individuals have family obligations that can motivate them to work harder and contribute more actively to cassava harvesting.

Household size is positive. This indicates that a unit increase in the household size of the respondents will increase their involvement in the cassava value chain activity's harvest chain by (B=1.130). With more family members, there may be greater resources to allocate for cassava harvesting. This finding agrees with Mylliemngap (2021) [32] that larger households may have more labour available, which could enhance participation in labour-intensive activities like harvesting.

Youth cassava farming experience is positive. This indicates that a unit increase in the number of years the farmers spent in harvesting cassava will increase their involvement in the programme's harvest chain by (B=1.069). As young farmers gain experience over time, they become more skilled at harvesting cassava. This finding is in agreement with Lamsal et al. (2015) [26] that with more years of experience, young farmers may adopt improved harvesting practices.

Farm size is negative. This indicates that a unit increase in the size of the farmland will cause a decrease in youth involvement in the programme's harvest chain by (B=0.828). Larger farmland may require more labour during harvesting. This agrees with Oruma et al. (2021) [38] that harvesting often involves manual labour, which can be physically demanding and time-consuming. Therefore, young farmers might prioritize other cassava value chains over harvesting due to the labour-intensive nature of this task.

The access to credit as a factor that influences youths' involvement in the programme's value chain is negative. This indicates that the youths' inability to access credit facilities in the harvest chain of the cassava value chain activities will reduce their involvement by (B=0.427). The implication is insufficient credit restricts youths from expanding their cassava farms. From the findings, it is deduced that relying heavily on credit might lead to dependency on external inputs which is against the mission of the intervention programme. This finding aligns with Oruma et al. (2021) [38] that if youth focus more on accessing credit and less on on-farm activities, their direct involvement in cassava production (planting, and harvesting, among others) may decrease.

Finally, the annual income was positive indicating that a unit increase will increase the youth involvement by (B=1.000). With improved income, young farmers may become more motivated to actively engage in the cassava harvesting chain because they might allocate more time and effort to the harvesting task, leading to increased participation. This agrees with Köhn et al. (2014) [25] that higher income for young cassava farmers can empower them economically. Also, this finding corroborates Simon and Hephzibah (2017) [41] that youths can expand their cassava farms with more income.

Table 3: Demographic variables that influence the youth's involvement in different stages of cassava value chain

Parameter	Input supply			Production			Harvesting		
	Coeff.	t-value	Exp(B)	Coeff.	t-value	Exp(B)	Coeff.	t-value	Exp(B)
(Intercept)	2.381	2.65	10.817	3.356	0.26	28.686	-3.033	-4.40	0.048
Sex	3.109	4.81***	22.391	0.537	2.15**	1.71	2.438	6.56***	11.452
Age	-0.056	-2.99***	0.945	0.001	0.09	1.001	0.052	3.27***	1.054
Marital status	-0.559	-2.48**	0.572	-5.938	-0.46	0.003	1.727	7.66***	5.622
Educational level	-0.218	-4.77***	0.804	0.01	0.71	1.01	0.004	0.35	1.004
Household size	-0.237	-4.05***	0.789	-0.053	-1.96**	0.948	0.122	4.42***	1.13
Farming experience	-0.06	-2.03**	0.942	0.071	2.62**	1.073	0.067	2.33**	1.069
Farm size	0.235	2.33**	1.265	-0.081	-0.94	0.922	-0.189	-2.41**	0.828
Access to credit	1.89	4.22***	6.617	0.299	1.19	1.348	-0.852	-3.75***	0.427
Annual income	0.000	2.14**	1.000	0.000	1.07	1.000	0.000	5.19***	1.000
Omnibus	0.000			0.000			0.000		
Likelihood ratio test	334.34			34.70			316.75		
Akaike's information criteria	191.04			148.52			238.61		
Obs.	387			387			387		

Source: Field Survey, 2025. Sig. @ 1% (***), and 5% (**).

5. Conclusion and Recommendation
The study assessed the demographic variables and their influence on youths' involvement in different stages of the cassava value chain in Anambra State, Nigeria. Findings revealed that sex, age, marital status, educational level, household size, farming experience, farm size, access to credit, and annual income influenced the youths' involvement.

In conclusion, the study suggests that more youths should join as it will minimize rural-urban migration.

6. References

1. Adebisi GL, Oyebode LA, Owolade EO, Jatto BO. Factors influencing rural youths' involvement in cassava production in Oyo State. Int J Agric Sci Res. 2015;4(10):184-91.
2. Adeoye IB, Olorunfemi S. Agribusiness and rural entrepreneurship among Nigerian youth: An Assessment of the Value Chain Development Programme. In: Proceedings of the 32nd International Business Information Management Association Conference, IBIMA; 2018. p. 2476-90.
3. Adewale AT, Lawal OA, Aberu F, Toriola AK. Effect of Credit to Farmers and Agricultural Productivity in Nigeria. East Asian J Multidiscip Res. 2022;1(3):377-88. DOI: 10.55927.
4. Ajayi CO, Olutumise AI. Determinants of food security and technical efficiency of cassava farmers in Ondo State, Nigeria. Int Food Agribus Manag Rev. 2018;21(7):915–28. https://doi.org/10.22434/ifamr2016.0151
5. Akaninyene PO, Obiekwe N, Anunobi C, Obot E, Udoh M. Constraints to rural women involvement in cassava value chain in Nigeria. Am J Econ Bus Adm. 2023;1(5):13-7.
6. Akaninyene O, Essien A, Ejeje A. Determinants of youth's participation in agribusiness in Akwa Ibom State, Nigeria. Int J Pure Agric Adv. 2022;6(1):1-8.
7. Akaninyene O, Maurice O. Rural women involvement in Oil Palm value chain in Akwa Ibom State, Nigeria. Can J Agric Crops. 2022;7(2):105-11. Available from: https://ideas.repec.org/a/onl/cjoaac/v7y2022i2p105-111id697.htm
8. Andrew J, Shehu UA, Ahmed FF. Economic effects of cassava value addition on the income of small-scale farmers in Oshimili North, Delta State, Nigeria. J Arid Zone Econ. 2023;1(2):89-102.
9. Ashraf M, Qasim M. Impact of education on farmers earning: a household survey data analysis. Int Res J. 2019;10(1):200-13. http://dx.doi.org/10.14303/er.2019.234
10. Bakker S, Hennemann I, Dotse S, Kubuga C. Climate adaptation and mitigation measures for nutrition co-benefits in IFAD investments in Ghana: pre-design mission report. 2021. DOI: 10.18174/547741
11. Bamidele T, Olayide O, Onigbinde D. Assessing IFAD Value Chain Development Programme on productivity and income of smallholder farmers in Obafemi-Owode and Yewa North Local Government Areas of Ogun State, Nigeria. AJSD. 2019;9(1):1-23.
12. Bello LO, Baiyegunhi LJS, Mignouna D, Adeoti R, Dontsop-Nguezet PM, Abdoulaye T, *et al*. Impact of youth-in-agribusiness program on employment creation in Nigeria. Sustainability. 2021;13(7801):1-20. https://doi.org/10.3390/su13147801
13. Blessing M, Veronica NU, Frederick EN, Damien G, Peter M. Gender influence on participation in cassava value chains in smallholder farming sectors: evidence from Kigoma Region, Tanzania. Exp Agric. 2017;3(5):1-16. DOI: 10.1017/S0014479717000552
14. Chikezie NP, Omokore DF, Akpoko JG, Chikaire J. Factors influencing rural youth adoption of cassava recommended production practices in Onu-Imo local government area of Imo State, Nigeria. Green J Agric Sci. 2012;2(6):259-68. Available from: https://zenodo.org/records/3373423
15. Chukwuma EC, Orakwe LC, Anizoba DC, Manumehe AI. Spatial statistics of poultry production in Anambra State of Nigeria: A preliminary for bio-energy plant location modelling. Niger J Technol. 2016;35(4):940-8.
16. Crevello S. Local land use on Borneo: applications of indigenous knowledge systems and natural resource utilization among the Benuaq Dayak of Kalimantan, Indonesia [dissertation]. 2022. DOI: 10.31390/gradschool_dissertations.1302
17. Darko-Koomson, Samuel RA, Tahirou A. Analysis of cassava value chain in Ghana: implications for upgrading smallholder supply systems. J Agribus Dev Emerg Econ. 2020;10(2):35-217.
18. Ekwere GE, Edem ID. Evaluation of Agricultural Credit Facility in Agricultural Production and Rural Development. Glob J Hum Soc Sci. 2014;14(3):18-26.
19. Ezemenaka KE. Youth violence and human security in Nigeria. Soc Sci. 2021;10(7):267. https://doi.org/10.3390/socsci10070267
20. Federal Government of Nigeria (FGN)/International Fund for Agricultural Development (IFAD) – Value Chain Development Programme (VCDP) – Additional Financing (AF). Cassava Palatability Acceptability Study in 9 FGN/VCDP-AF Implementation States. Terms of reference for consulting services for the Federal Ministry of Agriculture and Rural Development. Abuja; 2024. Available from: https://www.ifad.org/project-procurement [Accessed 20 Aug 2021].
21. Funmilola OT, Olawale O, Nwadihi M. Effect of IFAD value chain development programme on economic welfare of smallholder rice and cassava producers in Anambra State, Nigeria. FGN IFAD VCDP. 2018. Available from: https://www.researchgate.net/publication/328282907
22. Ibrahim AT. Socioeconomic analysis of cassava value chain in Ekiti State, Nigeria. Int J Adv Econ. 2022;4(1):1-18. DOI: 10.51594/ijae.v4i1.291
23. Ibrahim M, Mustapha BB. Promoting youth agripreneurship for sustainable agriculture in Nigeria: A focus on value chain development. In: Inclusive business in Africa. Palgrave Macmillan; 2020. p. 271-87.
24. Jirgi AJ, Adebayo CO, Abdullahi A, Ibrahim FD, Coker AAA. Assessment of youth's participation in cassava production under the Value Chain Development Programme (VCDP) in Bida Local Government of Niger State, Nigeria. Sci Pap Ser Manag Econ Eng Agric Rural Dev. 2019;19(3):312-8.
25. Köhn D, Swinnen J, Maertens M, Hartig P, Jainzik M, Pfeiffer K, *et al*. Finance for food. Springer; 2014. DOI: 10.1007/978-3-642-54034-9
26. Lamsal P, Pant KP, Kumar L, Atreya K. Sustainable livelihoods through conservation of wetland resources: a case of economic benefits from Ghodaghodi Lake, western Nepal. Ecol Soc. 2015;20(1). DOI: 10.5751/ES-07172-200110
27. Leon-Himmelstine C, Phiona S, Löwe A. Young women in the agricultural sector in Uganda: Lessons from the youth forward initiative. ODI; 2021. Available from: https://odi.org/en/publications/young-women-in-the-agricultural-sector-in-uganda-findings-fromyouth-

forward/

28. Manganyi B, Lubinga MH, Zondo B, Tempia N. Factors influencing cassava sales and income generation among cassava producers in South Africa. Sustainability. 2023;15(19):1-14. https://doi.org/10.3390/su151914366

29. Martin B, Patrick A, Jacob N, Kwadwo KA. Smallholder farmers' participation in Cassava value addition practices: What drivers matter in Ghana? J Agric Food Res. 2024;16(10):11-20. https://doi.org/10.1016/j.jafr.2024.101120

30. Masamha B, Uzokwe VN, Ntagwabira FE, Gabagambi D, Mamiro P. Gender influence on participation in cassava value chains in smallholder farming sectors: evidence from Kigoma region, Tanzania. Exp Agric. 2019;55(1):57-72. DOI: 10.1017/S0014479717000552

31. Mpiira S, Kipsat M, Mose PB, Kalyango FX, Staver C. The influence of gender specific decisions on household technology choice within the farming households in Central Uganda. Afr J Food Agric Nutr Dev. 2024;24(3):25795-824. https://doi.org/10.18697/ajfand.128.24325

32. Mylliemngap W. Agrobiodiversity and Natural Resource Management in Traditional Agricultural Systems of Northeast India. J Agric. 2021;1(1):1–23. https://doi.org/10.33002/aa010101

33. Nnahiwe P, Hejkrlík J, Bavorová M. Adopting modern agricultural technologies and impact on economic performance: evidence from cashew farmers in Kenya. Int Food Agribus Manag Rev. 2023;26(4):615–39. https://doi.org/10.22434/ifamr2021.0100

34. Nwalieji HU, Okeke MN, Uzuegbunam CO, Udemezue JC. Extent of youths' involvement in agricultural programmes and projects in South-Eastern Nigeria. Int J Agric Sci Res Technol Ext Educ Syst. 2018;8(2):95-102.

35. Okafor OE, Michael MC, Okafo O, Nwafor OG. Influence of International Fund for Agricultural Development (IFAD) on Value Chain Activities of members of cooperative societies in Awka North Local Government Area of Anambra State, Nigeria. Int J Res Innov Soc Sci. 2023;7(7):1353-71.

36. Okeke C, Obianefo C, Nwigwe C, Obot A. Analysis of the rural youth engagement in IFAD Value Chain Development as a panacea to unemployment in Southeast Nigeria. Am J Agric Biol Sci. 2022;1(7):71-8. https://thescipub.com/pdf/ajabssp.2022.71.78.pdf

37. Onubuogu GC, Esiobu GC, Nwosu CS, Okereke CN. Resource use efficiency of smallholder cassava farmers in Owerri Agricultural zone, Imo State, Nigeria. Scholarly J Agric Sci. 2014;4(6):306-18.

38. Oruma SO, Misra S, Sanz LF. Agriculture 4.0: An implementation framework for food security attainment in Nigeria's Post-COVID-19 era. IEEE Access. 2021;9:83592–83627. https://doi.org/10.1109/access.2021.3086453

39. Quemada H. Lessons learned from the introduction of genetically engineered crops: relevance to gene drive deployment in Africa. Transgenic Res. 2022;31(3):285–311. https://doi.org/10.1007/s11248-022-00300-2

40. Selwyn N. The future of AI and education: Some cautionary notes. Eur J Educ. 2022;57(4):620–31. https://doi.org/10.1111/ejed.12532

41. Simon AE, Hephzibah OO. Effects of socio-cultural factors on effective agricultural training programs for farmers by the Benue State Agricultural Development Authority in Zone C. J Asian Rural Stud. 2017;1(1):60-9.

42. Smith D, Newby J, Cu Thi Le Thuy, Yadav L, Malik AI, Cramb R. Smallholder farmer use and sources of cassava varieties - Implications for private sector involvement in technology dissemination. 2018. Available from: https://research.aciar.gov.au/genderandyouthinagriculture/cassavavaluechains/wp-content/uploads/2018/09/Discussion-Paper-Number-10.pdf

43. Tham-Agyekum EK, Bakang JEA, Abdul-Mumin A, Mensah W, Adarkwa BO, Duah A, et al. Harnessing climate information service use for cocoa farming sustainability in Ghana. Clim Dev. 2024;1–14. https://doi.org/10.1080/17565529.2024.2359984

44. Tejumola A. The case for job creation hubs to reduce youth employment in Africa in focus. Brookings Institution; 2021. Available from: https://www.Brookings.edu.org

45. Twumasi MA, Jiang Y, Acheampong MO. Determinants of agriculture participation among tertiary institutions youths in Ghana. J Ext Rural Dev. 2019;11(3):56-66.

46. Uchemba VU, Nenna GM, Obianefo AC. Adoption of improved cassava production technologies among small-scale farmers in Anambra State, Nigeria. J Plant Sci. 2021;9(4):119-27. DOI: 10.11648/j.jps.20210904.11

47. Ukoha OO, Okoye BC, Emetu J. Analysis of the determinants of total factor productivity among small-holder cassava farmers in Ohafia Local Government Area of Abia State. Munich Personal Repec Archive (MPRA). 2010;26(125):1-7.

48. Yusuf HT. Islamic Moral Value of self-reliance: A Drive for Poverty Alleviation and Entrepreneurship amongst Women in Kontagora Emirate, Nigeria. JISH (Journal). 2021.