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Factors Influencıng Youth Partıcıpatıon in Gınger Productıon in Southern Kaduna Zone, Kaduna State Nıgerıa

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Abstract

This study examined the factors influencing youth participation in ginger production in Southern Kaduna Zone, Kaduna State, Nigeria. Specifically, it assessed the extent of youth participation across production stages, identified socio-economic influences on participation, and explained constraints limiting engagement in ginger farming. A multi-stage sampling procedure was employed: five local government areas (LGAs) were selected, one high-ginger-producing community was chosen from each LGA, and 30 youths were randomly selected per community, giving a total sample of 150 respondents.The findings revealed that youth participation was highest in land preparation, with 28.7% reporting very high involvement. Regression analysis showed that household size (0.159), even though the coefficient is positive (0.241), had a negative t-value (-3.240), so its significance is based on absolute value and farm size significantly influenced participation levels with a t-value of 2.590. Poor market access emerged as a major constraint, with 28.0% and 20.7% of respondents rating it as severe and very severe, respectively, indicating that limited access to profitable markets discourages sustained engagement.The study recommends establishing a Youth-in-Ginger Empowerment Scheme that provides low-interest loans, grants, and youth-friendly financial products, such as group lending and value-chain financing, to enhance access to land, inputs, and markets.

Keywords: participation in Gınger production, factors influencing youth in ginger production

Introduction

Agriculture has historically played a pivotal role in Nigeria's economic development, serving as the backbone of rural livelihoods, food security, and national income generation.(Osai-Azubuike et al., 2023) It is one of the largest sectors in the country's economy, contributing approximately 25% to the Gross Domestic Product (GDP) and employing more than 70% of the labour force, particularly in rural communities (Artz et al., 2026). With its diverse agro-ecological zones and vast arable land, Nigeria has the capacity to produce a wide range of crops, one of which is ginger (Zingiber officinale), a highly valued cash crop both locally and internationally (Adamu et al., 2025).

Ginger is known for its culinary, medicinal, and industrial uses, and is in high demand across global markets. Nigeria is ranked as the largest producer of ginger in Africa and

among the top five producers in the world (Tanko et al., 2023). Within Nigeria, Kaduna State stands out as the leading producer, and within Kaduna State, Kaduna South zone possesses ideal agro-climatic conditions for its cultivation (Onwuegbunam et al., 2026). The area is situated in the Guinea Savannah zone, which offers favorable rainfall patterns, temperature, and soil conditions suitable for the production of ginger. As a result, the region has built a reputation for producing high-quality ginger that is exported to various parts of the world (Kumar et al., 2025).

Despite the increasing demand and the profitability of ginger, youth participation in its production remains conspicuously low (Ebong & Orok, 2026). This trend is particularly troubling given Nigeria's demographic structure, where youth constitute over 60% of the population (Mohammadtaofeek & Aasa, 2025). The African Union defines youth as individuals aged between 15 and 35 years, and in Nigeria, this group faces high rates of unemployment and underemployment. According to NBS (2021), over 42% of Nigerian youths are unemployed, a situation that is even more pronounced in rural areas. Ironically, while agriculture has the potential to absorb this unemployed labor force, it continues to be unattractive to many young people.

Several factors contribute to the apparent lack of youth interest in agriculture, especially in ginger production. Among the impeding factors is socio-economic barriers such as limited access to land and finance, institutional weaknesses, inadequate agricultural training, lack of mechanization, and prevailing negative perceptions about farming (Ahmad et al.). Young people often view farming as a laborious, non-prestigious, and unprofitable venture, especially when compared to white-collar jobs or urban-based entrepreneurial opportunities.

Another factor discouraging youth participation in ginger farming is the knowledge gap. Many young people lack the technical knowledge and skills necessary to engage in modern and profitable agriculture. In most cases, agricultural extension services are underfunded and poorly equipped to provide adequate training and mentorship to youth. Even when training opportunities exist, they are often not tailored to the interests or aspirations of young people, who may be more inclined towards digital agriculture, agri-processing, and value chain development which promise to enhance crop production (ginger production inclusive)

Nevertheless, ginger presents a significant opportunity for economic empowerment, rural development, and youth engagement. As a high-value crop, ginger commands premium prices in both local and export markets. Its relatively short growing cycle and adaptability to mixed cropping systems make it ideal for smallholder farming, Moreover, value addition through processing into powder, oil, tea, and other derivatives creates opportunities for agribusiness entrepreneurship and job creation along the ginger value chain.

Southern Kaduna zone, with its blend of urban and peri-urban features, strategic location, and existing agricultural infrastructure, is well-positioned to be a hub for youth-led ginger agribusiness. The zone has access to transportation networks, local and international markets, and extension services from government and private actors. Therefore, its youthful population, if adequately supported, could be harnessed to drive innovation and growth in ginger production (Jangir et al., 2026).

It is within this context that this study seeks to investigate the factors influencing youth participation in ginger production in Southern Kaduna zone Specifically sought to: Assess the extent of youth participation in various stages of ginger production.

determine the socio-economic factors influencing youth participation in ginger production, and identify the constraints limiting youth in participation in ginger farming in the study area.

Methodology

The study was conducted in Southern Kaduna zone of Kaduna state, located in the Northwestern geopolitical zone of Nigeria.
The area is characterized by a Guinea Savannah agro-ecological zone, which is suitable for a variety of agricultural activities, including ginger production. The population, as projected by the National Population Commission (NPC, 2025), stands at over 6,000,000, with youth (defined by Nigeria's National Youth Policy as persons aged 18–35 years) making up a significant portion approximately 55–60%.
This study used both primary data and secondary information and multi-stage sampling technique were use in selecting the respondents. In the first stage five LGAs were purposively selected. The purposive selection was because the LGAs are known for youth involvement in ginger farming. The second stage involved selection of one community from each of the LGAs selected giving a total of five communities with high ginger production these include: Sabzuro, Maraban Walijo, Dangoma, Zonkwa and Tudun Wada were identified from Jaba, Kachia, Jema'a, Zangon Kataf and Kaduna South LGAs respectively. The third stage involve the selection of 30 youth aged 18 to 35 engaged in ginger production in each community. The total 150 youth population was chosen to ensure representativeness and manageability.
Data collected were analyzed using both descriptive and inferential statistical methods to draw meaningful conclusions. Descriptive statistics such as frequencies, percentages, means to measure the extent of youth participation in ginger production, constraint limitation youth participation in ginger production and multiple regression analysis were used to determine the factors influencing youth participation in ginger production in the study area.

Results and Discussion

Extent of Youth Participation in Ginger Production

The results in Table 1 indicate that youths in Kaduna South Senatorial Zone are actively involved in ginger production, particularly in core agronomic activities. High levels of participation are observed in land preparation (49.4%), planting (47.3%), fertilizer application (47.4%), and weeding/field maintenance (48.7%), confirming that youths predominantly engage in labour-intensive farm operations. Participation is also relatively high in pest and disease control (46.7%) and harvesting (44.0%), although a notable proportion report low or no involvement, suggesting variability in engagement across households. It was also reported that the farmers actively participated in several cluster activities such as exhibition of produce ($\bar{x}$= 2.68), training ($\bar{x}$= 2.62), planning activities of the group ($\bar{x}$= 2.61), determining of group priorities ($\bar{x}$= 2.57) and mobilizing of group members ($\bar{x}$= 2.57). The participation in 10 out of the 12 cluster activities by the farmers could be an indication of their high level of commitment to the cluster(Ugwuoti et al*,.* 2026)

In contrast, youth participation declines in post-harvest processing (41.4%) and marketing (47.4%), with a significant share indicating low or no participation, reflecting constraints in access to processing facilities, capital, and market opportunities. Overall, the findings demonstrate that youth participation is concentrated in primary production

activities, with comparatively limited involvement in value addition and market-oriented functions, consistent with existing literature on youth engagement in agricultural value chains in Nigeria (Ojo *et al.,* 2023; Onwunali et al*.,* 2023).

Table 1: Extent of Youth Participation in Ginger Production

Participate Activities	Very High	High	Moderately	Low	Not at all
Land preparation	28.7	20.7	18.0	18.7	14.0
Planting of ginger rhizomes	21.3	26.0	23.3	16.0	13.3
Fertilizer and manure applit	20.7	26.7	24.0	16.0	12.7
Harvesting	20.7	23.3	20.7	19.3	16.0
Post-harvest processing	20.7	20.7	17.3	22.0	19.3
Marketing of ginger	24.7	22.7	17.3	21.3	14.0
Pest and disease control	22.7	24.0	23.3	17.3	12.7
Weeding & field maintenance	24.7	24.0	20.7	16.7	14.0

Source: Field survey 2025

The Influence of Socio-economic Characteristics of the Respondents on Participation in Ginger Production.

Table 2 reveals the extent to which socio-economic characteristics influence farmers' participation in ginger production. The coefficient of determination ($R^2 = 0.212$) indicates that 21.2% of the variation in farmers' participation is explained by the included socio-economic variables, while the adjusted R^2 (0.141) suggests that after adjusting for degrees of freedom, about 14.1% of the variation is accounted for by the model. This implies that although the explanatory variables included in the model are relevant, there are still other important institutional, environmental, and economic factors not captured in the model that also influence participation in ginger production.

The findings show that age is positive and statistically significant at 5% level, implying that older farmers are more likely to participate in ginger production. This may be attributed to accumulated farming experience, better access to productive resources, and increased stability in livelihood decisions over time. This result is consistent with previous studies which found that age significantly influences agricultural participation and productivity among rural farmers in Nigeria, as older farmers often possess more experience and farming knowledge that enhances production decisions (Mohammed et al., 2024). Also it is reported that The effect of sex was positive and significant, which means that there is a higher chance for a male youth to participate in pineapple production than a female youth.This may be observed because the responses to the perception questions indicate that pineapple production is labour-intensive and laborious (Buabeng and Mensah, 2024).

Marital status was found to be negative and highly significant at 1% level, indicating that household social structure plays an important role in determining participation in ginger production. This may be explained by the fact that married farmers often face higher household responsibilities and financial obligations, which may limit their investment capacity in agricultural enterprises. Similarly, household size was found to be positive and statistically significant, suggesting that larger households tend to enhance

participation in ginger production. This is because larger households provide readily available family labour, which is a critical input in labour-intensive agricultural enterprises such as ginger farming. This finding aligns with empirical evidence that household size significantly influences agricultural output and participation due to labour availability in rural farming systems (Salau, 2023).

Farm size was also positive and statistically significant, indicating that farmers with larger farmland are more likely to engage actively in ginger production. This is expected because land availability is a major determinant of agricultural production capacity and scale of operation. Similar findings have been reported in studies on ginger production in Nigeria, where farm size significantly influences productivity and output levels (Hannatu et al., 2022).

Extension contact was significant but negatively signed, suggesting that although extension services influence participation in ginger production, the effectiveness of such services in the study area may be inadequate. This may be due to irregular visits, poor-quality advisory services, or mismatch between extension recommendations and farmers' realities. Empirical studies have shown that access to extension services is a key determinant of agricultural adoption and productivity, although its effectiveness depends on quality and frequency of contact (Yusuf, 2022; Mohammed et al., 2024).

Table 2: The Influence of Socio-economic characteristics of the respondents on participation in ginger production.

Variables	**Coefficients**	**Std. Error**	**t-value**
(Constant)	3.505	0.433	8.098***
Age (X1)	0.173	0.079	2.198**
Gender (X2)	-0.109	0.127	-0.858 ^{NS}
Marital status (X3)	-0.265	0.062	-4.253***
Educational Level (X4)	0.129	0.142	0.908 ^{NS}
Household Size (X5)	0.241	0.159	-3.243***
Occupation (X6)	-0.204	0.064	-1.512 ^{NS}
Farm Size (X7)	0.165	0.087	2.590***
Extension contact (X8)	-0.225	0.074	2.600***
Annual Income (X9)	-0.022	0.063	-0.295^{NS}
Association Membership(X10)	0.33	0.046	0.709 ^{NS}
R2= 0.212			
Adjusted R2 = 0.141			

Source: Field survey, 2025
****P≤ 0.05**
NS= Non-significant

Constraints Limiting Youth Participation in Ginger Farming

The results in Table 3 indicate that youth participation in ginger farming in Kaduna South Senatorial Zone is constrained by a combination of economic, technical, and institutional factors, most of which are perceived as severe. Lack of capital/credit (44.0%) and high cost of inputs (39.4%) rank among the most critical constraints, underscoring the financial limitations faced by youths in accessing essential production resources. This finding aligns with studies that identify inadequate access to credit and rising input costs as major barriers to youth engagement in agriculture in Nigeria (Ojo et al., 2023; Food and Agriculture Organization, 2014). Similarly, poor market access (48.7%) and inadequate storage facilities (48.0%) are prominent challenges, suggesting that post-harvest losses, weak market linkages, and price fluctuations significantly reduce profitability and discourage sustained participation. This is also reported that Inadequate agricultural credits (89.7%), poor access to improved seed varieties (86.4%), lack of digital tools for rice cultivation (84.3%), and high cost of agricultural inputs (78.7%) were the major constraints to youth participation in rice cultivation (Izuogu et al., 2025). Furthermore, pest and disease infestation (44.7%) and inadequate mechanization (44.6%) highlight production-related constraints that reduce efficiency and increase labour drudgery, making agriculture less attractive to youths. The issue of poor access to extension services (44.7%) further exacerbates these challenges by limiting farmers' access to improved technologies, agronomic practices, and timely information. These findings are consistent with previous studies entittle: Calibration and Validation of the Aquacrop Model For Drip-Irrigated Tomato Under Growth-Stage-Based Deficit Irrigation İn Kaduna, Northern Guinea Savanna, Nigeria which emphasize that limited extension contact, poor infrastructure, and weak institutional support systems constrain agricultural productivity and youth involvement (Onwunali et al., 2023; International Fund for Agricultural Development, 2019).

Table 3: Constraints Limiting Youth Participation in Ginger Farming (n=150)

Problems Encountered	Very sever	Sever	Moderately	Minor Seve	Not Sever
Lack of capital/credit	17.3	26.7	20.7	19.3	16.0
High cost of inputs	18.7	20.7	17.3	22.0	21.3
Pest and disease infestation	22.0	22.7	18.0	23.3	14.0
Poor access to extension services	20.7	24.0	25.3	17.3	12.7
Inadequate storage facilities	22.0	26.0	20.7	17.3	14.0
Poor market access	20.7	28.0	21.3	16.7	13.3
Inadequate mechanization	21.3	23.3	22.0	18.7	14.7

Source: Field survey 2025

Conclusion and Recommendations

Youths in Kaduna South Senatorial Zone are actively involved in ginger production, particularly in labour-intensive activities such as land preparation, planting, fertiliser application, and field maintenance. Their participation is comparatively lower in post-harvest processing and marketing, indicating limited engagement in higher-value segments of the value chain. Socio-economic factors, especially age, farm size,

household size, and membership of associations, significantly influence participation. Youth involvement is constrained by several challenges, including lack of credit, high input costs, poor market access, inadequate storage, limited mechanisation, pest and disease problems, and weak extension services. It was recommended that**:**

1. Interventions should promote value addition and market-oriented engagement. This can include providing training in processing techniques and entrepreneurship,
2. Encourage participation; policies should focus on facilitating land access, promoting cooperative/group membership, and providing youth-targeted capacity building.
3. Establish youth-friendly credit schemes, improve input supply, enhance extension delivery, provide mechanisation support, and develop market and storage infrastructure to reduce barriers to participation.

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