

# Determinants of youth participation in dry season vegetables cultivation in urban areas of Ondo State, Nigeria

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**Abstract:** The study investigate the determinants of youth participation in dry season vegetables cultivation in urban areas of Ondo state, Nigeria. Multistage sampling technique was used to select 120 respondents. Structured questionnaire were administered on respondents to elicit information on socio-economic/demographic characteristics and other variables. Descriptive statistics was employed to analyse the socio-economic/demographic characteristics of respondents, while logistic regression model was used to ascertain determinants of youth participation in dry season vegetables cultivation. Mean age of respondents was  $24.7 \pm 3.4$  years, 65.5% were male, 58.6% were married, and 72.4% had formal education with  $8.4 \pm 2.5$  years of experience. Major challenges facing youth in the study area were inadequate capital, lack of inputs and small farm size among others. The logistic regression analysis, revealed that; age, level of education, household size and access to credit, among others were the significant variables influencing youth participation in dry season vegetables cultivation at  $P \leq 0.05$ . Major constraints hindering youth in the study area were inadequate capital and farm land and poor inputs supply. Youth engagement in dry season vegetables cultivation has helped to provide employment/jobs, income, alleviate poverty, and arrest youth restiveness in the urban centres. It was recommended that access to credit and inputs supply should be made a necessity to youth.

**Key words:** Logistic regression, urban, vegetables, youth participation.

## INTRODUCTION

Youth has been variously defined as a young person with the age range of between 10 and 35 years in some countries in Africa (Akpan et al., 2015). The United Nation and the Common Wealth of Nation defined youth as comprising of those between ages 15 and 29 years while the African Youth Charter promulgated in 2006 by the African Union considers that youth are people in the age range of 15 to 35 years of age. However, in Nigeria youth is defined as all young people between the age of 18 and 30 years, hence the National Youth Service Corps programme mandatory age of 30 years. This study adopted the African Youth Charter definition of youth as individual between age ranges of 15 to 35 years. Youth have the qualities and strength that could enhance productivity in agriculture, however, majority of them have strong apathy and disenchantment towards the sector as options for livelihoods. Youth participation in dry season

vegetables cultivation in urban centres has become prominent across different parts of Ondo State and this has attracted scholars' attention. The increasing rate of unemployment with its attendant exodus of youth out of the farm has been a matter of serious concern to policy makers and other stakeholders in agriculture. Agriculture in Nigeria is faced with challenges ranging from small farm size, poor income, poor soil fertility, environmental degradation, climatic variations, and price instability, among others. This has led to disguise unemployment in the rural areas thus forcing youth to migrate to cities with the aims of securing white collar jobs since they do not find enough profitable economic opportunities in rural areas.

Dry season vegetables cultivation in the urban centres is one of the livelihood coping strategies adopted by some urban poor youth to alleviate poverty, promote food

security, earn income and create employment (Adediji and Ademiluyi, 2009). Vegetables production is highly profitable, especially in urban areas since it requires minimal land size, little water for irrigation, and the market for vegetables is readily available thus provide employment opportunities for the jobless youth (Adediji and Ademiluyi, 2009; Nichols and Hilmi, 2009). Dry season vegetables cultivation is practiced under irrigation in the river flood plains that are submerged during the rainy season which implies that it is a farming system that is practiced in the dry seasons (Adebisi-Adelani et al., 2011). Vegetables consumption among households in the cities is so important and this has made the production to be a lucrative business (Juma et al., 2015). Vegetables in household diets increase the quality of soup, supplies minerals and vitamins which help to nourish the body and maintain good and healthy conditions. The common vegetables cultivated in the study area include; pumpkin, amaranths species, *basella alba*, *Telfaria triumfeta* (ugwu), okra, among others. Vegetables are the most important and widely cultivated food and income generating crops in many parts of Africa (Okunlola, 2009).

Youth participation in dry season vegetables cultivation has been of immense benefits in the urban centres. Apart from the fact that it provides employment opportunities and income for youth, it reduces youth restiveness, and promotes entrepreneurship and skill development (Nnadi and Akwizu, 2008). Moreover, the short production cycle of vegetables also made it an attractive business for the youth. Also, it is practiced on small-scale basis, involves the use of simple and primitive technology (hoe and cutlass) and family labour for its operations. Therefore, increase involvement of youth in dry season vegetables cultivation will expose them to greater opportunities in both rural and urban environments than their contemporaries in other sectors. Youth participation in dry season vegetables production in the urban areas is critical in enhancing food security and wealth creation as well as promoting employment among youth.

Several literatures have documented the involvement of youth in agricultural production (Akpan, 2010, Ruta, 2012, Juma et al., 2015; Adebisi-Adelani et al., 2011), however, existing literatures are limited and do not discussed youth participation in dry season vegetables cultivation in urban centres. Also, little attention was given to this enterprise in our urban centres. It is not clear to policy makers whether dry season vegetables cultivation could enhance the livelihood opportunities for urban youth. Moreover, literature on youth participation in agriculture does not indicate the determinants of youth participation in dry season vegetables cultivation in urban centres. Hence, the study investigated determinants of youth participation in dry season vegetables cultivation in the urban areas of Ondo state, Nigeria. The specific objectives were to examine the socio-economic/demographic characteristics of the respondents,

identify the challenges facing the respondents and determine factors influencing youth participation in dry season vegetables cultivation in urban areas of Ondo state, Nigeria.

## MATERIALS AND METHODS

This study was carried out in Ondo state in the South-west geo-political zone of Nigeria. Ondo State lies between latitude  $5^{\circ} 45'$  and  $8^{\circ} 15'$  North and longitude  $4^{\circ} 45'$  and  $6^{\circ}$  East. The inhabitants of the state practiced farming as major occupation with other activities such as petty trading, tailoring, artisans, agro-processing, among others. The population of the state was 3,441,024 people (National Population Commission, 2006). The state falls in a typical tropical rainforest with average temperature of between  $21^{\circ}\text{C}$  and  $33^{\circ}\text{C}$  and rainfall of between 1100 mm and 2200 mm per annum. The soil in Ondo state favours the cultivation of yam, maize, cassava, coco-yam, plantain pepper, cocoa, kola, oil palm, among others. The natural resources in the study area included, crude oil, bitumen, granite and other mineral resources. The primary data were used for this study was collected with the aid of structured questionnaire.

A multi-stage sampling technique was employed in the selection of respondents for the study. The first stage entailed a random selection of four local government areas (LGAs), one from each of the four agricultural zones. The second stage involved random selection of three urban centres from each of the selected LGAs. The third stage was the random selection of youth participating in dry season vegetables cultivation in the selected cities. A total of one hundred and twenty (120) respondents were randomly selected among the youth participating in dry season vegetables cultivation in the study area. Data were gathered on socio-economic/demographic characteristics of the respondents, income, challenges facing respondents in dry season vegetables cultivation and other variables. Descriptive statistics was used to analyse the socio-economic/demographic characteristics and other variables while the logistic regression was used to analyse factors influencing youth participation in dry season vegetables cultivation. The logit regression model is a unit or multivariate technique which allows for estimating the probability that an event occurs or not by predicting a binary dependent outcome from a set of independent variables. Logit model ensures production of probability of choice within (0, 1) range. The Logit model is based on cumulative logistic probability function and it is computationally tractable. Logit regression model has been used by several scholars due to its comparative mathematical simplicity. Sirak and Rice (1994) argue that logistic regression is powerful, convenient and flexible and is often chosen if the dependent variable is categorical in nature. However, some of the predictor

variables in the study are categorical and therefore the study employed the binary logit model to identify factors influencing youth participation in dry season vegetables cultivation in urban areas of Ondo state. The logistic probability model is expressed explicitly as:

$$Z_i = \ln \left[ \frac{P_i}{1-P_i} \right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \dots \beta_n X_n + U_i \dots \dots \dots 1$$

Pi = probability of participating in dry season vegetables cultivation (1 if yes, 0 if otherwise). The explanatory variables are;  $X_1$  = Age (Years);  $X_2$  = Marital status (1 if married, 0 if otherwise);  $X_3$  = Educational level (years of schooling);  $X_4$  = Farm size cultivated (hectares);  $X_5$  = Household size (number);  $X_6$  = Distance (km);  $X_7$  = Access to credit (amount of loan accessed);  $X_8$  = Income from sale of vegetables (₦);  $X_9$  = Access to inputs (1 if yes, 0 if otherwise);  $X_{10}$  = Contact with extension agents (number of contacts);  $\beta_1 - \beta_9$  = Coefficients of stimulus variables,  $\beta_0$  = Constant or intercept term,  $u$  = Error term.

## RESULTS AND DISCUSSIONS

The results of the socio-economic/demographic characteristics (Table 1) show the age, sex, marital status, educational level, years of experience and income realised. On age, age determines the activities to be involved in and decision making. The result shows that 55.7% of the respondents were between 29 and 33 years while 31.2%, 10.0% and 3.1% were between 24 and 28 years, greater than 33 years and less than 24 years respectively. The mean age was 26.7±4.4 years. This implies that, all the youths in the study areas were still in their active and productive age. This finding is contrary to Donye et al. (2012) who found that majority of the youths involved in yam production in Wukari Local Government Area of Taraba State, Nigeria were between the age range of 31 to 40 years. However, Kimaro et al. (2015) reported that youth between 30 and 35 years were self-dependent and they see agriculture as the most important income generating activity for their wellbeing and livelihoods. On the sex of the youth, 65.5% were male while 35.5% were female. The result is in line with Kimaro et al. (2015) who reported that women are less involved in vegetables and beans cultivation which require more physical strength. Moreover, Chikezie (2012) opined that the low percentage of female participation in agricultural production could be attributed to the involvement of women in other household chores outside the farm. However, Akpan et al. (2015) found in a study on youth participation in agriculture in southern Nigeria, that 53.3% of male youth were involved in agricultural production. The marital status revealed that 58.6% were married while 30.1% and 10.0% were neither widowed nor divorced and single respectively. This conforms to the findings of Akpan et al. (2015) who found

**Table 1.** Socio-economic/demographic characteristics of respondents (n = 120).

Variables	Percentage (%)
Age (Yrs)	
<24	3.1
24-28	31.2
29-33	55.7
>33	10
Mean(SD)	26.7±4.4
Sex	
Male	65.5
Female	34.5
Marital status	
Single	11.3
Married	58.6
Widowed/Divorced	30.1
Educational Level	
Primary Education	25.7
Secondary Education	43
Tertiary Education	3.7
Non-formal Education	27.6
Years of experience (Yrs)	
<5	11.9
10-May	50.3
>10	37.8
Mean(SD)	8.4±2.5
Income Realised (₦)	
<50, 000	12.4
50, 000 – 100, 000	21.5
110, 000 – 150, 000	52.2
>150, 000	13.9
Mean(SD)	₦114216.49± ₦47057.61

Source: Field Survey, 2016.

that 79.7% of youth interviewed for their study in southern Nigeria were married and Kimaro et al. (2015) in Tanzania who discovered that age and marital status were among the major determinants of youth participation in agricultural activities. On educational attainment of respondents, the result showed that 43.0% of the youth had secondary education while 27.6% and 25.7% respectively had primary and non-formal education. This implies that the level of education attained help youth to adopt agricultural innovation and increase productivity in vegetables cultivation. The analysis revealed on years of experience of respondents that 50.3% and 37.8% had between 5 and 10 years and above 10 years of experience in dry season vegetables cultivation respect-

**Table 2.** Challenges of youth participation in dry season vegetables cultivation (n = 120).

Constraints	Percentage (%)
Inadequate land	28.4
Inadequate fund	45.7
Lack of access to inputs	11.1
Problems of grazing cattle	5.2
Inadequate water for irrigation	8
Pests/Diseases	1.6

Source: Field Survey, 2016.

tively while 11.9% had less than 5 years experience in dry season vegetables cultivation in the study area. The mean year of experience was  $8.4 \pm 2.5$  years. Informal discussion with respondents revealed that their years of experience had enabled them to improve upon their operations and production capacity in dry season vegetables cultivation because the more experienced you are in a business the better your output. On income realised from vegetables cultivation business, 50.2% of the respondents realised between ₦110,000 and ₦150,000 per cultivation season while 21.5% realised between ₦50,000 and ₦100,000 per cultivation season however, the mean income was ₦114, 216.49  $\pm$  ₦47, 057.61. However, this is at variance with Agboola et al. (2015) who reported an income of less than ₦100,000 per annum from the sale of vegetables by youth that participated in indigenous farm practices of vegetables production in Oyo state, Nigeria. Also, Issa et al. (2011) reported an annual income of ₦100,000 in a study on youth involvement in agriculture in Sabon-Gari, Taraba State, Nigeria.

Table 2 revealed the constraints facing youth in dry season vegetables cultivation. The result showed that 45.7% of the respondents opined that inadequate fund has been a major challenge facing youth in dry season vegetables cultivation in urban centres. This finding is consistent with Adebisi-Adelani et al. (2011) who reported lack of credit as a major constraint facing Fadama vegetables farmers in Oyo state, Nigeria. Inadequate land accounted for 28.4% while lack of access to inputs, incessant cattle invasion and inadequate water for irrigation accounted for 11.1%, 5.2% and 8.0%, respectively as problems confronting youth in dry season vegetables cultivation in the study area. This is in agreement with Issa et al. (2011) who identified inadequate capital, high cost of inputs, effect of pests and diseases, inadequate basic amenities as problems facing youth in agricultural production and Adebisi-Adelani et al. (2011) reported livestock disturbance among Fadama vegetables farmers in Oyo state, Nigeria.

The result of the logistic regression model (Table 3) revealed the Log likelihood of -302.218, the likelihood ratio was 25.46 while the Pseudo ( $R^2$ ) was 0.482 and the  $p$ -value was 0.000 indicating that the model as a whole

fits significantly the variables as joint predictors of youth participation in dry season vegetables cultivation. The variables that were perceived to affect youth participation in dry season vegetables cultivation in urban centres were estimated using the binary logistic regression model, only six variables (age, educational level, household size, farm size, access to credit and income) were found to be significant at 5% level of significance with positive effect on youth participation in dry season vegetables cultivation. The marginal effects are for discrete change of different dummy variables from 0 and 1. On the age of youth, the result showed that age was significant with positive marginal effect on participation in dry season vegetables cultivation at 5% level of significance. This implies that a unit increases in the age of youth increases the probability of youth participation in dry season vegetables cultivation by 0.3%.

On education, the result showed that education was statistically significant with negative effect of youth participation in dry season vegetables cultivation. This implies that a year increase in the years of schooling decreases the probability of youth participation in dry season vegetables cultivation by 4.7%. The findings agreed with the findings Agwu et al. (2012) that increase in educational attainment among youth decreases the likelihood of youth participation in agriculture. Moreover, Keija (2008) reported that increasing access to education provides a pathway out of farm to a more remunerative activity. The household size was found significant with positive effect on youth participation in dry season vegetables cultivation in urban centres at 5% level of significance. This indicates that a unit increases in household size increases the probability of youth participation in dry season vegetables cultivation in urban centres in Ondo state by 1.6%. This is not unconnected with the fact that the youth would have to generate more income and work hard to take care of other members of the family thus ensuring household food security. The result of the estimates on farm size was statistically significant with positive marginal effects on youth participation in dry season vegetables cultivation in urban centres at 5% level of significance. This implies that a hectare increases in the farm size increases the probability of youth participation in dry season vegetables cultivation by 0.1%. This is based on the fact that inadequate land access has being a major hindrance to youth participation in agriculture and other allied activities. Access to credit by youth was significant at 5% with positive effects on youth participation in dry season vegetables cultivation. This suggests that increase in access to credit increases the probability of youth participation in dry season vegetables cultivation in urban areas of Ondo State by 0.2%. This is in agreement with Keija (2008) that access to credit increases farmers access to inputs, ability to hire labour and expand scope of operations on the farm. Income realized by youth in the study area was significant with positive marginal effects on participation in dry season vegetables cultivation in

**Table 3.** Result of Logistic Regression Model on factors influencing participation in dry season vegetables cultivation.

Variable	Coefficient	Std. Error	Z- statistic	Marginal Effect
Constant	-1.5741	-	-0.037	-1.2013
Age	0.0059	0.001	0.013**	0.0035
Marital status	1.221	0.002	0.568	0.0021
Educational level	-0.0021	0.015	-0.005**	-0.0473
Household size	0.0184	1.065	0.042**	0.0161
Farm size	0.003	0.023	0.035**	0.0011
Distance	-0.2543	0.107	-0.566	-0.0763
Access to credit	0.0625	1.021	0.011**	0.0024
Income	0.1184	0.032	0.032**	0.0147
Access to input	-1.2471	1.546	-0.563	-0.3712
Extension Service Contact	0.0604	0.349	0.127	0.0164
Log likelihood = -302.218		LRChi2(10)	= 25.46	Psuedo R <sup>2</sup> = 0.482
Observation = 120		Prob >chi2	= 0.000	

Source: Author's Computation, 2016. \*\* significant at  $P \leq 0.05$ .

urban areas. This implies a naira increases in the income realized, increases the probability of youth participation in dry season vegetables cultivation by 1.4%. This is consistent with Agwu et al. (2012) that with agriculture many youth seek for additional income through other livelihood activities.

### Conclusion and recommendations

Youth participation in dry season vegetables cultivation has become prominent in the urban areas of Ondo state. This was target at reducing the rate of unemployment, poverty, idleness and engaging in livelihood activities to better their lots in the cities. The study investigated determinants of youth participation in dry season vegetables cultivation in urban areas of Ondo state, Nigeria. The result showed that respondents' mean age was  $26.7 \pm 4.4$  years, 65.5% were male and 58.6% were married while 43.0% had secondary education. On challenges facing youth in dry season vegetables cultivation, inadequate funding and land, lack of access to credit, among others were identified. The binary logistic regression results on factors influencing youth participation in dry season vegetables cultivation revealed that, age, educational attainment, farm size, income, among others were the significant variables influencing youth participation in dry season vegetables cultivation in the study area. Based on the findings, it is recommended that youths should be given access to skill acquisition and training programmes to enhance adoption of innovation hence increased productivity. Moreover, programmes that will stimulate youth in dry season vegetable cultivation should be promoted to reduce the exit of educated youth from vegetable cultivation business. Youth should be given access to collateral free

loans or credit; land and inputs should be made available through government efforts for the youth to enhance their productivity.

### CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

### REFERENCES

- Adebisi-Adelani, O., Olajide-Taiwo, F. B., Adeoye, I. B., & Olajide-Taiwo, L. O. (2011). Analysis of Production Constraints Facing Fadama Vegetables Farmers in Oyo State, Nigeria. *World Journal of Agricultural Sciences*, 7(2), 189-192.
- Adediji, O. H., & Ademiluyi, I. A. (2009). Urban agriculture and urban land use planning: Need for a synthesis research proposal in Metropolitan Lagos, Nigeria. *Journal Geography and Regional Planning*, 2, 43-50.
- Agboola, A. F., Adekunle, I. A., & Ogunjimi, S. I. (2015). Assessment of Youth Participation in indigenous farm practices of vegetables production in Oyo state, Nigeria. *Journal of Agricultural Extension and Rural Development*, 7(3), 73-79.
- Agwu, N. M., Nwankwo E. E., & Anyanwu, C. I. (2012). Determinants of Agricultural Labour Participation among Youths in Abia State, Nigeria. *International Journal of Food and Agricultural Economics*. 2(1), 157-164.
- Akpan, S. B. (2010). Encouraging Youth Involvement in Agricultural Production and Processing in Nigeria Policy. Note No. 29: *International Food Policy Research Institute*, Washington, D.C.
- Akpan, S. B., Inimfon, V. P., Samuel, U. J., & Damian, I. A. (2015). Determinants of Decision and Participation of Rural Youth in Agricultural Production: A Case Study of Youth in Southern Region of Nigeria. *Russian Journal of Agricultural and Socio-economic Sciences*, 7(43), 35-48.

- Chikezie, N. P., Omokore, D. F., Akpoko, J. G., & Chikaire, J. (2012). Factors Influencing Rural Youth Adoption of Cassava Recommended Production Practices in Onu-Imo Local Government Area of Imo State, Nigeria. *Greener Journal of Agricultural Sciences*, 2(6), 259-268.
- Donye, A., Gwary, M., Nuhu, H., & Zhintswen, A. (2012). Assessment of youth involvement in yam production in Wukari local Government area of Taraba State, Nigeria. *Agriculture and Biology Journal of North America*, 3(8), 311-317.
- Issa, F. O., Obioma, O. D., & Sallau, R. (2011). Assessment of Youth Involvement in Agricultural Production: The case of Sabon-Gari LGA of Kaduna state, Nigeria. *International Journal of Science, Research and Technology in Extension and Education Systems*, 4(1), 163-171.
- Juma, E. A. B., Simiyu, R. R., Kombo, N. P., & Ekisa G. T. (2015). Urban Youths Participation in Vegetables Production in Kakamega Town: Opportunities and Challenges. *Research Journal of Agriculture and Environmental Management*, 4(3), 149-157.
- Keija, D. (2008). Employment and Income Diversification in Rural Uganda: Evidence from the 1999/2000 National Household Survey. Thesis Presented for the Award of the Degree of Doctor of Philosophy in the School of Economics University of Cape Town.
- Kimaro, P. J., Towo, N. N., & Moshi, B. H. (2015). Determinants of Rural Youth's Participation in Agricultural Activities: The Case of Kahe East Ward in Moshi Rural District, Tanzania. *International Journal of Economics, Commerce and Management*, 3(2), 1-47
- National Population Commission (2006). Population Census Data Ondo State, Nigeria: National and State Provisional Total Census. Federal Government Printer, Lagos, Nigeria, 94(21), 175-198.
- Nichols, M., & Hilmi, M. (2009). Growing Vegetables for Home and Market: Diversification Booklet Number 11, Rural Infrastructure and Agro-Industries Division Food and Agriculture Organization of the United Nations, Rome Italy.
- Nnadi, F., & Akwiwu, C. (2008). Determinants of youths' participation in Rural Agriculture in Imo State, Nigeria *Journal of Applied Sciences*, 8(2), 328-333.
- Okunlola, A. I. (2009). Factors associated with Fadama production of vegetables by small- eastern Nigeria: small-scale farmers in Ondo State, Nigeria. Department of Soil Crop and Pest Management, University of Technology, Akure, Nigeria.
- Ruta, E. (2012). Current and Emerging Youths Policies and Initiatives with a special Focus and links to Agriculture Tanzania (mainland) case study draft report. RUTTA: South Africa, p. 5.