

NIGERIAN AGRICULTURAL JOURNAL ISSN: 0300-368X

Volume 54 Number 2, December 2023 Pg. 382-387 Available online at: http://www.ajol.info/index.php/naj https://www.naj.asn.org.ng

<u>()</u> Creative Commons User License CC:BY

Socio-Economic Determinants of Gender Participation among Sweet Potato Farmers in **Anambra State of Nigeria**

Aboajah, F. N. and Ekeledo, P. I.

National Root Crops Research Institute, Umudike Correspondence author's email: <u>aboajahfriday@yahoo.com</u>

Abstract

The study assessed the determinants of gender participation among sweet potato farmers in Anambra State, Nigeria. A total of 120 farmers were selected across the state using a multi-stage sampling technique. Primary data were collected on the socio-economic characteristics and other quantitative variables relevant to the study using a well-structured questionnaire and personal interview. The data were analysed using descriptive statistics, multiple regression technique was used to analyse the determinants of gender participation. Results revealed that 70.8% of males participated in land preparation, while 29.2% took part in the same activity. Results also revealed that 100%, 43.3%, 33.3%, 40%, 53.3% and 31.7% of males participated in mound-making planting, fertilizer application, weeding, harvesting and marketing activities while 0%, 56.7%, 66.7%, 60%, 46.7% and 68.3% women participated in the same activities. Six variables were investigated as the determinants of socio-economic variables affecting gender participation among sweet potato farmers. Five (5) variables were found to be statistically significant as regards the factors influencing personal and socio-economic characteristics among sweet potato farmer's participation. They are age (P < 0.05), level of education (P < 0.05), household size (P < 0.05), farming experience (P < 0.05) and farm size (P < 0.05). It recommends that research and extension should focus on both male and female sweet potato farmers with appropriate techniques to improve participation among sweet potato farmers, which would enhance their income and standard of living.

Keywords: Gender, participation and sweet potato farmers

Introduction

Sweet potato (lpomoea batatas (L) (Lam) is an important secondary food crop for many people whose staple diet is based on cereals, particularly maize (Gakonyo, 1993). It is an important food security crop especially when maize is in short supply or has years of drought (Mutuura et al., 1992). They are rich in beta carotene, a precursor of vitamin A and as such important in alleviating vitamin A deficiency in nutritional disorders (MoA and UNICEF, 1995). Sweet potato is a root crop that is adapted to a wide range of environments and a staple food in Nigeria which produces over 3.5m Metric tons annually (FAO, 2008). Sweet potato is cultivated on 1.03m hectares in Nigeria (FAO, 2007). Njoku (2000) found out that farmers' yields are low (8t/ha) but suggested could be increased up to (30t/ha) with improved management practices. (Woolfe, 1992), said that sweet potato has a high nutritive value and is rich in vitamin A which is only equal to carrot. Sweet potato is an important staple food crop grown for its edible roots and leaves as a protein-rich vegetable orange-fleshed, Sweet potato is grown mainly for food security, and is also bio-fortified, which offers one of the highest sources of B-carotene (Woolfe, 1992). Sweet

potato roots are highly perishable and cannot be stored for a long period after harvesting. (Karuri and Ojijo, 1994). The storage system regularly practised in Nigeria is in-ground storage by which farmers keep unharvested mature Sweet potatoes in the field until they are needed for consumption or sale. (Onwueme, 1982). Traditional storage as underground pits or baskets covered with grasses has been reported in Uganda, Kenya and Malawi (Deverau and Bockett, 1994). High levels of Sweet potato weevil infestation are severe and spoilage is common with these storage methods. Fresh potatoes can be stored for several months using artificial air-conditioned stores (Picha, 1987). However rural farmers cannot afford this expensive technology. Ruralbased cheap and simple storage methods are therefore needed. Sweet potato (Ipomea batatas (L) (Lam) is an important staple food crop grown for its edible roots and leaves as a protein-rich vegetable orange flesh. Sweet potato is grown mainly for food security and cash. The productivity of this important food security crop is relatively inexpensive when compared with other root and tuber crops, and this is attributed to low input requirements, especially land and materials. Sweet potato as a food crop in Nigeria and other parts of the African countries is becoming expensive in urban areas as production has not kept pace with the increase in population leading to demand exceeding supply. Constraints of sweet potato production in Nigeria are high cost of labour, poor market price, post-harvest losses due to pest and disease infestation, scarcity of fertilizer, and herbicides, and high cost of vines among others. There is need to increase the production of sweetpotato production to satisfy local consumption and experts demand to boost foreign exchange earnings. Based on this, this study is investigating the contribution and participation of gender among sweetpotato farmers in Anambra State, Nigeria.

Participation

According to (Guijt, 1991 and Aboajah, 2017), participation means putting responsibility in the hands of farmers to determine, share, enhance and analyse their knowledge of life in their local conditions. This means being accountable, effective and sustainable in their decision-making. Principle participation helps people to help themselves. Participation is defined as a process of equitable and active involvement of all stakeholders, planning, implementation, monitoring and evaluation of development activities (World Bank, 1992). There are levels of participation ranging from sample consultation, joint decision making and selfmanagement by stakeholders themselves (Aboajah, 2017). According to (Montgomery, 1983, Guijt, 1991 and World Bank, 1994), participation is one of the critical components of success.

Gender

Gender refers to the social definition of roles between men and women. Indeed, gender roles and relations exist everywhere, but in varying conditions. There is a gender division of labour in the management of farms in all societies. Gender roles have important implications for the management of farms and technology development. Gender greatly influences the selection of participants and beneficiaries of surveys and experiments.

Most women in rural societies are often primarily responsible for ensuring household food security, health and family continuity. Generally, women are responsible for ensuring sufficient food and medicine all year round. They also engage in the production of Mino crops while men are engaged in major crops. Women are also engaged in storing, processing seeds, and grains, and preparing food ensuring adequate nutrition for all household members. Cash crops especially those for markets are under the control of men.

Methodology

Study Area

The study was carried out in Anambra State. 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. It has an estimated population of close to 5,000,000 million people (National Population Commission, 2006). Anambra state lies at the longitude $6^{\circ}35E$ and $7^{\circ}21E$ and latitudes $5^{\circ}38N$ and 6° 47E (Wikipedia.org/wiki). Anambra State comprises 21 local government areas with mostly farmers, fishermen, craftsmen and traders. Crops planted are majorly sweet potato, yam, cassava, rice cocoyam, vegetables, etc. The major sweet potato-producing areas are Anambra East, Anambra West, Ayamelum, Awka North and Orumba North and South Local Government areas (ASADEP, 2003) Anambra State experiences two distinct seasons. The rainy season and dry season. The rainy season starts from April to last November and the dry season begins late November to March. (Https://nipc.gov.b/Nigeria-states/anambra-state/).

Sample selection

The targeted population for this study was sweet potato farmers in Anambra state. Anambra state comprises of four zones; Awka, Anambra, Aguata and Onitsha zone. Multi-stage sample techniques were used for this study. Anambra Zone was purposively sampled for this study which constitutes Ayanelum and Anambra East blocks. These two blocks were purposively selected based on their popularity in sweet potato production. These circles include Omor, Omasi and Umuobo in Ayemelum block; Aguleri Otu, Nnado, and Igbariam circles in Anambra East. In the block of Anambra East constituting Aguleri Otu, Nnado and Igbariam, 20 farmers were randomly selected making 60 farmers and the same was done in Ayamelum block consisting of Omar, Omasi and Umubo making 60 farms. A total of 120 farmers were used and randomly selected using a structured questionnaire to collect data and personal interviews.

Data Collection

Data were collected using a structured questionnaire and personal interview: three enumerators and two extension agents were used for data collection. Data collection covered the socio-economic characteristics of the farmers, participation involvement of male and female sweetpotota farmers, labour, farm size and sales of sweetpotato.

Analytical Techniques

The data collected were analysed using descriptive statistics and multiple regression equation to determine gender participation among sweet potato farmers in Anambra State.

The model is specified as follows;

- $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots + \beta_6 X_6 + \mu$
- Y= Quantity of sweet potato produced (kg)
- A= Constant Term
- $\beta_1 = \beta_6$ regression coefficients
- $X_1 = Age (years)$
- $X_2 = Sex (male=1, female=0)$
- $X_3 =$ Farm size (in hectares)
- $X_4 =$ Farming experience (years)

 X_s = Household size (number of people in the household)

- $X_6 =$ Level of education (education attainment)
- $\mu =$ Error term

Results and Discussion

Findings in Table 1 revealed that the mean age of

 1 1

sweetpotato farmers was 43 years. This shows that farmers are still in active age. Sixty-nine (69%) of the farmers were male and 31% were female. This implies that male farmers dominated the production of sweet potatoes because of energy-consuming operations like land clearing and ridging. This funding agreed with Oluwatusin and Shitu (2014) that men dominate energyconsuming operations. The study further indicates that 60% were married, 23.3% single and 16.7% widowed. The average size for the households was 4 persons. This reveals that farmers have moderate family size and this is expected to influence sweet potato production positively. Since families constitute a major source of labour in sweet potato production, decisions are made by the family in carrying out field operations. Table 1 reveals that 25% attained primary school education, 42.5% secondary school education, 12.5% had a Diploma, 10.8% first degree and above and 9.2% had no formal education. The farmer's education attainment helped them positively use technologies like fertilizer and agro-chemical which have the potential to increase production. The average farming experience was eight (8) years. This shows that farmers have a lot of experience in sweet potato production. Famers' average farm size per farmer was 2.6ha, which implies that sweet potato farmers are still operating small-scale farming. This agreed with Onyebinama (2014), that farmers with less than 5ha of land as small-scale farmers. Table 1 further revealed that hired labour is 56%, followed by family labour 38.3% and exchange labour 11.7%. This indicates the majority of the labour used is hired which puts a financial burden on the farmers. Majority source their agro-inputs from Open markets 54.2%, input dealers 8.3%, ADP 5.8% and other farmers 31.7%. Forty percent (40%) of the farmers had access to extension agents while 60% had no access to extension agents. About 43.3% had access to credit while 56.7% had no access to credit. Table 1 shows that 46.7% are actual farmers, 10% are civil servants, 23.3% are traders and 20% are pensioners. Finally from Table 1, 45.8% inherited their lands, 20^{\%} purchased, another 20^{\%} rented and 14.2% were given.

Gender Participation among Sweetpotato Farmers

Table 2 reveals the gender participation among sweet potato farmers. The findings showed that 70.8% of men were involved in land preparation while 29.2% of women were involved in the same activity. Ridge making involved only males 100%, while no female was involved in ridge making. The study further reveals that 56.7% of the females were involved in planting activities while 43.3% of males were involved in the same activity. However, the study revealed that 33.3%, 40%, 53.3% and 31.7% of males were involved in fertilizer application, weeding, harvesting and marketing activities. The study further revealed that male farmers participated more in sweetpotato operations compared to females. This study suggests that both male and female sweet potato farmers should be given equal treatment with appropriate technologies and information.

Socio-Economic Determinants Influencing the Gender Participation of Sweet Potato Farmers

Table 3 revealed that the social-economic characteristics of farmers had a significant influence on gender participatory activities [F(9,350) = 28.089;<0.05]. The result showed that the variables jointly predicted farmers' participation ($R^2 = 419$) and jointly accounted for 40.4% variance (adjusted $R^2 = 0.404$) in predicting farmers' participation put together. This implies that other characteristics not taken into consideration in this model may have accounted for the remaining 59.6% variance. Six variables were investigated, and five (5) variables were found to be statistically significant as regards the socio-economic gender participation activities. The contribution of age $(\beta = -190, t = -3.939; P < 0.05), \text{ farm size } (\beta = -0.305; t = -0.305; t$ 6.779; P<0.05), farming experience ($\beta = 0.117$; t = 2.694; P<0.05), household size ($\beta = -0.108$; t = -2.507; P<0.05), level of education (β = -0.202; t = -3.804; P <0.05). Table 3 further revealed the extent of the product of each of the socio-economic characteristics of farmers' participation in activities based on t values. Farm size was the socio-economic characteristics that mostly predicted gender participation and was followed by age, level of education, farming experience and household size. The prediction above revealed that both males and females strongly participated in sweet potato farming activities.

Conclusion

The study concluded that both male and female participants were actively involved in sweet potato farming activities. The males dominated the land clearing, ridge making and harvesting, while the females dominated the planting, fertilizer application, weeding and marketing. Out of six (6) variables investigated, five (5) variables were found to be statistically significant as regards the factors influencing gender participation. They were age (P<0.05), farm size (P<0.05), farming experience (P<0.05), household size (P<0.05), and level of education (P<0.05). It is recommended that gender participatory research should focus attention on both males and females with appropriate technologies to improve participation and enhance their income and standard of living.

References

- Aboajah, F. N. (2017) A Comparative assessment of Farmer's Participation in Growth enhancement Support Scheme in Benue and Nassarawa States, Nigeria. P.hD Thesis. Department of Agricultural Extension and Communication. University of Agriculture, Markudi, Benue State, Nigeria. P. 102.
- Cakmakci, R I., Aydin, D.F. and Sahin, A.F. (2006). Growth promotion of plants by plant growthpromoting rhizobacteria under greenhouse and two different field soil conditions. *Soil Biol Biochem.*, 38: 1482-1487.
- Devereau, A. D. and Bockett. G. N. A.(1994). Sweet Potato storage - is there a need to improve traditional practice? Paper Presented in PRAPACE workshop on sweet potato Germplasm held in

Mukono, Uganda, Aug. 31-Sept. 2, 1994.

- FAO (2008). Production yearbook of Food and Agricultural Organization of United Nations, Rome, Italy.
- FAO (2007). Production yearbook of food and agricultural organization of United Nations, Rome, Italy.
- Gakonyo, N., (1993). Processed sweetpotatoes. Responding to Kenya's Urban Needs. Working paper in Agricultural Economics, Cornell University Ithaca. New York.
- Guijt, I. (1991). Perspective on participation; An inventory of institutions in Africa. London IIED. Retrieved from www.foa.org.accessed on 9th September 2017.
- https://nipc.gov.ng/nigeria-states/Anbambta state/.
- Karuri, E. G. and Ojijo, N. K. O. (1994). Storage studies on sweet potato roots; Experiences with KSP 20 Cultivar, *Acta Horticulture*, 368: 441-452.
- Ministry of Agriculture (Government of Kenya) and UNICEF, country office, (1995). Vitamin A deficiencies in Kenya A report of the National Micronutrient Survey, Nairobi Kenya.
- Montgomery, J. D. (1983). When local participation helps. *Journal policy analysis and management*, 3(1): 90-105.
- Mutuura, J. N., Ewell, P., Abubaku, T., Munga, S., Ajanga, S., Irunga S., Owari, F and Maobe, S. (1992). Sweetpotato in food systems of Kenya. Results of a Socio-economic Survey in J. Kibira P Ewell (Edts). Current research for the improvement of potato and sweetpotato in Kenya. CIP Nairobi.

- Njoku, J. C. (2000). Effect of inorganic nitrogen and potassium on yield of sweet potato (*Ipomea batatas* (L) Lam) in a tropical Utisol M.Sc Thesis. Department of Agronomy, College of Crop and Soil Sciences, Michael Okpara University of Agriculture, Umudike, Abia State Nigeria.
- Onwueme, I. C. (1982). The tropical tuber crops: Yam, Cassava, sweet potato and cocoyams. English Language Book Society and John Wiley and Sons. Chichester, Britain.
- Picha D. H. (1987). Carbohydrate changes in sweet potato during curing and storage. *Journal of American Society for Horticultural Science*, 112: 89-92.
- Woolfe, A. J. K. (1992). Sweet potato: An untapped food resource. Cambridge University Press, Cambridge, U. K.
- World Bank (1992). Agricultural extension systems in some Asian and African countries. Rome: FAO. Economic and social development paper, no. 46. Retrieved from www.worldbank.org.accessed on 5th September, 2017
- World Bank (1994). The World Bank and participation report of the learning group on participation development. Washington, DC. World Bank retrieved from www.worldbank.org.accessed on 7th September, 2017.

VariablesFrequencyPercentage (%)Mean20-30181543 years31-40302543 years31-40384051-601512.561-7097.5Setmathematic set	Table 1: socioeconomic distribution characteristics of respondents. Anambra (n=120)						
20-30181543 years31-40302541-50484051-5048405152.552.561-7097.552.55	Variables	Frequency	Percentage (%)	Mean			
31-40302531-50484051-601512.561-7097.5SecMale7663.3Female4436.7Martial Status33Single2823.3Married2016.7Household2061.70Household2016.7Household204 persons2.44436.75-65.243.3Level of Education119.2Primary3025Secondary5142.5ONDACE1512.5First-degrees and above1310.8Farming Experience110.181-3 years242010-12 years2621.713-15 years2621.7 <t< td=""><td>20-30</td><td>18</td><td>15</td><td>43 years</td></t<>	20-30	18	15	43 years			
41-50484051-601512.561-7097.5Set	31-40	30	25				
51-601512.5Sex	41-50	48	40				
61-7097.5Sex	51-60	15	12.5				
Sec Image: Section of the sectin of the section of the section of the section of the s	61-70	9	7.5				
Male 76 63.3 Female 44 36.7 Martial Status	Sex	-					
Female 44 36.7 Marital Status 30.7 Marital Status 30.7 Single 28 23.3 Married 72 60.0 Widowed 20 16.7 Household 72 60.0 Household 72 60.0 I-2 24 20 4 persons 3.4 44 36.7 4 Sold 44 36.7 4 Sold 24 20 4 persons 3.4 44 36.7 5 Socondary 51 42.5 5 Secondary 51 12.5 5 Secondary 50 62 21.7	Male	76	63 3				
Number Marical StatusNoNoSingle2823.3Married7260.0Widowed2016.7Household11.11-224204 persons3-44436.7S-65243.3Level of Education119.2Primary3025Secondary5142.5OND/NCE1512.5First-degree and above1310.8Farming Experience161-3 years242010-12 years2621.721 years2621.721-1ba18152.6ha.21-3ha8066.74-5ha2218.3Sources of Labour11.1Farming Experience1Faming State218.3Colleation152.6ha.12-1ba18152.6ha.2-3ha8066.72-3ha8066.72-3ha8066.72-3ha8066.72-3ha8066.72-3ha8066.72-3ha8066.72-3ha8066.72-3ha8066.72-3ha90908090909075.89090909075.890909091726092	Female	44	36.7				
Single 28 23.3 Married 72 60.0 Widowed 20 16.7 Household	Marital Status	77	50.7				
Singet 23 2.0. Widowed 20 16.7 Widowed 20 16.7 Household 1 1.2 1-2 24 20 4 persons 3-4 5.6 52 43.3 Level of Education 11 9.2 9.2 No Formal education 11 9.2 9.2 Secondary 51 42.5 9.2 OND/NCE 15 12.5 15 Farming Experience 1 10.8 10.4 Farming Experience 1 12.5 12.5 Farming Experience 16 13 13.15 years 4.6 years 26 21.7 13.15 years 26 21.7 Farm Size 1 1.1 1.2 1.4 1.2 Ci-Iha 18 15 2.6ha. 2.6ha. 2-3ha 80 66.7 2.6ha. Source of Labour 1 1.1.7 1.1 <	Single	28	23.3				
Mathem 12 00.0 Widowed 20 16.7 Household 2 20 4 persons 3-4 44 36.7 4 5-6 52 43.3 5 Evel of Education 11 9.2 5 Primary 30 25 5 Secondary 51 42.5 5 OND/NCE 15 12.5 5 First-degree and above 13 10.8 5 Farming Experience 1 1.2 2 1-3 years 24 20 8 years 4-6 years 26 21.7 1-15 1-12 years 26 21.7 1-15 1-13 years 26 21.7 1-15 1-2 years 26 21.7 1-16 2-3ha 80 66.7 1-12 2-3ha 15 2.6ha. 1-14 1-11 9.2 16.7 1-14 1-	Married	20	60.0				
Materia 20 10.7 Household 1-2 24 20 4 persons 1-2 24 20 4 persons 3-4 56 52 43.3 5-6 52 43.3 10.1 No Formal education 1 9.2 10.1 Primary 30 25 5 Secondary 51 42.5 10.1 OND/NCE 15 12.5 10.1 Farming Experience 12.5 10.1 10.1 Farming Experience 20 16 10.1 10-12 years 26 21.7 13.1 13-15 years 26 21.7 13.1 13-15 years 26 21.7 13.1 13-15 years 26 21.7 13.1 2-3ha 80 66.7 14.1 2-3ha 18 15 2.6ha. 2-3ha 10 8.3 14.1 Source of Labour 10	Widewod	72	16.7				
Household 4 20 4 persons 3-4 44 36.7 4 3-6 52 43.3 5 5-6 52 43.3 5 5-6 52 43.3 5 No Formal education 11 9.2 5 Secondary 51 42.5 5 Secondary 51 42.5 5 OND/NCE 15 12.5 5 First-degree and above 13 10.8 5 Farming Experience 1 10.8 5 Farming Experience 16 7 9 years 24 20 10 10-12 years 26 21.7 10 12 10 12 12 10 12 11 13 15 12 14 12 11 13 13 13 13 14 13 13 14 13 13 14 13 14 13 13 14	Widowed	20	10.7				
1-2 24 20 4 persons 3-4 44 36.7 5-6 52 43.3 Level of Education 1 9.2 Primary 30 25 Secondary 51 42.5 ONDNCE 15 12.5 First-degree and above 13 10.8 Farming Experience 16 7.9 1-3 years 24 20 8 years 4-6 years 20 16 7.9 24 20 16 7.9 7.9 years 24 20 10.12 13-15 years 26 21.7 13 3-15 years 26 21.7 14 13-15 years 26 21.7 15 5-3ha 20 66.7 15 2-3ha 80 66.7 2.6ha. 2-3ha 80 66.7 15 Sources of Labour 15 2.6ha. 2.6ha. Farmily 46 38.3 1.7 Farmily 46 38.3 1.7 Farmily 46 38.3 1.7 ADP 7 5.8 1.5 Open market 60		24	20	4			
5-6 52 43.3 Level of Education 11 9.2 Primary 30 25 Secondary 51 42.5 ONDN/CE 15 12.5 First-degree and above 13 10.8 Farming Experience 13 10.8 Farming Experience 14 20 1-3 years 24 20 8 years 4-6 years 20 16 7-9 years 26 21.7 13-15 years 26 21.7 Farm Size 2 18.3 Curres of Labour 18 15 2-3ha 80 66.7 4-5ha 80 66.7 4-5ha 22 18.3 Sources of Labour 11.7 Farmily 46 38.3 Hired 60 50 Exchange 14 11.7 Sources of Labour 11.7 Farmer 10 8.3 Other farmers 38 31.7 ADP 7 5.8 Open market 65 54.2 Access to credit 11 Yes 52 43.3 No 68	1-2	24	20	4 persons			
5-6 52 43.3 Level of Education 11 9.2 Primary 30 25 Secondary 51 42.5 ONDNCE 15 12.5 First-degree and above 13 10.8 Farming Experience 13 10.8 I-3 years 24 20 8 years 4-6 years 20 16 7 7-9 years 24 20 10-12 years 26 21.7 13-15 years 26 21.7 13-15 years 26 21.7 5-3ha 26 21.7 13-15 years 2.6ha. 2-3-ha 2-3-ha 80 66.7 2-3-ha 2.6ha. 2-3-ha Sources of Labour	3-4	44	36.7				
Level of Education 11 9.2 Primary 30 25 Secondary 51 42.5 ONDNCE 12.5 12.5 Farming Experience 13 10.8 Farming Experience 13 10.8 1-3 years 24 20 8 years 4-6 years 20 16 16 7-9 years 26 21.7 1-13 13-13 years 26 21.7 1-13 13-15 years 26 2.1.7 1-14 13-15 years 26 2.1.7 1-15 2-3ha 80 66.7 - 4-5ha 22 18.3 - Sources of Labour - - - Hired 60 50 - - Source of Ago input - - - - Input dealers 10 8.3 - - - Open market 65 54.2 - -<	5-6	52	43.3				
No Formal education 11 9.2 Primary 30 25 Secondary 51 42.5 OND/NCE 15 12.5 First-degree and above 13 10.8 Farming Experience 13 10.8 Farming Experience 24 20 8 years 4-6 years 20 16 13 7-9 years 24 20 10-12 12 13-15 years 26 21.7 13 15 2.6ha. 13-15 years 26 21.7 14 14 14 14 14 14 14 14 14 15 2.6ha. 2.3ha 2.6ha. 2.3ha 2.6ha. 2.3ha 2.6ha. 2.3ha 2.6ha. 2.6ha. 2.3ha 2.6ha.	Level of Education						
Primary 30 25 Secondary 51 42.5 OND/NCE 15 12.5 First-degree and above 13 10.8 Farming Experience 13 10.8 Farming Experience 14 20 8 years 1-3 years 24 20 16 7-9 years 26 21.7 13-15 years 26 10-12 years 26 21.7 13-15 years 26 2-3 ha 26 21.7 13-15 years 26 2-3 ha 80 66.7 4-5 ha 2.6 ha. Source of Labour - - - - Farmily 46 38.3 - - - - Pout dealers 10 8.3 - - - - - - - - - - -	No Formal education	11	9.2				
Secondary 51 42.5 ONDN/NCE 15 12.5 First-degree and above 13 10.8 Farming Experience 1 10.8 Farming Experience 24 20 8 years 4-6 years 20 16 10.12 7-9 years 26 21.7 13.15 years 26 21.7 13-15 years 26 21.7 13.15 years 26 21.7 13-15 years 26 21.7 13.15 years 26 21.7 2-3ha 80 66.7 2.6ha. 2.6ha. 2-4 Sore of Labou	Primary	30	25				
OND/NCE 15 12.5 First-degree and above 13 10.8 Farming Experience 13 10.8 1-3 years 24 20 8 years 1-4 years 20 16 7 7-9 years 24 20 10-12 years 26 21.7 13-15 years 26 21.7 7 7 7 13-15 years 26 21.7 7 7 7 Farn Size	Secondary	51	42.5				
First-degree and above 13 10.8 Farming Experience 20 8 years 1-3 years 20 16 7-9 years 24 20 10-12 years 26 21.7 13-15 years 26 21.7 13-15 years 26 21.7 Farm Size	OND/NCE	15	12.5				
Farming Experience 24 20 8 years 1-3 years 20 16 7-9 years 20 16 7-9 years 24 20 10-12 years 26 21.7 Farm Size 2 2.6 1-1ha 18 15 2.6ha. 2-3ha 80 66.7 2.3ha 2 4-5ha 22 18.3 3 3 Sources of Labour 14 11.7 3 3 3 Family 46 38.3 3 3 3 3 Sources of Labour 11.7 3	First-degree and above	13	10.8				
1-3 years 24 20 8 years 4-6 years 20 16 7-9 years 26 21.7 13-15 years 26 21.7 13-15 years 26 21.7 13-15 years 26 21.7 13-15 years 26 2.6 2-3ha 80 66.7 2-3ha 22 18.3 Sources of Labour 18 15 Family 46 38.3 Hired 60 50 Exchange 14 1.7 Source of Agro input 11.7 Input dealers 10 8.3 Other farmers 38 31.7 ADP 7 5.8 Open market 65 54.2 Access to extension services 1 Yes 22 43.3 No 72 60 Access to credit 1 1 Yes 52 43.3 No 68 56.7 Occupation 1 1 Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 <	Farming Experience						
4-6 years 20 16 7-9 years 24 20 10-12 years 26 21.7 13-15 years 26 21.7 Farm Size - - <1-1ha	1-3 years	24	20	8 years			
7-9 years 24 20 $10-12$ years 26 21.7 13-15 years 26 21.7 Farn Size - - <1-1ha	4-6 years	20	16				
10-12 years 26 21.7 13-15 years 26 21.7 Farm Size - - 11ha 18 15 2.6ha. 2-3ha 80 66.7 - - 4-5ha 22 18.3 - - Sources of Labour - - - - Family 46 38.3 - - - - Family 46 38.3 -	7-9 years	24	20				
13-15 years 26 21.7 Farm Size - <1-1ha	10-12 years	26	21.7				
Farm Size<1-1ha	13-15 years	26	21.7				
<1-1ha	Farm Size						
2-3ha 80 66.7 4-5ha 22 18.3 Sources of Labour	<1-1ha	18	15	2.6ha			
4-5ha2218.3Sources of LabourFamily4638.3Hired6050Exchange1411.7Source of Agro inputInput dealers108.3Other farmers3831.7ADP75.8Open market6054.2Access to extension servicesYes4840No7260Access to extension servicesYes5243.3No6856.7OccupationFarming5646.7Civil servant1210Trading2823.3Pensioner2420Source of landInherited5545.8Purchased2420Gifted1714.2	2-3ha	80	66.7				
Sources of Labour 10 Family 46 38.3 Hired 60 50 Exchange 14 11.7 Source of Agro input 1 11.7 Input dealers 10 8.3 Other farmers 38 31.7 ADP 7 5.8 Open market 65 54.2 Access to extension services 10 8.3 Yes 48 40 No 72 60 Access to credit 11 11 Yes 52 43.3 No 68 56.7 Occupation 12 10 Trading 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land 11 11 Inherited 55 45.8 Purchased 24 20 Gifted 17 14.2	4-5ha	22	18.3				
Family 46 38.3 Hired 60 50 Exchange 14 11.7 Source of Agro input	Sources of Labour		1010				
Hired 60 50.5 Hired 60 50 Exchange 14 11.7 Source of Agro input 11.7 Input dealers 10 8.3 Other farmers 38 31.7 ADP 7 5.8 Open market 65 54.2 Access to extension services 72 60 Yes 48 40 No 72 60 Access to credit 72 60 Yes 52 43.3 No 68 57 Occupation 7 7 Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land 7 145.8 Inherited 55 45.8 Purchased 24 20 Gifted 17 14.2	Family	46	38 3				
Ind 50 50 Exchange 14 11.7 Source of Agro input 10 8.3 Input dealers 10 8.3 Other farmers 38 31.7 ADP 7 5.8 Open market 65 54.2 Access to extension services 72 60 Yes 48 40 No 72 60 Access to credit 72 60 Yes 52 43.3 No 68 56.7 Occupation 68 56.7 Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land 11 11 Inherited 55 45.8 Purchased 24 20 Gifted 17 14.2	Hired	60	50.5				
Source of Agro input 11 11 Input dealers 10 8.3 Other farmers 38 31.7 ADP 7 5.8 Open market 65 54.2 Access to extension services 72 60 Yes 48 40 No 72 60 Access to credit 72 60 Yes 52 43.3 No 68 56.7 Occupation 68 56.7 Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land 24 20 Inherited 55 45.8 Purchased 24 20 Gifted 17 14.2	Exchange	14	11.7				
Source of Agro input Input dealers 10 8.3 Other farmers 38 31.7 ADP 7 5.8 Open market 65 54.2 Access to extension services	Source of Agra input	14	11.7				
Input dealers 10 6.3 Other farmers 38 31.7 ADP 7 5.8 Open market 65 54.2 Access to extension services 72 60 Access to credit 72 60 Access to credit 72 60 Yes 52 43.3 No 68 56.7 Occupation 72 10 Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 20 20 Source of land 74 20 Rented 24 20 Gifted 17 14.2	Input dealers	10	8.2				
ADP 7 5.8 Open market 65 54.2 Access to extension services 72 60 Yes 48 40 No 72 60 Access to credit 7 7 Yes 52 43.3 No 68 56.7 Occupation 7 7 Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land 1 1 Inherited 55 45.8 Purchased 24 20 Gifted 17 14.2	Other formers	10	0.5				
ADP 7 3.8 Open market 65 54.2 Access to extension services 72 60 Yes 48 40 No 72 60 Access to credit 72 72 Yes 52 43.3 No 68 56.7 Occupation 72 10 Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land 11 11 Inherited 55 45.8 Purchased 24 20 Gifted 17 14.2		30 7	51.7				
Open market 63 34.2 Access to extension services 48 40 No 72 60 Access to credit 52 43.3 Yes 52 43.3 No 68 56.7 Occupation 68 56.7 Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land 11 11 Inherited 55 45.8 Purchased 24 20 Rented 24 20 Gifted 17 14.2	ADF Onen merket	1 65	5.0 54.2				
Access to extension services Yes 48 40 No 72 60 Access to credit		03	34.2				
Yes4840No72 60 Access to credit72Yes52 43.3 No 68 56.7 Occupation72Farming 56 46.7 Civil servant12 10 Trading 28 23.3 Pensioner 24 20 Source of land75 45.8 Purchased 24 20 Rented 24 20 Gifted 17 14.2	Access to extension services	40	40				
No 72 60 Access to credit	Yes	48	40				
Access to credit Yes 52 43.3 No 68 56.7 Occupation 56 46.7 Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land 55 45.8 Purchased 24 20 Rented 24 20 Gifted 17 14.2	No	12	60				
Yes 52 43.3 No 68 56.7 Occupation $-$ Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land $-$ Inherited 55 45.8 Purchased 24 20 Rented 24 20 Gifted 17 14.2	Access to credit		12.2				
No 68 56.7 Occupation	Yes	52	43.3				
Occupation Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land 10 Inherited 55 45.8 Purchased 24 20 Rented 24 20 Gifted 17 14.2	No	68	56.7				
Farming 56 46.7 Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land 10 Inherited 55 45.8 Purchased 24 20 Rented 24 20 Gifted 17 14.2	Occupation						
Civil servant 12 10 Trading 28 23.3 Pensioner 24 20 Source of land 55 45.8 Purchased 24 20 Rented 24 20 Gifted 17 14.2	Farming	56	46.7				
Trading 28 23.3 Pensioner 24 20 Source of land	Civil servant	12	10				
Pensioner2420Source of land7545.8Inherited5545.8Purchased2420Rented2420Gifted1714.2	Trading	28	23.3				
Source of landInherited5545.8Purchased2420Rented2420Gifted1714.2	Pensioner	24	20				
Inherited 55 45.8 Purchased 24 20 Rented 24 20 Gifted 17 14.2	Source of land						
Purchased 24 20 Rented 24 20 Gifted 17 14.2	Inherited	55	45.8				
Rented 24 20 Gifted 17 14.2	Purchased	24	20				
Gifted 17 14.2	Rented	24	20				
	Gifted	17	14.2				

Source: field survey, 2022

 Table 2: Participation according to Gender among Sweetpotato Farmers in Anambra State

	Male		Female	
Activities	Frequency	%	Frequency	%
Land preparation	85	70.8	35	29.2
Ridge making	100	100	0	0
Planting	52	43.3	68	56.7
Fertilizer application	40	33.3	80	66.7
Weeding	48	40	72	60
Harvesting	64	53.3	56	46.7
Marketing	38	31.7	82	68.3

Source: field survey, 2022

 Table 3: Multiple regression analysis of the determinants of socio-economic variables of gender participation of sweet potato farmers in Anambra State

	Unstandardized coefficients	Standardized coefficients		
Variables	В	STD Error	Beta	Т
Constant	31.194	3.351		9.308
Age	0591	0.150	0190	-3.939*
Sex	-1.194	0.712	0078	-1.677
Farm size	-2.285	0.337	0305	-6.779*
Farming experience	0.485	0.180	0117	2.694*
Household size	0602	0.240	0108	-2.507*
Level of Education	-1.307	0.343	0202	-3.804*

Source: field survey, 2022. $R^2 = 0.419$, Adjusted $R^2 = 0.404$

* denotes the level of significance at 0.05