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MARKET PARTICIPATION BEHAVIOUR AMONG URBAN OKRA PRODUCERS IN OJO LOCAL GOVERNMENT AREA, LAGOS STATE, NIGERIA

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ABSTRACT

The study examined market participation behaviour among urban okra producers in Ojo Local Government Area, Lagos State, Nigeria. A two-stage sampling procedure was adopted in selecting 120 vegetable farmers during the dry season extending from November to March 2018/2019. Data on socioeconomic and demographic characteristics, farm-specific factors, and marketing and production output activities were collected using a well-structured questionnaire. Data collected were analysed using descriptive statistics (such as mean, standard deviation and percentage) and a Tobit regression model. Most of the urban farmers were young and educated and in their economic active age. The mean market share of okra marketed by the respondents was 7,662.17kg (representing 89.8% of okra produced). Sex, primary occupation, per capita land size, cost of seed, price of okra per unit, distance to nearest market and cost of labour significantly determined market participation ($p<0.05$). The study recommends policies that facilitate access to production resources like land, seed or planting material and farm labour at lower costs. The land policy that makes access to marginal land in an urban area available for agriculture should be as a form of empowerment to the vulnerable in society. Also, upgrading farm-to-market roads to reduce transportation costs to distant urban markets which offer better prices and encourage farmers to produce more marketable produce.

Keywords: Farm Labour, Market, Production Resources, Vulnerable, Tobit Regression

INTRODUCTION

The agricultural sector is an important economic sector in developed and more importantly, developing economies. Its vital role in the economic growth and development of most developing countries in Africa lies in its multiple roles as a source of food, industrial raw materials, and consequently a catalyst to rapid industrialisation and employment to the increasing and urbanising population. In Nigeria, agriculture is the mainstay of the economy and as such a major component in the economic transformation agenda of the government.

In urban and peri-urban areas of developing countries, smallholder agriculture is commonplace. However, defining smallholder farmers in terms of their cultivable land area has been contentious among researchers. Girei *et al.* (2018) defined smallholder farmers as people with landholdings of less than 10 hectares while Otekunrin *et al.* (2019) described them as those farming on less than two hectares of cropland. However, the common characteristics of smallholder farmers are their small landholdings, dependence on agriculture for their livelihood, high dependence on household labour for production and minimal use of improved technology.

In agriculture, there should exist an integration of farmers in both the input and output markets. This integration is termed market participation. Otekunrin *et al.,* (2019) described market participation as market-related activity which encourages the sale of produce, as the individual farming household's or commercialisation. Jagwe *et al.* (2010) described it as the integration of subsistence or semi-subsistence farmers into the inputs and output markets of agricultural products, with the aim of boosting their income level resulting in poverty reduction. Concepts like market orientation and commercialisation are integral to market participation. Although the concept of market orientation is more applied in industrial marketing than in agricultural marketing, Boughton *et al.,* (2007) defined market orientation in agriculture as the degree of allocation of agricultural resources (land, labour and capital) to the production of agricultural produce that are meant for exchange or sale.

A major obstacle or constraint deterring market participation is the transaction costs (Otekunrin *et al.*, 2019). Transaction costs are hidden costs arising from the frictions involved in the exchange process. Transaction costs to a large extent may explain why some farmers participate in markets while others are simply self-sufficient. Apart from transaction costs, Mmbando *et al.* (2015) observed that poor market access is also another major impediment in the market participation of smallholder farmers in most sub-Saharan African countries. The smallholder farmer can therefore only access the market either by selling to a buyer at the farm gate or by physically transporting the produce to the marketplace using available means, most of which are very difficult to traverse with the highly perishable agricultural produce. Vegetables are one of the most perishable and fast deteriorating agricultural produce, with

little or no shelf life. Yet, access to market participation opportunities for the small vegetable growers remains a major problem for small value chain players in the vegetable sub-sector (Sumari *et al.,* 2018).

Okra (*Abelmoschus esculentus*) is an important vegetable grown for food and income in Nigeria. It is a vegetable commonly grown in peri-urban areas because of growing urban dwellers' preferences for the consumption of fresh vegetables and nutritious diet; as well as increased online awareness on the health benefits of consuming fresh okra. It is a major source of valuable vitamins, protein and carbohydrates in human diets, for building and repairing the body tissue as well as a source of income spreading to the producers, labourers, and marketers (Yahia, 2017; Ekunwe *et al.,* 2018). Improving market participation for small-scale okra producers has a great potential of improving their incomes, enhancing the availability of the desired vegetable and elucidating the job potentials inherent in okra production and marketing.

Farinde *et al.* (2006) explained that the economic potentials of okra can be maximized if adequate opportunities are deployed for farmers to harness its abundance supply during the peak season using proper processing, preservation, marketing and utilisation of okra is necessary to arrest the wastage being experienced during the peak season. This will enhance the standard of living of the okra market participants in Nigeria just like in countries like Niger, where okra is a major cash crop (Zakari, *et al.,* 2014). Active and vibrant market participation among smallholder farmers will usher in a structural transformation in the agricultural sector, which is the crux of the Agricultural Transformation Agenda. Thus, in most urban areas, smallholder farmers are now increasing production beyond their domestic need to have a marketable surplus. This is important to diversify their livelihoods and ensure food security (Abafita *et al., 2*016*; Guta et al.,* 2020).

Based on this background, this study assessed the market participation behaviour among urban okra producers in Ojo Local Government Area, Lagos State, Nigeria. Specifically, the study determined the mean quantity of okra produced and sold by farmers per cropping season; and analyzed the determinant of the extent of market participation of okra producers in the study area.

METHODOLOGY

Study area

Ojo Local Government Area (LGA), is one of the twenty local government areas in the commercial city of Lagos State, Nigeria. Ojo Local Government Area is an urban area situated in the Badagry Administrative Division of the state. The area harbours a large population of urban vegetable farmers whose market target are the city's dwellers with farm-

fresh vegetables. The Local Government Area lies entirely within the southern rainforest zone of the humid tropics. It is a major motorway access (the Lagos-Badagry highway) with a relatively low land value, and an abundance of urban vegetable producers (Ezedinma and Chukwuezi, 1999). The Alaba international market and the Lagos state trade fair complex are located within the area. Ojo local government area is divided into four municipalities, namely, Amuwo-Odofin, Iba, Mile 2 and Ojo. The crops grown by the farmers are mainly vegetables such as okra, celosia, lettuce, *Corchorus olitorius Amaranthus [L.] spp* etc.

Sampling procedure

The unique position of Ojo Local Government Area within the highly commercialized and densely populated city of Lagos, necessitated its purposive selection for this study. Primary data for this study were obtained using a multistage sampling technique. The first stage of the sampling was the stratification of urban city into areas predominantly occupied by vegetable farmers based on the information obtained from Lagos State Agricultural Development Project (ADP). The second stage was the random selection of four communities in the vegetable production area. These communities were Iyana-Iba, Volkswagen/Ojo, Festac Town and Satellite Town. Information was obtained from 120 randomly selected okra farmers from the list of registered okra farmers using a structured questionnaire. Information on socioeconomic/demographic characteristics, farm-specific factors, marketing, and farm input and output activities were collected using a structured questionnaire. The analytical tools used for this study were descriptive statistics (such as tables, frequencies, mean and percentages) and the Tobit model.

Methods of data analysis

The respondents' socioeconomic characteristics were profiled using descriptive statistics. The extent of respondents' market participation was calculated as the proportion of the value of crop sales to the total value of crop production (Kumara et al, 2015).

$$Market\ participation = \frac{\text{Total value of crop sales (Naira/hectare)}}{\text{Total value of crop production (Naira/hectare)}} \ldots\ldots\ldots\ldots\ldots (1)$$

Given the nature of market participation level, the farmers were said to be market participants if their proportion of value sold is more than 75% (Osmani and Hossain, 2015)

Tobit regression model as used by Osmani and Hossain (2015) was used to assess the extent of the market participation by respondents. The Tobit model assumes that zero values associated with nonparticipation are outcomes of a rational choice—that is, corner solutions—the sample selection model explains nonparticipation using prohibitive transaction costs and

other factors (Amao and Egbetokun, 2018). The model assumed normal distribution with constant variance. The observed percentage of output Y_i^* that was sold in the market was used as a relevant proxy for the level of market participation.

$$Y_i^* = \beta_i X_i + \mu_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where:

Y_i^* = percentage of output that is sold,

β_i = a vector of the parameters to be estimated,

X_i = the explanatory variables

μ_i = the error term.

Y_i^* assumes a zero value when a respondent has no surplus to sell but has excess demand on the commodity.

The explanatory variables included:

X_1 = Sex, X_2 = Age of farmer (years), X_3 =Age squared of farmer (years)^2, X_4 = Years spent in school of farmer (year), X_5 = Primary occupation (Farming =1, 0 = Othewise), X_6 = Per capita farm size (This is defined as ratio of land size to household number) (Ha), X_7 = Membership of cooperative (Yes=1, No=0), X_8 = Cost of seed planted (Naira), X_9 = Price of okra per unit (Naira/basket), X_{10} = income from non-okra production (Naira), X_{11} = Distance to the nearest market (Km), X_{12} =Labour cost (Naira), X_{13} =cost of fertilizer (Naira)

RESULTS AND DISCUSSION

The socioeconomic characteristics of respondents presented in Table 1, shows that 75.8% of urban farmers were male. This shows that female involvement in urban okra farming is low. The result also shows that 62.5% of respondents were in the age bracket (30-40) years while only 18.3% of the respondents had an age greater than 40 years. The average age of the respondents of 34 years, was within the economic active age advantageous in carrying out the rigour of production and marketing efficiently. The result indicated that most of the respondents (82.5%) were educated. Education helps farmers to interact and participate in the market and also to process and interpret vital marketing information that can increase their marketing share.

Table 1: Socioeconomic characteristics of the respondents

Variable	Percentage(n= 120)
Gender	
Male	75.8
Female	24.2
Age (Year)	
Less than 30	19.2
30-40	62.5
Greater than 40	18.3
Mean= 34.2, SD=2.4	
Marital status	
Otherwise	35.0
Married	65.0
Educational status	
No formal	17.5
Primary	22.5
Secondary	12.5
Tertiary	47.5

Source: Field Survey, 2019

The mean output of okra produced and marketed by respondents per cropping season (per hectare is presented in Table 2. The result showed that an average of 8532.48kg of okra were produced by the respondents per cropping season. About 7,662.17kg representing 89.8% of okra was the respondents' market share while only 750.86kg (8.8%) of the total okra produce was consumed while the remaining 119.45kg (1.4%) accounted for the post-harvest losses.

Table 2: Mean output of okra produced and marketed per cropping season per hectare

Items	No of basket (60kg)	Quantity (kg)	Std. Dev	Percentage(%)
Average quantity of okra harvested (kg)	142.208	8532.48	500.54	100.0
Average quantity of okra consumed (kg)	12.510	750.86	112.65	8.8
Average quantity of okra sold(kg)	127.702	7662.17	781.02	89.8
Postharvest losses (kg)	1.990	119.45	50.11	1.4

Source: Field survey, 2019

The result of the determinants of the extent of market participation of respondents is presented in Table 3. The explanatory variables that significantly explained the market participation of respondents included sex, primary occupation, per capita farm size, cost of seed planted, cost of okra per basket, distance to the nearest market and cost of labour. The result showed that being male increased the market participation of respondents by 0.12%. This result is in agreement with Aku *et al.* (2018) and Amao and Egbetokun (2018) that smallholder vegetable farmer market access is strongly associated with socioeconomic characteristics and male-headed households had a higher probability of market access than females as he takes the decisions on sales. The primary occupation of the respondents has a positive sign and significantly affected the market participation by respondents. The result showed that having farming as a primary occupation increased market participation by 42.6%. In terms of factors that could enhance the market participation by respondents. The study revealed that a percentage increase in farm size will lead to a 12.9% increase in the extent of market participation. This could be due to the role of farm size in boosting total production level and thus sales of surplus produce. The result showed that the area of farmland available per person will determine the output and marketing volume of the farmer. This could be due to the role of farm size in boosting total production level and thus sales of surplus produce.

The cost of seed planted significantly decreased market participation by 23.7%. On the other hand, the price of okra per unit is positive and significant at the 5% level. The result shows that a naira increase in the price of planting seeds increased the likelihood of producer participation in marketing by 4.3%. The positive relationship showed that the likelihood of selling okra is higher when the market price of the product is high. The result supports Kyaw *et al.,* (2018) that higher market prices encourage the farmers to produce more and increase the proportion of products to be sold in the market. Distance to the nearest market is negative and significantly affected the market participation of the respondents. The result shows that a kilometre increase in the distance to the nearest market decreased the extent of market participation by 50.8%. This is in agreement with Kyaw *et al.,* (2018) that the longer the distance to the market lower the number of products that the farmers will sell in the market. The result also confirms Guta *et al.,* (2020) that an increase in distance of farmers' residence from the marketplace decreases the probability of participation in okra marketing, all other factors held constant. On the other hand, labour cost was negative and significantly influenced the level of market participation of urban okra farmers. A unit increase in the cost of labour leads to a decline in the number of labour that can be hired by farmers for marketing production output by 4.3%.

Table 3: Determinant of the extent of market participation of respondents

Variable	Unit	Marginal effect	T value
Sex	Male=1, 0 =otherwise	0.12124	4.69**
Age	Year	0.02647	0.70
Age^2	$Year^2$	-0.00028	-0.54
Years spent in school	Year	0.00651	0.86
Primary Occupation	Farming=1,0 =otherwise	0.42574	3.99**
Per capita farm size	Hectare/person	0.12933	3.14**
Membership of cooperative	Yes =1, No=0	-0.03714	-0.54
Cost of seed planted	Naira	-0.23716	-2.67**
Price of okra per unit	Naira/kg	0.043211	3.32**
Income from secondary occupation	Naira	0.00092	0.56
Distance to the nearest market	Km	-0.50820	-2.31**
Cost of labour	Naira	-0.04344	-4.81**
Cost of fertilizer	Naira	-0.00082	-0.20
Pseudo R^2		0.541	
Log-likelihood		-55.61	
Sigma		0.122	
Chi^2		0.000	

Source: Field survey, 2019. Note: ** significant at 5%

CONCLUSION AND RECOMMENDATIONS

Most farmers in urban areas produce small quantities of a relatively high perishable agricultural products that can be marketed and earn some income. The okra producers sell their farm produce mainly in urban markets at lucrative high prices. The market share of okra producers was high as a result of income that could be accrued to them and very little was available for home consumption. However, the extent of participation was mainly affected by sex, primary occupation, per capita farm size, cost of seed planted, cost of okra per unit, distance to the nearest market and cost of labour. Per capita farm size affected the extent of market participation of urban farmers by making them compromise on their agricultural productive capacity and consequently, limit their ability to exploit available market opportunities for their products.

This study therefore recommends:

i. Government support policies that facilitate access to production resources like seed or planting material and farm labour at lower costs.
ii. Land policy that makes access to marginal land in urban areas available for agriculture as a form of empowerment to the vulnerable urban farmers.
iii. priority issues for urban development should include the establishment of more market outlets closer to farms to ease the movement of produce.

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