Journal of Economics and Sustainable Development
ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online)
Vol.5, No.1, 2014

Determinants of Market Participation by Maize Farmers in Ondo State, Nigeria

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Abstract
Smallholder farmers' performance of marketing functions in Nigeria is very low despite the fact that there are invaluable benefits associated with market orientation and favourable trends in agricultural commercialization. This is the motivation for this study, which analyses market participation by maize farmers in Ondo State, Nigeria. The objectives of the study are to assess the extent of commercialization of agriculture in the rural and peri-urban areas, determine the factors that influence the degree of commercialization among households, identify the constraints facing the respondents in the study areas and carry out a policy simulation and analysis of market participation by maize farmers in the study area. The sample size for this study was 80 maize farmers from both rural and peri-urban areas by employing multistage sampling technique. Data collected were analysed using descriptive statistics, truncated regression analysis and chow- test. The study revealed that the extent of agricultural commercialization in rural area (66.6%) was higher than that of peri-urban (65%) area in maize enterprise. It was observed that age of the household head, experience of the household head, cropping system, quantity of harvested output, farm size, land tenure and unit price of output had significant (5% and 1% significant level) influence on the intensity of market participation by maize farmers in rural and peri-urban areas of the State. As revealed from the study, some of the constraints facing majority of the maize farmers in the State covering rural and peri-urban areas were insufficient capital, high cost of transportation, poor road network, poor storage facilities, lack of credit facilities, inadequate agricultural inputs. It could be concluded that the extent of commercialization in both rural and peri-urban areas were not high enough, which calls for the attention of all the concerned parties (government and individuals) to put in place measures that will critically improve the extent of agricultural commercialization in the study area. In order to enhance market participation of maize farmers, well equipped market centers in various villages should be established by government and private individuals.
Keywords: Commercialization, Market Orientation, Marketing, Peri-urban Area, Rural Area, Simulation, Truncated Regression

1. Introduction

Agriculture is the bed rock of every nation and the major reason for this is the role it plays in providing food for the populace, employment opportunities, export revenue and contribution to the nation's Gross Domestic Product (GDP). Agricultural sector of Nigerian economy greatly depends on smallholder farmers as they contribute significantly to food and fiber production.

For most economies in Africa, agriculture remains a critical sector for attaining economic growth. However, to make a significant contribution to economic growth, the sector needs to be commercialized to enable smallholder farmers to participate in markets. Such participation is expected to have a positive impact on their incomes and thus enhance their livelihoods. Markets and improved market access for poor rural households are therefore a prerequisite for enhancing agriculture-based economic growth and increasing rural incomes. Intensification of production systems and increased commercialization must be built upon the establishment of efficient and well-functioning markets and trade systems that keep transaction costs low, minimize risk and extend information to all actors, particularly those living in areas of marginal productivity and weak infrastructure (IFAD, 2003;World Bank, 2008).

Commercializing smallholder agriculture is an indispensable pathway towards economic growth and development for most developing countries relying on the agricultural sector (von Braun 1995; Pingali and Rosegrant 1995; Timmer, 1997). As the agricultural sector in developing countries transforms towards commercialization, smallholder farmers require systems that are responsive to their needs: access to markets, market information, market intelligence and effective farmer organization (Jagwe, Machethe and Ouma, 2010).

The importance of maize cannot be overemphasized, with Nigeria producing 43% of maize grown in West Africa. Maize is the most important staple food in Nigeria. It accounts for about 43% of calorie intake (Nweke *et al*., 1983; NARP, 1994). Maize has consumption quantity of 53.20 g/capital/day (FAOSTAT, 2007). Onuke, *et al*.,(2010) consolidated the importance of maize by stating that maize is one of the most abundant food crops in Nigeria. About 80% is consumed by man and animals, while 20% is utilized in variety of industries processes for

production of starch, oil high fructose, corn sweetener, ethanol, cereal and alkaline.
Maize production in Nigeria has not been sufficient enough to meet the needs of people and livestock. Supply has not been able to meet demand despite the introduction of improved packages (Babatunde *et al.,* 2008). Smallholder agriculture contributes greatly to the national income, employment, foods and nutrition in Nigeria. However, the market participation of the smallholder farmers is very low despite the fact that there are benefits of market orientation and favourable trends in the commercialization of agriculture. The major challenge now in Nigeria is the inability of the smallholder farmers and other rural farmers to benefit from commercialization by participating in the market.
This study would facilitate implementation of better development programmes that enhance market participation as it analysed agricultural market issues. Therefore, this study set to assess the extent of commercialization of agriculture in the rural and peri-urban areas, determine the factors that influence the degree of commercialization among households, identify the constraints facing the respondents in the study areas and carry out a policy simulation and analysis of market participation by maize farmers in the study area.

2. Methodology

2.1 Study Area

This study was conducted in Ondo State, Nigeria. The state lies between longitudes 4^0 30" and 6" East of the Greenwich Meridian, 5^0 45" and 8^0 15" North of the Equator. Its land area is about 14,788.723 Square Kilometres (km^2). This means that the state lies entirely in the tropics. Ondo State is bounded in the North by Ekiti/Kogi States; in the East by Edo State; in the West by Osun and Ogun States, and in the South by the Atlantic Ocean. (Ondo State Government, 2011).
The major occupation of the populace in the State is farming and the agro-climatic condition is suitable for cultivation of many tropical crops. Most of the inhabitants are small scale farmers with few of them practising farm mechanization in large scale. The farmers cultivate both arable and cash crops. The cash crops cultivated include, Cocoa, Rubber, Kola nut and Palm trees, while the arable crops cultivated include yam, maize, cassava, cocoyam, sweet potatoes and vegetables.

2.2 Data Sources and Data Collection

Primary data were collected by the means of well-structured questionnaire. This structured questionnaire was painstakingly administered in order to obtain the needed data for the study in the study area. Multi-stage sampling technique was used in the sampling procedure. In the first stage, purposive sampling technique was employed to select eight out of eighteen Local Government Areas of the State that are prominent in the cultivation of maize. In the second stage, stratified sampling technique was used to separate each of the LGAs into rural and peri-urban areas in order to separate the two areas. Then, the lists of maize farmers in the above-mentioned Local Government Areas were collected from the Agricultural Development Programme of Ondo State. In the third stage, ten farmers were randomly selected from each of the LGAs based on the list collected from the Agricultural Development Programme office. The randomly selected farmers covered both peri-urban and rural areas of each of the LGAs in ratio 1:1. In all, the total of eighty respondents were interviewed i.e 40 respondents from rural area and 40 respondents from urban area.

2.3 Analytical Techniques

Descriptive Statistical analysis like frequency and percentage and Truncated Regression Analysis were used in the study. Also, Chow test was carried out to establish whether data from both areas were significantly different.

2.4 Model Specification

2.4.1 Truncated Regression Model

To determine the factors that influence the degree of commercialization among households or output that is actually sold in the market, Truncated Regression Analysis was carried out. The mathematical notation for the analysis is presented below:

$$Y_i = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11}\ b_{12}X_{12} + b_{13}X_{13} + \mu_i$$ .....equation 1

Where
Y = The percentage of maize output that is sold by household, X_1=Age of the household head, X_2 = Gender of the household head, X_3 = Education level of the household head, X_4 =Household size, X_5 =Proportion of non-farm income in total monthly household income in Naira, X_6 = Total quantity of output produced per hectare in a season in Kilograms, X_7 = Average farm size of the household in Hectares, X_8 = Market information source/arrangement, X_9 = Average price at which each unit of output is normally sold in Naira, X_{10} = Type of farming practice, X_{11} = Land tenure, X_{12} = Average distance from farm to main point of sale in Kilometer, X_{13} = Years of farming and μ_i =Error term
Omiti, *et al.,* (2009) stated that because of the predetermined selection of only market participants in this study,

the data collected do not allow use of selectivity models such as those applied in similar studies by Goetz (1992), Omamo (1998) and Lapar *et al*. (2003). A zero value of Y_i* is observed when a household has no surplus to sell but has excess demand on the commodity. On the other hand Y_i* = 100 if a household sells all output.

2.4.2 Chow Test for Non-separability of Data

To test whether data from both rural and peri-urban areas were significantly different, Chow test was carried out as used by Chow, (1960). The mathematical notation for the test is presented as below;

$$H_0 : \beta_R - \beta_P = 0$$

Where

β_R = the coefficient estimate for rural area,

β_P = the coefficient estimate for peri-urban area

In order to constitute the Chow test, three separate linear regressions were estimated such that the first one was for pool data (i.e whole sample from rural area and peri-urban areas), second for rural area and third for peri-urban area. F- test was formulated by using residual sum of squares (RSS) for the restricted (i.e whole sample) and unrestricted (i.e subsample) models. The mathematical equation is given as follows;

$$F^* = \frac{RSS_W - (RSS_R + RSS_P)}{(RSS_R + RSS_P)} * \frac{(T - 2K)}{K} \quad \text{…….. equation 2}$$

where F* is the test statistic

RSS_W = residual sum of squares for the whole sample

RSS_R = residual sum of squares for the rural sample

RSS_P = residual sum of squares for the peri-urban sample

T = total number of observations in the whole sample

K = number of regressors (including the intercept term) in each unrestricted subsample regression

$2K$ = number of regressors in both unrestricted subsample regressions (whole sample).

The computed F* value for maize was compared with the value of $F(K, T-2K)$ at the 5% level of significance. Since the computed test statistic was less than F-Tabulated for maize, the null hypothesis was accepted and it was concluded that there is no significant difference between the data collected from rural and peri-urban areas (Table 3). Therefore, a whole regression model was estimated for the rural and peri-urban data. Separate regression models were also estimated to compare coefficients with those derived from the whole regression sample.

3. Results and discussion

3.1 Socioeconomic Characteristics of the Respondents

The distribution of the respondents by gender indicated that majority (74%) of maize farmers in the study area were males, while the remaining 26% of the respondents were females. One of the reasons for this scenario could be the laborious nature of agricultural activities which made females to distance themselves from on-farm activities.

About (65%) of the respondents were between ages 41 and 60 years old, while 20% were between the ages 21 and 40 years old. This indicates that majority (85%) of the respondents were less than 60 years old. This suggests that most of the respondents were relatively young and are full of vigor and strength to carry out high labour demanding nature of farming activities. This is expected to assist in the degree of agricultural commercialization in the study area.

Majority (76.2%) of the respondents were married, while 13.8% were widowed. This shows that majority of the farmers in the study area were married. This will afford them the opportunity of getting family labour to be used on the farm, thereby, probably leading to enhancement of market participation by the maize farmers.

The distribution of education level of the respondents indicates that majority (92.5%) of the farmers in the study area had one form of education or the other which could assist them in the area of adoption of innovations brought to them by the extension agents and in making decisions that will enhance their marketing strategies. This is expected to help them in obtaining necessary information on ways of shifting to commercialization of their produce.

Majority (92.5%) of the respondents harvested between 1 and 5,000kg of maize output, while the remaining 7.5% harvested between 5,001 and 10,000kg of maize output. This means that the quantity of output produced by the majority of the farmers was very small, which may explain reasons for the inability of the farmers to increase their market participation. This could also be linked to various problems encountered by the farmers in agricultural production.

Table 1 indicates that majority (90%) of the respondents had farm size of between 0.01 and 1.20 hectares of land, while the remaining 10% had farm size of between 1.21 and 2.40 hectares of land. Some 45% of the respondents

had between one and five household members, while 40% had between six and ten household members. This shows that majority of the respondents had household size of between 1 and 10 members in the study area. It may be concluded that farmers in the study area would have enough access to the use of family labour, which would enhance their production. Although, the more they are in the family the more mouths to feed.

The distribution of total non-farm income of the household in Figure 1 shows that 60% of the respondents made non-farm income of between ₦50,001 and ₦ 100,000, while 15% made no non-farm income. This implies that majority of the households were making low incomes from non-farm activities. This shows low level of diversification of means of livelihood in non-farm activities by maize farmers in the State.

Many (60%) of the respondents sourced for market information through the combination of public and private institutions (Radio and Television), friends and neighbours, while 13 % of the respondents sourced for market information from friends only. This may lead to the fact that majority of the farmers will have access to timely information on market dynamics since they combined radio, television, friends and neighbour together.

3.2 Extent of Agricultural Commercialization for Maize Enterprise

The distribution of maize sold in the market by the households in Table 2 shows that 57.5% and 42.5% of the respondents in the rural and peri-urban areas of the State respectively sold between 61% and 80% of their total output. Also, about 20% and 27.5% of smallholder farmers in the rural and peri-urban areas respectively sold between 41 and 60% of maize harvested in the market. The mean percentage of maize harvested which was taken to the market for sale by the respondents in rural area was 66.60%, while that of peri-urban area was 65%. This implies that the extent of commercialization in rural area was higher than that of peri-urban area under maize enterprise. The reason for this may be that farmers in rural area prefer selling most of their maize harvested and consume other food like yam, pounded yam, while in the peri-urban area they produce the quantity to consume probably because of small farm size.

3.3 Chow Test of Non-separability of Data

The computed F* value for maize was compared with the value of *F(K, T-2K)* at the 5% level of significance. Since the computed test statistic was less than F-Tabulated for maize, the null hypothesis was accepted and it was concluded that there is no significant difference between the data collected from rural and peri-urban areas (Table 3). Therefore, a single regression model was estimated for the rural and peri-urban data. Separate regression models were also estimated to compare coefficients with those derived from the whole regression sample.

3.4 Determinants of Percentage of Maize Sold by Smallholder Farmers

The regression results revealed that age, experience of the household head, farm practice and quantity of harvested maize had significant influence on the proportion of maize that will be offered for sale in the market in rural area of the State. The age of the household head and the percentage of maize sold in the market were positively related. The negative relationship between the dependent variable(proportion of maize sold in the market) and the experience of the household head, which does not follow the *a priori* expectation, could be traced to the diversification of most of his resources to non-farming activities probably due to the poor revenue being realized from farming activities in the past. The type of farming system being practiced by the household had a positive relationship with the proportion of maize sold in the market. This could be as a result of the use of cost effective farm practice, which makes the farmer to increase the quantity of other inputs in the production of maize, thereby leading to increased production. There was a positive relationship between the quantity of harvested maize and the percentage of maize sold in the market. The reason for this could be ascribed to the low rate of grain consumption by the household members and their relations, which makes large quantity of the harvested maize available for sale in the market. This is plausible as the more the harvested maize the more the proportion the farmers offer for sale in the market.

Farm size, means of land acquisition and unit price were the factors that had significant influence on the proportion of maize sold in the market in peri-urban area of the State. Farm size and the proportion of maize that will be made available for sale in the market had positive relationship. The unit price and proportion of maize sold in the market were positively related. Experience of the household head and farm practice were the factors that significantly influenced the proportion of maize sold in the market in the pooled data. There was a negative relationship between the proportion of maize sold in the market and the experience of the household heads, which does not follow the *a priori* expectation. Also, the type of farming system being practiced by the household had a positive relationship with the proportion of maize sold in the market.

3.5 Results of Simulation Model for the Determinants of Percentage of Maize Sold by Smallholder Farmers.

The determinants of proportion of maize sold in the market by the smallholder farmers in Ondo State when some of the variables were increased by 5% as shown in Table 5 revealed that age of the household head, experience of the household head and farm practice had significant influence on the proportion of maize offered for sale in

the market in rural area of the State. The age of the household head and the proportion of maize sold in the market are directly related. Also, the experience of the household head and the proportion of maize sold in the market had a negative relationship. The type of farming system being practiced by the household had a positive relationship with the proportion of maize sold in the market. Also in Table 5, the gender of the household head, education level of the household head, farm size and unit price were the factors that influenced the proportion of maize sold in the market in peri-urban area of the State when some of the variables were increased by 5%. The gender of the household head had a negative relationship with the proportion of maize sold in the market, which implies that the presence of female household head will increase the market participation of such household. There was an inverse relationship between level of education and the proportion of maize sold in the market. Farm size and the proportion of maize sold in the market had a positive relationship. The unit price of maize had a positive relationship with the proportion of maize sold in the market, which is in line with the *a priori* expectation as it obeys the law of supply.

Table 5 shows that only the experience of the household head had a significant influence on the proportion of maize sold in the market when some of the variables were increased by 5% in the pooled data. The experience of the household head had a negative relationship with the dependent variable (proportion of maize sold in the market).

3.6 Comparison of the Significant Variables in the two Scenarios

The significant determinants of proportion of maize output sold in the market in rural area before the 5% increase in the selected variables were age of the household head, experience of the household head, farm practice and quantity of harvested maize. After the 5% increase in the variables, age of the household head, experience of the household head and farm practice were the significant variables. This shows that age of the household head, experience of the household head and farm practice were the common significant variables in the two scenarios in rural area. In peri-urban area, farm size, means of land acquisition and unit price of maize output were the significant determinants of proportion of maize sold in the market before increasing the selected variables by 5%. Gender of the household head, education level of the household head, farm size and unit price were the significant variables that influence the proportion of maize output sold in the market after the 5% increase in the selected variables. Farm size and unit price of maize output were the significant variables in both conditions. For pooled data, experience of the household head and farm practice were the significant variables that influenced the proportion of maize sold in the market before 5% increase in the selected variables. After the 5% increase in the selected variables, only the experience of the household head was significant. This implies that experience was common to both situations.

3.7 Constraints Faced by the Respondents in their Farming Activities

Majority of the rural and peri-urban farmers in the study area were faced with insufficient capital, high cost of transportation, poor road network, poor storage facilities, lack of credit facilities, insufficient processing facilities, price instability, inadequate agricultural inputs , weather problem, problem of pests and diseases, scarcity of labour during peak farming activities, inadequate extension services, fire outbreak, flooding, land tenure problem and long distance from farm to the market which were ranked. All the problems identified by the respondents might be among the reasons for their poor market participation which would have adverse effects on their welfare. These problems could also discourage those farmers who are ready to involve themselves in market participation since they would have presumed that market conditions were not favourable to them.

4. Conclusion and Recommendations

Based on the findings highlighted above, it could be concluded that the extent of commercialization in both rural and peri-urban areas were not high enough which calls for the attention of all the concerned parties (government and individuals) to put in place measures that will critically improve the extent of agricultural commercialization in Ondo State. It is no doubt that agricultural commercialization in Ondo State will drastically increase if most of the identified constraints were given adequate attention. Therefore, the following recommendations are suggested; provision of improved infrastructural facilities is a good condition for enhancing agricultural commercialization. This will prevent rural-urban migration of agile and able youths who are supposed to be agents of movement of agriculture from subsistence level to commercial level. Rural information bureaus as well as mobile telephony system should be formed so as to enhance maize farmers' regular access to information on market dynamics. There should be provision of rural employment opportunities to reduce high dependence by households on farm output (maize), which has been discovered to be one of the contributing factors to low marketing surplus. This will enable them to have diversification of means of livelihood. Credit facilities, adequate agricultural inputs and processing facilities should be put in place (by cooperative societies, government and individuals) for maize farmers in order to create room for the expansion of agricultural production, which will lead to commercialization of agriculture. Private and government owned extension agents

should intensify their efforts in disseminating vital information from research institutes to the farmers.

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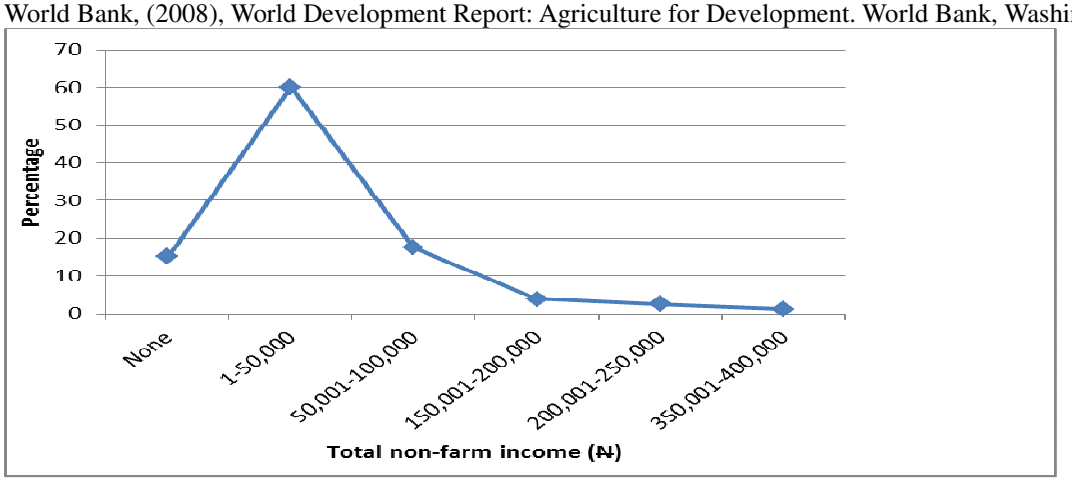

Figure 1: Distribution of the Respondents by Non-farm Income.

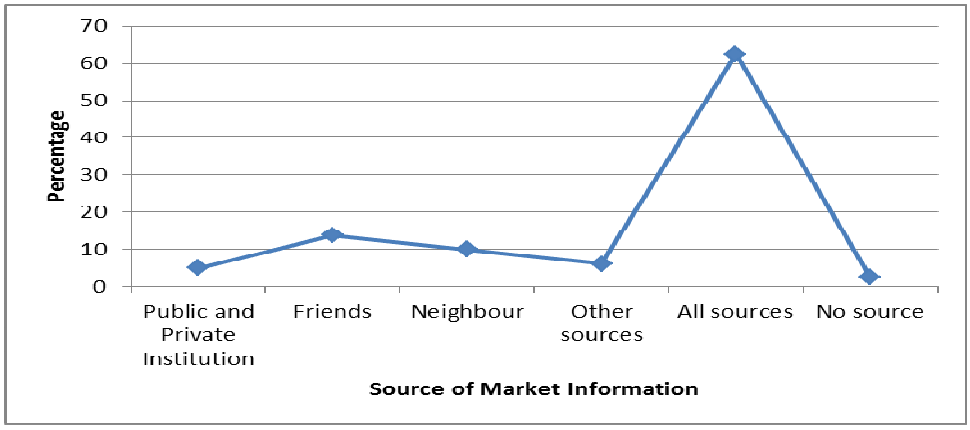

Figure 2: Distribution of Source of Market Information of the Households

Table 1: Distribution of the Respondents by the Socioeconomic Characteristics.

Gender	Frequency	Percentage
Male	59	74
Female	21	26
Age (Years)		
21-40	16	20
41-60	52	65
61-80	11	13.7
≥81	1	1.3
Marital Status		
Single	2	2.5
Married	61	76.2
Widow	11	13.8
Divorced	6	7.5
Education		
No Formal Education	6	7.5
Primary	24	30
Secondary	32	40
Tertiary	12	15
Adult Education	6	7.5
Quantity Harvested (Kg)		
1-5000	74	92.5
5001-10000	6	7.5
Farm size (Ha)		
0.01-1.20	72	90
1.21-2.40	8	10
Household size		
1-5	36	45
6-10	32	40
>10	12	15
Total	**80**	**100.0**

Table 2: Distribution of Maize Sold in the Market by the Households

Percentage sold	Rural		Peri-Urban	
%	Frequency	Percentage	Frequency	Percentage
≤ 20	0	0	3	7.5
21-40	3	7.5	0	0
41-60	8	20	11	27.5
61-80	23	57.5	17	42.5
≥ 81	6	15	9	22.5
Total	**40**	**100**	**40**	**100**
	Mean = 66.60%		Mean = 65%	
	Maximum = 93%		Maximum = 91%	
	Minimum = 33%		Minimum = 9%	

Table 3: Chow Test Results

Commodity	RSS_W	RSS_R	RSS_P	F*	F(K, T-2K) at 5% Sig. Level	Decision
Maize	12334.8654	3553.5297	4916.2553	1.70	1.89	Whole Model

Table 4: Determinants of Percentage of Maize Sold by Smallholder Farmers

	Rural (n = 40)		Peri-Urban (n=40)		Pooled data (n=80)	
Variables	**Coef.**	**Std. Err.**	**Coef.**	**Std. Err.**	**Coef.**	**Std. Err.**
Const.	18.0742	32.3558	-95.1198	120.2184	-16.2300	35.1717
Gender	5.5790	5.7026	11.7665	21.4289	4.8631	6.5234
Age	0.7302**	0.3580	-0.6160	0.5920	0.4885	0.3363
Education	-0.0920	2.8993	-8.8700	4.9753	0.9476	2.5913
Household size	-0.4422	1.5630	1.6227	1.6395	0.7279	0.9557
Experience	-1.2341**	0.4757	-0.3487	0.6129	-1.0902**	0.3888
Farm Distance	-2.5577	2.1386	-0.0460	4.5823	-0.0127	1.9690
Farm Size	-5.9043	8.0398	39.6171**	13.3162	2.2150	7.1860
Farm Practice	13.0496**	5.7800	27.0593	19.1614	18.1804**	6.6379
Land Acquisition	3.2581	3.0139	19.2778**	8.7767	6.1107	3.7155
Harvested Maize	4.91E-3**	2.30E-3	4.55E-3	3.55E-3	3.82E-3	2.20E-3
Unit Price	-0.0933	0.1990	1.1125**	0.5187	0.1154	0.1839
Non-farm income	1.31E-4	7.75E-5	-1.81E-5	1.31E-4	3.02E-5	6.67E-5
Information source	0.9041	1.3132	1.8886	9.8266	0.8798	1.6914
	Log likelihood ratio= -119.8647		Log likelihood ratio= -114.6053		Log likelihood ratio= -246.5815	

Note: **= Significant at 5% level, ***= Significant at 1% level

Table 5: Results of Simulation Model for the Determinants of Percentage of Maize Sold by Smallholder Farmers.

	Rural (n = 40)		Peri-Urban (n=40)		Pooled Data (n=80)	
Variables	**Coef.**	**Std. Err.**	**Coef.**	**Std. Err.**	**Coef.**	**Std. Err.**
Const.	5.9165	27.1155	124.7687	55.3884	32.8165	30.1730
Gender	4.4157	5.7220	-34.7698**	13.9252	-3.8863	5.9060
Age	0.5212**	0.2550	-0.0365	0.3889	0.1995	0.2432
Education	0.6152	2.5479	-14.5327**	5.1553	0.7110	2.3606
Household size	-0.3276	0.8871	-0.0978	0.8370	-0.4288	0.5899
Experience	-0.9956**	0.3813	-0.7485	0.4314	-0.6371**	0.2737
Farm Distance	0.6865	1.6561	-6.2223	3.4671	1.1366	1.5753
Farm Size	-3.6818	7.0131	41.1370**	13.0400	5.1583	5.9610
Farm Practice	13.0150**	5.7599	-7.4332	11.5354	9 .5358	5.8474
Land Acquisition	4.9344	3.1513	10.6865	6.4469	5.5202	3.5699
Harvested Cassava	3.41E-3	2.11E-3	-8.08E-4	8.63E-4	7.13E-4	6.99E-4
Unit Price	-0.0592	0.1710	1.0053**	0.3828	0.1987	0.1781
Non-farm income	6.33E-5	5.0E-5	8.34E-5	1.05E-4	2.0E-5	5.52E-5
Information source	1.5161	1.3649	-4.0690	3.3347	-0.4869	1.4515
	Log likelihood ratio= -149.5477		Log likelihood ratio= -162.3375		Log likelihood ratio= -326.5334	

Note: **= Significant at 5% level, ***= Significant at 1% level

Table 6: Distribution of Farmers based on Constraints Faced in their Farming Activities

	Rural		Peri-urban	
Variables	**Frequency**	**Rank**	**Frequency**	**Rank**
Insufficient capital	40	1st	35	4th
Pest and diseases	17	11th	15	9th
High cost of Transportation	25	6th	37	3rd
Poor road network	40	1st	40	1st
Inadequate storage facilities	30	5th	32	6th
Insufficient processing facilities	22	8th	10	12th
Weather problem	35	4th	34	5th
Price instability	38	3th	20	7th
Scarcity of labour	17	11th	13	11th
Lack of credit facilities	20	9th	20	7th
Poor extension services	10	13th	10	12th
Inadequate agricultural inputs	20	9th	40	1st
Fire outbreak	5	14th	3	16th
Flooding	3	15th	5	15th
Land tenure problem	3	15th	15	9th
Long distance	25	6th	10	12th

Multiple Responses