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DETERMINANTS OF FARMERS' ACCESS TO AGRICULTURAL INCENTIVES IN EGBEDORE LOCAL GOVERNMENT AREA OF OSUN STATE

K.Y. Ogunleye, R.G. Adeola, and O.J. Kojusola

Department of Agricultural Extension and Rural Development,
Ladoke Akintola University of Technology, Ogbomoso, Nigeria

ABSTRACT: Agricultural incentives have long been recognized as a major factor in improving agricultural development. The major thrust of this research was to determine farmer's accessibility to incentives.
The study area was Egbedore Local Government Area of Osun State; interview schedule was used for data collection. A hundred and eleven (111) respondents were interviewed. Descriptive statistics was used to present the result and logit regression analysis was the analytical tools used.
The result shows that 75.7% of the respondents had access to incentive through informal source. It was found that 50.5% of the respondents had low access to incentives and 49.5% of the respondents had high access to incentives. Factors that significantly determined farmer's access to incentives were membership to farmer's association ($t=3.609$; $p< 0.01$) and primary occupation ($t=-2.203$; $p < 0.05$). The study recommends that farmers should belong to one farmers' group or the other so as to facilitate access to incentives and to facilitate identification of such farmer. Government and non-governmental organization should make effort to provide adequate incentives to the farmers.

KEYWORDS: Agricultural Productivity, Incentives, Access, Farmers.

1 INTRODUCTION

Agriculture is the bedrock of economic development in Nigeria. However, the development of the sector cannot be achieved without an efficient and effective incentive programme [9]. Incentive is anything that encourages somebody to do something with the hope of a better result [14], it functions like a motivating means to farmers in improving their productivity.

It has been widely argued that there are natural resources and artificial resources for agriculture, in the sense that, climatic and environmental factors, including weather condition, all summed up together to make natural resources for agriculture and they are closely linked to higher agricultural productivity while artificial resources are inputs such as improved seeds, fertilizer, good roads, market, storage and processing facilities. All this according to [4] are also closely linked to higher productivity. All these put together are incentives needed for maximum agricultural production. In other words, incentives can also be referred to as agricultural services, such as non tangible and non storable items used by farmers to increase agricultural productivity. In this study the term agricultural services will include financial aids, knowledge and information, research and extension, input and output marketing services, rural development all which affects agricultural production [7].

Farmers Nigeria has been faced with inadequate infrastructure and agricultural services (incentives) for so long. It has been argued that substantial differences in agricultural productivity seen between Asia and Africa can be largely explained by differences in input use [10]. The evidence suggests that agriculture has been faced with inadequate access to market, good roads, extension services, input such as fertilizer and seeds, hence this has drastically affected agricultural productivity [6]. However, [2] stated that the development of industries like Biofuel industries will serve as a means that provides easy link of the network between the middlemen (marketers) to farmers (the producers) and final consumer will gear up production.

Corresponding Author: K.Y. Ogunleye

Farmers face the high cost of production due to escalating fertilizer, seed and fuel prices and relatively low output prices, for example, in the case of maize production in the year 2008 when the average production cost per acre increased by 5%, at the same time land preparation cost rose by 75% per acre, while labour cost per worker per day rose by 100%, the cost of a 50kg bag of Diamonium phosphate (DAP) fertilizer rose by 111.1% [8]. Lack of access to agricultural inputs and services (incentives) are major constraints to maximize productivity of agriculture in Nigeria.

Agriculture provides food for her teeming population and raw materials for industries, but the sector is faced with mirage of problems which militate against optimizing its potentials; some of the constraints include low productivity, poor marketing and distribution infrastructure, weak extension services and inadequate access to incentives. These problems will not stand if adequate access to incentives and factors that influence its access are made available to rural small scale and large scale farmers such that if adequate improved seeds and fertilizers which are closely linked to higher agricultural productivity and food security [5] are made available, life of farmers will be better.

Some factors were identified as determinants to access to incentives. These include; Access to vital information, agricultural extension education, level of education, information on agricultural technology, language barriers, timing of incentive presentation, individualism and inadequate number of extension agents

1.1 OBJECTIVES OF THE STUDY WERE TO

- Identify the socio-economic characteristics of the respondent
- Investigate the sources of incentives available to farmers.
- Know the extent of farmer's access to agricultural incentives.
- Ascertain constraints to affecting farmer's access to agricultural incentives.
- Determine the factors affecting farmer's from gaining access to agricultural incentives.

2 METHODOLOGY

The study was carried out in Egbedore Local Government Area of Osun State, Nigeria; it is located around the North Western part of the state. Ocean State has a humid climate with a temperature of between 21.1 and 31.1ºC and annual rainfall of about 1000mm [13]. Egbedore is found in the transition zone of the derived savannah zone. The predominant occupation there is farming and major crops grown are maize, cowpea, yams and cash crops like cocoa and oil palm while other stable occupations among the people were trading, craftworks, palm oil processing. The populations of the respondent covered by this study were farmers in Egbedore Local Government.

Data was collected through the use of questionnaire which was administered inform of interview schedule. Multistage sampling technique was used. The study area has ten political wards. For the purpose of this study, 30% of the political wards in Egbedore were randomly selected, namely; Okinni, Ido-Osun and Awo. Four villages were picked randomly from each of the wards selected made a total of twelve villages and ten farmers were selected from the twelve villages making a total 120 farmers. Only 111 schedules were eventually used for the study because the information provided by the remaining 9 respondents was not adequate for data analysis. Descriptive statistical tools such as frequencies and percentages were used in presenting the data while logit regression analysis was used as inferential statistical tools to know the determinants of farmer's access to agricultural incentives.

2.1 MEASUREMENT OF VARIABLES

The dependent variable for this study was categorized as high access to incentives and low access to incentives. The goal was to determine whether or not the farmers in the study area have access to agricultural incentives and know the variables that determine their access. This study made use of Y as a dichotomous variable (binary) to represent the access to incentives by a given. Access by farmers was calculated by summing the weights of the scale and total was divided by 3 to give a mean of 1. Any incentive with mean score equal or above the cut off mean of 1was regarded as good access for the farmers while any with mean lower than 1 was considered as farmers having low access to such. Since Y is a dichotomous variable, a binary (dichotomous) response model with a logit function.

Table 1. Description of variable measurement

Dependent variables	**Method of decision**
Access to incentives	High access (1) Low access (0)
Independent variables	
Access to Agricultural incentives	Always (2), Occasionally (1) Not accessible (0) were converted to scores
Farmers household size	Measure in number
Primary occupation	Farming (1) others (0)
Marital status	Married (1), Single (0), Divorced (0) Separated (0)
Membership to association	Yes(1),no(0)
Farmers sex	Male(1),Female(0)
Age of farmers	Measure in year
Farmer's level of education	No-formal education(0), Primary education(1) Secondary education(0) Tertiary education(0)
Farm size	Measured in hectares
Agriculture is main activity	Yes(1),others (0)
Amount earned	Naira

3 RESULTS AND DISCUSSIONS

3.1 SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENT

Table 2 below shows that 87.4% of the respondents in the study area were male while 12.6% were female. This might be that farming activities in the area are male dominated. Majority (81.1%) of the farmers were married, this implies that farmers in the study area were married hence there must be more incentives to encourage the farmer to have large production to feed their family and contribute to the food security of the nation at large. For a successful and highly productive farming activity, experience is very significant, the table further revealed that the average farming experience of the farmers was 27.9 years. This shows that the respondents were highly experienced in farming. This might be that many of the farmers had been struggling to survive in their farming activities because access to incentives for agricultural production had not been adequate as shown on table 3. The farmers were still in their active farming age as their mean age was 48.1 years. Hence, farming resources (incentives) should be made accessible to the farmers for effective and efficient agricultural production.

Also, 36.9% had no formal education, 25.2% had primary education. This implies the level of education of the farmers was low. However, 20.7% had tertiary education. About 70% of the farmers practiced farming as their primary occupation while 30.6% of the respondents practiced farming as their secondary occupation. This implies that farming is the dominant source of livelihood and sustenance for the farmers. This confirms [15] that nearly 80 percent of African continent is poor, live in rural areas and depend mainly on agriculture for their livelihood. Majority (84.7%) of the farmers had farm size ranging between 0.10 and 5.99 ha, 7.2% had between 6.0 to 9.99 and 8.1% had 10 ha and above. Their mean farm size was 3.69ha. According to [3], majority of these farmers are small scale farmers who are in need of incentives. In the study area subsistence and commercial farming are the only major farming practiced while 9.9% involved in subsistence farming, 69.4% practiced commercial farming and 20.7% practice both types of farming operations. More than half of the farmers belong to one association or the other.

Table 2. Socio Economic Characteristics of the Respondent

Characteristic	Categories	Percentage	Mean/Modal category
Sex	*Male*	87.4	**Male**
	Female	12.6	
Marital status	*Married*	81.1	**Married**
	Single	14.4	
	Divorced	0.9	
	Separated	3.6	
Years of farming experience (Years)	*1 – 20*	45.9	
	21 – 40	31.5	27.9years
	41 – 60	18.9	
	61 – 82	3.6	
Age	*≤ 30*	20.7	
	31 – 40	16.2	
	41 – 50	20.7	48.07
	51 – 60	23.4	
	61 – 70	11.7	
	71 – 90	7.2	
Educational status	*No formal education*	36.9	
	Primary education	25.2	
	Secondary education	17.1	
	Tertiary education	20.7	
Primary occupation	*Farming*	69.4	Farming
	Artisan	6.3	
	Civil savant	10.8	
	Trading	13.5	
Farm size(ha)	*0.10-5.99*	84.7	3.69ha
	6.0-9.99	7.2	
	≥10.0	8.1	
Type of farm	*Subsistence*	9.9	
	Commercial	69.4	
	Both	20.7	
Membership of any association	*No*	47.7	Members of association
	Yes	52.3	

3.2 SOURCES OF ACCESS TO INCENTIVES

Table 3 shows the sources of agro input incentives to farmers. Among the source of credit incentive that should be available to the respondents in the study area, 10.8% of the respondent had access to credit from agricultural institution and this is the highest percentage from the formal sources.

Table3 shows that majority of the farmers who had access to incentives were through informal sources which were specifically through relatives and friends for credit (56.8%), land(75.7%), fertilizer (36.0%), improved seeds or seedling (40.5%). Also, the farmers were able to access credit through marketing agents (35.1%) and cooperative society (42.3%). This is similar to the finding of [12] who found that major incentives given to farmers were improved seeds, chemical, fertilizer and loan. It can also be deduced that the farmers could access inputs as incentives for crop production, but incentives for livestock production either through informal or formal sources were very poor.

Table 3. Distribution of respondents by sources of access to incentives

Formal sources	***Credits***	***Land***	***fertilizer***	***Improved seed/seedlings***	***Feeds/feeds ingredients***	***Feeders and waters trough***	***Vaccines***
Federal government	6(5.4)	6(5.4)	15(13.5)	13(11.7)	2(1.8)	0(100)	0(100)
State government	9(8.1)	7(6.3)	1(0.9)	12(10.80)	2(1.8)	0(100)	2(1.8)
Private organization	4(3.6)	7(6.3)	2(1.8)	5(4.5)	2(1.8)	1(0.9)	3(2.7)
Nongovernmental organization	3(2.7)	1(0.9)	4(3.6)	4(3.6)	2(1.8)	0(100)	2(1.8)
Banks	10(9.0)	0(100)	0(100)	0(100)	0(100)	0(100)	0(100)
Extension agents	2(1.8)	2(1.8)	11(9.9)	10(9.0)	4(3.6)	2(1.8)	3(2.7)
Agricultural based institutions	12(10.8)	14(12.6)	14(12.6)	16(14.4)	4(3.6)	3(2.7)	3(2.7)
Informal sources							
Farmers association	20(18)	8(7.2)	13(11.7)	16(14.4)	5(4.5)	3(2.7)	1(0.9)
Relatives and friends	63(56.8)	84(75.7)	40(36.0)	45(40.5)	21(18.9)	9(8.1)	1(0.9)
Marketing agents	39(35.1)	3(2.7)	7(6.3)	7(6.3)	7(6.3)	3(2.7)	2(1.8)
Cooperative society	47(42.3)	4(3.6)	7(6.3)	6(5.4)	4(3.6)	5(4.5)	4(3.6)

Source: Field survey

3.3 FARMER'S ACCESS TO INCENTIVES FOR AGRICULTURAL ACTIVITIES

The result on table 4 shows that constant and stable electricity supply, ready market for non-consumable produce (cash crops), good roads, herbicide, improved seeds and seedlings, stipulated price of produce across the local government and fertilizer which were ranked 1,2,3,4,5,6 and 7 respectively. Alternatively, the farmers indicated poor access to rural industrial development, extension officer's, storage and processing houses, farmers identity card, credits and loans, viable agricultural technology and extension. This shows that a lot needs to be done so that farmers could have access to incentives, especially extension which, according to [1] is crucial in agricultural development.

Table 4. Distribution of respondents by frequency of access to incentives for agricultural activities

Rural infrastructure	**Always accessible**	**Occasionally accessible**	**Not accessible**	**Rank**
Constant and stable electricity supply	24(21.6)	62(55.9)	25(22.5)	1
Ready market for non-consumable produce (cash crops)	34(30.6)	53(47.7)	24(21.6)	2
Good roads	39(35.1)	49(44.1)	23(20.7)	3
Herbicide	24(21.6)	54(48.6)	33(29.7)	4
Improved seeds and seedlings	46(41.4)	43(38.7)	22(19.8)	5
Stipulated price of produce across the Local Government	20(18)	55(49.5)	36(32.4)	6
Fertilizer	25(22.5)	45(40.5)	41(36.9)	7
Extension education	18(16.2)	43(38.7)	50(45)	8
Viable agricultural technology	10(9.0)	35(31.5)	66(59.5)	9
Credits and loans	11(9.9)	30(27)	70(63.1)	10
Farmers identity card	23(20.7)	21(18.9)	67(60.4)	11
Storage and processing houses	13(11.7)	26(23.4)	72(64.9)	12
Extension officers visit	17(15.3)	19(17.1)	75(67.6)	13
Railway network	9(8.1)	16(14.4)	86(77.5)	14
Rural industrial development	5(4.5)	7(6.3)	99(89.2)	15

Source: Field survey

3.4 CONSTRAINTS THAT IMPEDE ACCESS TO INCENTIVES

In table 5 the farmers identified severe constraints to access incentives as instability of agricultural policies (81.1%), inappropriate timing for disbursement of incentives (49.5%), insufficient incentives (45.9%) and lack of information about incentives.

Table 5. Distribution of respondents by constraints that impede access to incentives

Constraints	Severe	Mild	Not a problem
Lack of information	47(42.3)	36(32.4)	28(25.2)
Inappropriate timing of incentive disbursement	55(49.5)	24(21.6)	32(28.8)
Inability to identify genuine farmers	32(28.8)	29(26.1)	50(45)
Non-membership of farmers association	23(20.7)	25(22.5)	63(56.8)
Insufficiency of incentive provided	51(45.9)	24(21.6)	36(32.4)
Agricultural policy instability	90(81.1)	5(4.5)	16(14.4)

Source: Field survey, 2012.

3.5 LOGIT ESTIMATES OF THE DETERMINANTS OF FARMERS' ACCESS TO INCENTIVES IN THE STUDY AREA

Farmer's membership to an association was measured and the result revealed a coefficient of 1.709. This is statistically significant at $p<0.1$. This result shows that membership of any farmers association is positively correlated with access to incentives. The coefficient shows that a unit increase in membership to an association will bring 1.709 unit increases in farmers' access to incentives. This is in relation to [11] who found that membership in farmer's association and cooperatives could increase farmer's interaction with other farmers and entrepreneurs which would in turn increase his capacity to access current information on economic activities.

The coefficients of respondents primary occupation is measured and it is -1.178 and it is statistically significant at $p<0.5$. This result shows that primary occupation is negatively correlated with access to incentives, meaning that the larger the number of farmers the lesser the incentives. This implies that the incentives available to farmers are not commensurate to the number of farmers. This is an important issue which policy should seek to address by ensuring that more incentives are provided.

Table 6. Binomial Logit Regression Access to Incentives and Socio-economic characteristics

Variable	X_i- **Denotes**	**Coefficients**	**Standard error**	**t-value**	**Remarks**
Constant		-0.0286	1.0033531	-0.0285	
Year of farming	X_1	0.602E-02	0.22056518E-01	0.273	Not significant
Age in years	X_2	-0.257E-01	0.24964413E-01	-1.029	Not significant
Farm size	X_3	-0.263E-01	0.42158903E-01	-0.624	Not significant
Amount earned	X_4	0.301E-06	0.74878484E-06	0.402	Not significant
Membership of association	X_5	1.709	0.47347981	3.609*	Significant
Sex	X_6	1.162	0.72803060	1.596	Not significant
Level of Educational	X_7	-0.882E-03	0.61023540E-03	-1.446	Not significant
Primary occupation	X_8	-1.178	0.53471622	-2.203**	Significant
Type of farming	X_9	0.685	0.80561582	0.850	Not significant

Source: Computer printout of logit analysis *=significant at p< 0.01, **=significant at p< 0.05

4 CONCLUSION AND RECOMMENDATIONS

The study concludes that, many of the farmers in the study area are in their active age as a larger percentage of farmers between ages of 31-50 in the study area. Majorly, the farmers had access to incentives for crop production. Their access to incentives was also through informal sources, namely: friends, relatives, market agents and cooperative societies. Determinants of the farmers' access to incentives were membership in farmers' association and farming as primary occupation. Based on the result of the study, it was recommended that:

1- Farmers should be encouraged through a campaign and emphasis that farmers should belong to one farmers association or the other so as to facilitate identification and access to incentives.

2- The study recommends that farmers should be trained by extension practitioners in leadership skills for farmers association so as to facilitate better access to incentives through their activities.

3- Government should work to provide more incentives to farmers for improved crop and more importantly animal production.

4- Entrepreneurs and government should build agro-allied industries where agricultural products serve as raw materials used for production in rural areas for effective rural transformation, because rural transformation is a vital tool for national development.

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