

The Role of Extension Agents in Ensuring Increased Productivity for Food Security in Ohaji Egbema, Imo State

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Abstract

The study examines the role of extension agents in ensuring increased productivity for food security in Ohaji Egbema L.G.A. Simple random selection method was used to select five communities as well as 20 farmers from each of the 5 communities chosen. Data collection was facilitated by means of questionnaire and was analyzed using tables, frequency distribution and Logit regression model. Results from the study show that female farmers were constituted with 75%. This could be attributed to the fact males are business oriented and operate in urban cities, thus the women folk left at home thus constitute the major agricultural labour force. The value for Farm income (X_1), Improved yields (X_2), Improved inputs (X_3), Farm size (X_4) and labour output (X_5) are significant and positively related to extension contact in the study area. This implies that as extension contact with farmers' increases it results in increase in farm income, improved yields, adoption of more improved inputs in production, expansion of farm size and labour output. The study recommends that more extension agents should be recruited for effective coverage of the study area. Youths should be sensitized to take to farming by putting in place adequate incentive package to attract them. Formal and informal financial institutions should prioritize lending to female farmers in the study area by putting in place favourable repayment terms. This will go a long way to enhance ability to afford improved farm inputs. Agro service centres should be established in the study area so that farmers can easily access improved farm inputs.

Keywords

Extension agent, food security, farmers, farm inputs, farm income

1. Introduction

Agricultural extension is a system of disseminating of agricultural information from the research institutes to the farmers within the shortest possible time. More so, rural farmers are trained so as to acquire the necessary skills and knowledge required [1]. Agricultural extension programmes in Nigeria started during the colonial era when the country was under British rule. They were initially using mass methods of extension communication through campaign to encourage people to grow cash crops for export [2]. One of such methods was issuing instructions to people through their chiefs and village heads. The crucial role of agricultural extension (i.e. farmer's education) in the social and economic development of the nation cannot be over emphasized. Never, before in Nigeria history has the necessity for educating and increasing the productivity capacity of farmers been of such importance as it is today [3]. Increased agricultural productivity depends primary upon the acceptance of cultural and technological changes at the rural farm level [4]. Thus, for Nigeria agriculture to improve, our farmers have no alternative but to learn and adopt recommended scientific farming techniques in place of the traditional practices. Perhaps, the slow development of Nigeria agriculture can be

attributed to the inability of the Nigeria farmers to respond positively to new ideas or innovations. For farmers to respond positively to new ideas, they must be properly educated on how best to apply the new ideas. The term “extension” here means advisory and other services to help rural farmers to make the best possible use of the productive resources at their disposal [5]. Agricultural extension brings about changes in households and national security, through education and communication of farmers attitude, knowledge and skills [6]. The role of agricultural extension involves dissemination of information, building capacity of farmers through the use of variety of communicating methods and help farmers make informed decisions [7]. Agricultural extension services are one of the agencies transforming subsistence farming into modern and commercial agriculture which promotes household and national food security.

Food security is an important theme in the debate of rural development and poverty alleviation policies in many developing countries. Despite the substantial increase in food production in many countries, 790 million people in developing world do not have adequate food to eat. Another 34 million people in the industrialized country and those in Transition also suffer from chronic food insecurity [8]. Food security means access to food by all people at all times to have adequate food for an active healthy life [9]. It entails both the availability of food and the ability of all members to have access to adequate amount of food. According to [10] food security means the assured availability of food for individual, households to draw on to meet their minimum consumption requirements during a given period. In Nigeria, subsistence or traditional agriculture dominates the economy. For national progress to occur, changes in agriculture is essential, substantial change needed if work is to be improved, if a surplus is to be produced for sale and if agriculture is to enter a phase of self sustained growth, change is needed not only to increase production but also to alleviate households from poverty and drudgery of manual labour [11].

1.1 Objectives of Study

- 1) To describe the socio-economic characteristics of the rural farmers.
- 2) To examine the effect of extension contact on farmers productivity.

2. Methodology

This study was carried out in Ohaji/Egbema Local Government Area. It lies in the South/Western part of Imo State and shares common boundary with Owerri in the East, Oguta in the North and Ogba/Egbema Ndoni in Rivers State in the South West. The rainfall varies between 3000mm per annum in the coastal area to 2000mm per annum in the Northern part and this occurs mainly between April to October. Harmattan is usually experienced in the area from December to February as a result of the North East trade winds blowing from the Sahara desert South wards carrying with it dryness and dust [12]. The selected Local Government Area for the study is largely populated by Igbo Language speaking people. However, immigrants from different parts of the country are found scattered all over the area. The occupations of the inhabitants include farming, fishing, palm oil processing, hunting and animal husbandry. Agricultural practice in the study area is characterized by small scale farming with 1.2 hectare as average holding. The use of simple tools such as hoe and cutlass, communal or family land holding and shifting cultivation are still predominant [13]. Food crops cultivated include Yam, Cassava, Cocoyam, Maize, plantain, leafy and fruit vegetables. Cash crop includes Cocoa, Kolanut, oil palm and rubber. Timber is also found in the forest in the area. Ohaji/Egbema LGA of Imo State comprises of Umuagwo, Ohaba, Obile, Ikwerede, Obitti, Assa, Obiakpu, Obosima and Mgbirichi. The area was chosen because it is an agrarian area that harbours poor indigenous agricultural practices that needs to be improved with the help of Extension services [14].

2.1 Sampling Procedure

Multistage sampling procedure was adopted in this study. The first stage involves purposive selection of Ohaji/Egbema as the study area because of it's an agrarian area that requires urgent extension intervention in view of the present backwardness in their farming practices. The second stage involves random selection of five communities namely; Umuagwo, Ohaba, Obile, Ikwerede and Mgbirichi. The third stage involves random selection of 20 farmers in each of the 5 communities. This brings the total number of respondents to 100. Data were collected with the use of a well-structured questionnaire. Supplementary information was obtained from journals, books, periodicals and other publications on the role of agricultural extension in ensuring food security.

2.2 Model Specifications

To describe the socio-economic characteristic of the rural farmers was analyzed using descriptive statistic such as mean, table and chart. The effect of extension contact on farmer's productivity was analyzed using logit model. The model is as stated below [15, 16].

$$\ln Y = \ln (P/1-P) \dots \dots \dots 1$$

$$\ln(P/(1-P)) = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \beta_5x_5 \dots + \beta_8x_8 \dots \dots \dots 2$$

Where;

Y= extension visit (1 = yes, 0 = otherwise),

P = probability of farmer being visited by extension agent,

1-P = probability of farmer not being visited by extension agent,

Ln = natural logarithm function,

β_0 = constant term

β_1 - β_5 = logistic regression coefficients.

The detailed description of the variables is as shown below.

Y= extension visit (Number of contacts)

X_1 = Farm income (measured in Naira)

X_2 = Improved Yields (measured in tonnes)

X_3 = Improved Inputs (measured in Naira)

X_4 = Farm Size (measured in acres)

X_5 = Labour output (measured in mandays)

The logistic regression model expresses the qualitative dependent variable which in this study is dichotomous, as a function of several independent variables, both qualitative and quantitative [17]. Since P is the probability of the farmer being visited by extension agent, 1 – P is the probability of the farmer not being visited by extension agent, the ratio P/(1-P), known as the odds ratio, is the odd in favour of extension visit. The natural logarithm of the odds ratio is called the logit model which is estimated through the method of maximum likelihood since data was collected on individual observations [18].

3. Results and Discussion

3.1 Socio Economic Characteristics of Farmers

The table shows that majority of the farmers are female farmers constituting (75%) and males 25%. This could be attributed to the fact that the males in the study area are business oriented and operate in urban cities, thus the womenfolk left at home thus constitute the major agricultural labour force [19]. This may affect productivity negatively as farming requires finance since men have more financial muscles than women and carrying of heavy object and equipment's. Farmers within the age range of 41-50 years dominated with 44% indicating how matured farmers in the study area are. The implication here according to [20], is that middle aged farmers are relevant in the farming system of the study area as they are rational decision makers. The result shows that married farmers dominated with 62% in the study area indicating how matured and responsible the farmers are. Their basis for farming is premised on food security for the family. Farmers with primary level of education constituted the majority with 73%. This suggests that the most important element in the performance of farmers is basic intelligence and not education [21]. It entails education is not a determinant of the farmer's success, though that it may enhance their performance cannot be overlooked. Household size of farmers was of the range of 4-6 which constituted 52% [22]. This could suggest that family members are relied upon for farm labour. Such labour which is not remunerated helps to trim down labour costs. Larger family size places heavy burden on the farmer in providing food for the household [23]. The result shows that farmers with farming experience of 16 years and above constituted 50%. The number of years of experience a person had spent in farming gives an indication of the practical knowledge acquired which can translate to better performance. Majority (70%) of farm holdings of farmers was less than 1 hectare. Such small holdings may not be economical for practice of some new technologies like chemical weed control and mechanization. 68% of farmers engaged in off-farm occupations [24]. Other off-farm occupations in which farmers are engaged include trading tailoring etc. The motivation for engaging in these off-farm occupations is an attempt at supplementing their income and also to keep themselves busy during the slack periods [25].

3.2 Result of Logit Regression on the Effect of Extension Contacts on Farmers

From the result of the analysis in table..., the value for Farm income (X_1), Improved yields (X_2), Improved inputs(X_3), Farm size (X_4) and labour output (X_5) are significant and positively related to extension contact in the study area. This implies that as extension contact with farmers increases it results in increase in farm income, improved yields, adoption of more improved inputs in production, expansion of farm size and labour output [26, 27, 28]. The result also showed that the value for farm income and labour output are significant at 5% level of significance while the rest are significant at 1%. This result agrees with [29] who observed that farmers who had contact with extension would easily adopt improved techniques of farming with congruent increase in output and income. This underscores the fact that to revolutionize agriculture and improve the lot of rural farmers in the study area, an efficient extension delivery system is inevitable [30].

Table 1. Socio-economic characteristics

Sex	Frequency	Percentage
Males	25	25
Females	75	75
Age		
21 – 30	9	9
31 – 40	27	27
41 – 50	44	44
>50	20	20
Marital Status		
Single	11	11
Married	62	62
Divorce/ Separated	16	16
Widow/ Widower	15	15
Educational Qualification		
Primary	73	73
Secondary	21	21
Tertiary	6	6
Farming Experience		
1 – 5	8	8
6 – 10	17	17
11 – 15	25	25
≥ 16	50	50
Other occupation		
Trading	68	68
Civil Servants	20	20
Tailors	10	10
None	2	2
Household Size		
1 – 3	3	3
4 – 6	52	52
6 – 10	29	29
≥ 10	16	16
Farm size		
Less than 1 hectare	70	70
1 hectare	20	20
More than 1 hectare	10	10
Total	100	100

Source: Field survey, 2019

Table 2. Result of logit regression on the effect of extension contact on farmers

Variables	Coeff	S.E	Z	P>Z
Farm Size	.000	.000	4.274*	.039
Improved Yields	.000	.000	8.103**	.004
Improved Inputs	-.867	.268	10.490**	.001
Farm Size	35.689	12.017	8.820**	.003
Labour Input	-.002	.001	6.136*	.013
Constant	10.183	3.786	7.235	.007

Source: Field survey data 2019

Log likelihood -74.7584

LR chi2 (9) 53.90

Pseudo R² 0.2650

Number of obs 100

Pseudo R² 0.265

Number of abs 100

5% level of significance

1% level of significance

4. Conclusion and Recommendations

The Impact of agricultural extension in making any nation self-sufficient in food production and in national development cannot be over emphasized. From analysis of the data gathered, majority of the farmers in the study are not aware of the existence of extension services, but because they are very few and are not doing much in terms of awareness, most farmers are totally ignorant and have continued to use old and obsolete farming methods. The activity of extension service holds great potentials for helping farmers shift over to new production technology in order to boost agricultural productivity to feed a rapidly expanding population. The need arises for an immediate and articulate reorganization of extension delivery system as a first step in encouraging farmers to take to new patterns in farming.

- ❖ More extension agents should be recruited for effective coverage of the study area.
- ❖ Youths should be sensitized to take to farming by putting in place adequate incentive package to attract them.
- ❖ Formal and informal financial institutions should prioritize lending to female farmers in the study area by putting in place favourable repayment terms. This will go a long way to enhance affordability of improved farm inputs.
- ❖ Agro service centres should be established in the study area so that farmers can easily access improved farm inputs.

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