

# Perceived Usefulness and Potentials of Funding Agricultural Extension Operation by Farmers in Kwara State, Nigeria

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## ABSTRACT

This study analysed the perceived usefulness and potential funding of agricultural extension operations by farmers in Kwara State, Nigeria. Specifically, the study described the socio-economic characteristics of farmers it examined farmers' perceived usefulness of innovations pushed by extension agents and investigated the potential funding of agricultural extension operations by farmers in Kwara State, Nigeria. Seventy contact farmers were randomly selected from Kwara State Agricultural Development project records. Interviewed schedule was used to elicit information from the respondents. The data were analysed by using frequency counts, percentages mean, ranking and stepwise multiple regression. The findings from this study showed that majority of the contact farmers were middle aged with mean age of 41.2 years, 58.6% had formal education, 61% cultivated less than 5 ha of land with annual income from farming put at average of N143, 774. All the innovation pushed by the agency, were rated useful by the farmers. The farmers show intension to fund extension services in the following area: Mobilizing farmers for group message delivery at farmers cost, assurance of prompt and positive response to extension agents at every schedule visit, provision of village accommodation to extension agents among others. Stepwise regression analyses showed that farm size and level of education were able to explain 33.6% of farmers potential funding of extension operation. It was recommended that farmers be intimated with the cost of extension operations. Farmers with large farm size and higher education, who had soft spot for funding could be co-opted in the campaign.

**Key Words:** Socio-economic characteristics; Innovation; Potential funding; Agricultural extension

## INTRODUCTION

In Nigeria, agricultural extension operations have been funded by tripartite contribution of World Bank (WB), federal and state governments. Although other external donors such as International Fund for Agricultural Development (IFAD), Integrated Reconstruction Development -Project (IRDP), Food and Agriculture Organization of the United Nations (FAO) and European Union Development (EU). Werblow (1996) reported that more than 60% of the EU development fund was allocated to Nation aid programmes for agricultural extension and rural development. However, the WB which is major donor for agricultural extension operations has withdrawn from further contributions, Aniedu (1998) reported that most Agricultural Development Projects (ADP) in Nigeria are at the moment incapable of carrying out their agricultural extension activities effectively because of inadequate finance. He therefore suggested link between ADPs, input organizations and farmers in order to recover the extension cost from farmer. In an earlier article by Onyebinama (1997), which strategies for funding extension, operations by include private entrepreneur, Banks, Insurance agencies, input, manufacturers and suppliers as plausible contribution to agricultural extension financing in Nigeria. All the institutions suggested as potential source of funding are indirect beneficiaries of agricultural extension operations.

Apantaku and Fakoya (2000) studied alternative sources of fund for Extension service in Ogun state, Nigeria and reported that one third of the actual amount spent on

extension service could be generated internally. Factor, such as farm size, income educational level length of contact with extension agent and gender of small-scale farmers had significant correlation with their willingness to contribute fund for extension services. In a similar study, Apantaku *et al.* (2000) identified internal donors for funding agricultural extension service in Osun State, Nigeria. The study found that Farmers Organization, community based Association, Non-governmental Organization, and Religious Organization were all willing to contribute substantially to counter fund extension. No significant relationship existed between sizes of the organization arid their willingness to fund Extension. However, relationship existed between the level of income 'and willingness to fund extension.

Antholt (1994) reviewed cases across the world in which farmers and or industry assume some of the responsibilities for supporting research and extension. In Australia, Montheith (1992) reported that China encourage research institutions, universities/colleges scientist and teachers sign contracts to farmers or rural group. Britain, according to Ingram (1992) has transformed its Agricultural Development Advisory service to a system that charges for services of direct benefit to the client but does not for service, which spread benefit across society, such as these relating to soil conservation.

This overview of funding in different nations of the world suggest the need for farmers to evaluate the usefulness of extension agency and their potential for funding agricultural extension operation. Mensah (1994) observed that smallholder farmers in Africa do not

appreciate the significance of the extension agents' messages. High-reliance on external donor for agricultural extension operation does not make it sustainable. An internal source for funding has to be identified and utilized for a sustainable service. Kartz (2001) gave five reasons for client farmers participation in financing extension services, which are: reducing public expenditure for extension; ensuring effective demand - oriented; high quality services, better adoption rates and accountability of service providers to the clients; ensuring the use of public fund for public interests; fostering empowerment and farmers ownership of services, improving the chance of financial sustainability of services. The studies by Apantaku *et al.* (2000a, 2000b) show the willingness of different Institutions in two South Western State of Nigeria to counter fund extension. The questions that readily come to mind is that since government hire and pay salaries of extension agents on a regular basis; what are the other extension operations that need to be funded, which farmers may be willing to take up.

This study, therefore, attempts to answer the following questions: (1) What are the socio-economic characteristics of farmers serviced by ADP in Kwara State?, (2) How useful have farmers found extension messages in Kwara State?, (3) What aspect of agricultural extension operations are farmers having potentials for funding?

The study was designed to analysis potential funding of agricultural extension operations by farmers in Kwara State, Nigeria. The specific objectives were to: (i) Describe the socio-economic characteristics of farmers in Kwara State, (ii) Examine farmers perceived usefulness of extension agents in Kwara State, (iii) Investigate potentials of funding of agricultural extension operations by farmers in Kwara State.

**Methodology.** Data for this study were obtained from seventy contact farmers, who were randomly selected from Kwara State Agricultural Development agency records. Interview schedule was used to elicit information from the respondents.

**A.** Socio-economic characteristics of farmers consisted of: (i) Age – farmers were asked to give their exact number of year spent on earth at the time of interview, (ii) Marital status – farmers were asked whether single, divorced, widow (er), separable or married, (iii) Educational status – This referred to the highest educational qualification obtained by respondents, (iv) size of farm holding: This is the sum total of all small plots used for farming, which are measured in heaps and translate to hectares using the formula 30,000 heaps equals one hectare, (v) Farming experience – The number of years spent by farmers on farming business.

**B.** Usefulness of services rendered by the extension agents. There were thirty-one innovations were pushed to farmers by the extension agents in Kwara State. All the innovations were listed and the farmers were asked to rate it on a five point likert type scale. Very useful was scored 5 points,

useful attracted 4 points, undecided scored 3 points, less useful score 2 points, while not useful score 1 point. The summation of individual farmer score ranges from a minimum of 31 and maximum of 155 points.

The mean usefulness score was calculated by the formula:

$$\frac{\sum X^{i-n}}{n}$$

Where

$$\sum X^{i-n} = \frac{\text{Addition of individual scores on usefulness}}{\text{Total number of respondent s}}$$

**C.** Potentials of funding agricultural operations by farmers were measured by their level of agreement to the eighteen funding items. The items were subjected to a five point likert type scale, where strongly agreed was scored 5 points, agreed score 4 points, un-decided 3 points, disagree 2 points and 1 point for strongly disagreed. The minimum score a farmer could obtain on the funding scale was 18, while the maximum point was 90 points.

**Data analysis.** The data were analysed by using descriptive statistics frequency and inference student t-test, and stepwise regression analysis model specification

$$Y = f(X_1, X_2, X_3, \dots, X_n)$$

Where, Y = potential funding of extension operations,  $X_n$  = explanatory variables,  $X_1$  = Age,  $X_2$  = Educational status,  $X_3$  = Farm size,  $X_4$  = Farming experience,  $X_5$  = Labour cost,  $X_6$  = Income,  $X_7$   $X_8$  = Farming practices,  $X_9$  = Farm advice/skills,  $X_{10}$  = Error term

## RESULTS AND DISCUSSION

Table I shows that majority of the contact (54.3%), were middle age people within the age range of 40 – 50 years. These are expected to be agile, manipulative, progressive, mobile and may be in a good position to motivate other farmers in the positive directions.

On the level of education, 58.6% had opportunity to acquire formal education with 18.6%, who had primary education 15.7% were secondary school leavers while 24.3% had post secondary education. The mean years of farming experience by the farmer was 18.5 years. These were experienced farmers of long standing records. Majority (61.4%) cultivated land less than 5 ha. Majority (72.9%) possess the land used for farming through inheritance. This give stability to the farming business as the farmers become free from owners demand and quit notices. The average income from farming was N143, 774.19. This placed the contact farmers above the poverty line of \$1 per person per day.

Agriculture extension ageing in Kwara State of Nigeria had disseminated information on several innovations to farmers. The farmers were asked to rate the innovations according to their usefulness.

**Table I. Socio-economic characteristics of contact farmers**

| Socio-economic characteristics                | Frequency | Percentage | Mean     |
|---|-----------|------------|----------|
| (a) <u>Age (Years)</u>                        |           |            |          |
| Young ( $\leq 40$ )                           | 27        | 38.6       | 41.2     |
| Middle age (40 – 50)                          | 38        | 54.3       |          |
| Old ( $> 50$ )                                | 5         | 7.1        |          |
| Total   | 70        | 100.0      |          |
| (b) <u>Educational level attained</u>         |           |            |          |
| Non formal education                          | 21        | 30.0       |          |
| Quranic education                             | 8         | 11.4       |          |
| Primary education                             | 13        | 18.6       |          |
| Secondary education                           | 11        | 15.7       |          |
| Post secondary education                      | 17        | 24.3       |          |
| Total   | 70        | 100.0      |          |
| (c) <u>Length of farming experience (yrs)</u> |           |            |          |
| $\leq 10$                                     | 23        | 32.9       | 18 years |
| 11 - 20                                       | 20        | 28.5       |          |
| $> 20$  | 27        | 38.6       |          |
| Total   | 70        | 100.0      |          |
| (d) <u>Farm size (ha)</u>                     |           |            |          |
| $\leq 5$                                      | 43        | 61.4       |          |
| 6 – 10  | 20        | 28.6       |          |
| 11 - 15                                       | 6         | 8.5        |          |
| $> 15$  | 1         | 1.4        |          |
| Total   | 70        | 100.0      |          |
| (e) <u>Farmland acquisition</u>               |           |            |          |
| Inheritance                                   | 51        | 72.9       |          |
| Purchase                                      | 4         | 5.7        |          |
| Lease   | 15        | 21.4       |          |
| Total   | 70        | 100.0      |          |
| (f) <u>Annual income from farming</u>         |           |            |          |
| No record (600)                               | 8         | 11.4       | N143,774 |
| $\leq 50$                                     | 26        | 37.2       |          |
| 51 - 150                                      | 11        | 15.8       |          |
| 251 - 350                                     | 13        | 18.4       |          |
| $> 350$                                       | 6         | 8.5        |          |
|   | 6         | 8.5        |          |
| Total   | 70        | 100.0      |          |

Table II shows that farmers rated 17 innovations to be very useful with mean rating ranging from 4.50 to 4.83. These innovations include improved maize variations (mean = 4.83), improved fish smoking (mean = 4.82), improved cassava variety (mean = 4.81), fertilizer use (mean = 4.80), improved cowpea variety (mean = 4.76), seed dressing (mean = 4.75), insecticide application (mean = 4.75), grain storage techniques (MR = 4.7), Tuber grain storage techniques (MR = 4.7), Guinea corn production (MR = 4.73), herbicide application (MR = 4.70) soil conservation tip (MR = 4.67), improved groundnut varieties (MR = 4.61), and improved rice varieties (MR = 4.50).

Furthermore, the remaining 14 innovations were rated useful. The innovations were rated in overall with a mean of 4.43, which implied that they were useful to the farmers. The innovation, which had mean rating below 4.0 seem to be the most recent ones disseminated by the extension agency. The benefits farmers obtained from the use of it might have not yielded sufficient level for proper classification on the continuum of usefulness. It is worthy to note that farmers found agricultural extension agency useful in the programme and activities.

Agricultural extension agents were not able to perform their duties effectively due to insufficient funding of its organizational services. The farmers in the study area were asked to rate their level of agreement to funding extension

operations.

In Table III, out of eighteen items farmers strongly agreed to four. These were mobilizing other farmers for group message delivery at farmers cost (MR = 4.68), assurance of personal prompt and positive response to extension agents at every scheduled visit. (MR = 4.64), provision of food and drinks for extension agents at every visit (MR = 4.61) and provision of village accommodation for extension agents. Groups delivery of extension message will promote rapid spread of information. The voluntary acceptance of farmers to gather others together will reduce time extension agent could have wasted on invitation. The physical presence of volunteer assistants could further strengthen farmers commitment to extension programme. Food, drinks and accommodation constitute important expenditure that every extension agent has to bear.

Also, farmers agreed to provide the following: provision of motor bike for extension agents to increase their coverage (MR = 4.48), contribution of money to cover the cost of result demonstration (MR = 4.11). Been the expenses and contribute money to cover the expenses of field trips (MR = 4.08), provide meal subsidy for agricultural extension agents accommodation in the nearest town (MR = 3.70), bear transportation cost agricultural extension agents as a result of his visit, (MR = 3.55) and pay allowance to extension agents for visit to my farm (MR = 3.54). Farmers were un-decided on six items. These were: payment of allowance to extension agents for visiting my

**Table II. Perceived usefulness of innovation pushed by extension agents**

| Innovation                           | Mean Rating | Rank             |
|--------------------------------------|-------------|------------------|
| Improved variety of maize            | 4.83        | 1 <sup>st</sup>  |
| Improved fish smoking                | 4.82        | 2 <sup>nd</sup>  |
| Improved variety of cassava          | 4.81        | 3 <sup>rd</sup>  |
| Fertilizer use                       | 4.80        | 4 <sup>th</sup>  |
| Imported variety of cowpea           | 4.76        | 5 <sup>th</sup>  |
| Seed dressing                        | 4.75        | 6 <sup>th</sup>  |
| Insecticides application             | 4.75        | 6 <sup>th</sup>  |
| Grain storage techniques             | 4.75        | 6 <sup>th</sup>  |
| Tuber storage techniques             | 4.75        | 6 <sup>th</sup>  |
| Guinea corn production               | 4.73        | 10 <sup>th</sup> |
| Herbicide application                | 4.70        | 11 <sup>th</sup> |
| Soil conservation tip                | 4.67        | 12 <sup>th</sup> |
| Improved variety of groundnut        | 4.61        | 13 <sup>th</sup> |
| Improved variety of rice             | 4.50        | 14 <sup>th</sup> |
| Fadama farming                       | 4.48        | 15 <sup>th</sup> |
| Vegetable farming                    | 4.44        | 16 <sup>th</sup> |
| Citrus growing                       | 4.41        | 17 <sup>th</sup> |
| Goat rearing                         | 4.37        | 18 <sup>th</sup> |
| Sheep rearing                        | 4.37        | 18 <sup>th</sup> |
| Mango production                     | 4.30        | 20 <sup>th</sup> |
| Soyabean planting                    | 4.30        | 20 <sup>th</sup> |
| Soyabean milk                        | 4.28        | 22 <sup>nd</sup> |
| Hygienic preparation of gari         | 4.28        | 22 <sup>nd</sup> |
| Prevent Newcastle disease in fowl    | 4.25        | 24 <sup>th</sup> |
| Other animal vaccination             | 4.24        | 25 <sup>th</sup> |
| Soyabean cheese                      | 4.22        | 26 <sup>th</sup> |
| Cotton production                    | 4.10        | 27 <sup>th</sup> |
| Fish farming                         | 3.88        | 28 <sup>th</sup> |
| Rabbit keeping                       | 3.87        | 29 <sup>th</sup> |
| Indigenous method of scabies control | 3.74        | 30 <sup>th</sup> |
| Quail rearing                        | 3.72        | 31 <sup>st</sup> |

Very useful = 5, useful = 4, undecided = 3, not useful = 2, not very useful = 1, over all mean = 4.43

home (3.48), payment of honorarium to subject matter specialist, for lectures, group discussion, workshop and seminar held (MR = 3.47), contribute money to support farm radio programme (MR = 3.35), pay to fuel extension agents' car/motor bike (MR = 3.30) pay for handbills, posters, leaflets that contain valuable information on farm production (MR = 3.24) and pay for watching agriculture film show (MR = 3.20). The six items are the core areas that demand for more finance.

On the over all, the mean was 4.0, while implied that farmers agreed to find agriculture extension operation.

Stepwise multiple regression of selected socio-economic variables on potential funding of extension operation was carried out. Nine variables were regressed on potential funding. The variables were age, education, years of farming experience, income, labour cost, usefulness of farm advice, frequency of extension contact and total number of farm innovations acquired. The result showed that 33.6% of the total variance in farmers potential to fund agricultural extension operations were explained by two variables. These were farm size and education.

The most important variable in explaining the variance potential funding of extension operation was farm size ( $B = 0.47$ ) followed by education ( $B = 0.33$ ). This implied that the higher the farm size and education of farmers the higher their agreement to fund extension operations. Higher farm size could lead to higher production and profit. The higher the level of farmers education, the higher the information seeking habit. This funding partially support Apantaku *et al.* (2000), while income from farming, frequency contact with extension agents had no significant correlation with potential funding of extension operation by farmers.

## CONCLUSION AND RECOMMENDATIONS

Farmers involvement in funding extension operation has become an imperative in view of the reduction in external funding. It seems the farmers who found extension agency useful to their production have not caught the vision of personal contribution to make the agency sustainable. There is the need for the extension agency to educate farmers on cost of its operations and the need for their contribution. Farmers with large farms and at least post secondary education could be the initial target for supports, while the farmer associations could be another avenue for effective education. The planning and implementation of farmers oriented programme will promote more assistance to funding.

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**Table III. Potential funding of agricultural extension services by farmers**

| Extension activities   | Mean rating | Rank             |
|--|-------------|------------------|
| Mobilizing other farmers for group message delivery at farmers cost                                    | 4.68        | 1 <sup>st</sup>  |
| Assurance of my prompt and positive response to extension agents at every scheduled visit              | 4.64        | 2 <sup>nd</sup>  |
| Provision of food and drinks for extension agent at every visit  | 4.61        | 3 <sup>rd</sup>  |
| Provision of village accommodation for extension agents  | 4.58        | 4 <sup>th</sup>  |
| Provision of motor bike for extension agents to increase their coverage                                | 4.48        | 5 <sup>th</sup>  |
| Contribute money to cover the cost of result demonstration   | 4.11        | 6 <sup>th</sup>  |
| Bear the expenses and contribute money to cover the expenses of field trips                            | 4.08        | 7 <sup>th</sup>  |
| Pay to participate in method demonstration programme   | 4.07        | 8 <sup>th</sup>  |
| Provide meal subsidy for Agricultural extension agent  | 3.97        | 9 <sup>th</sup>  |
| Pay for Agric. Extension agents accommodation in the nearest town                                      | 3.70        | 10 <sup>th</sup> |
| Bear the transport cost of the agricultural extension agents   | 3.55        | 11 <sup>th</sup> |
| Pay allowance to extension agent for visiting my farm  | 3.54        | 12 <sup>th</sup> |
| Pay allowance to extension agent for visiting my home  | 3.48        | 13 <sup>th</sup> |
| Pay honorarium to subject matter specialist for lecture, group discussion, workshop and seminar, held. | 3.47        | 14 <sup>th</sup> |
| Contribute money to support the cost of farm radio programme   | 3.35        | 15 <sup>th</sup> |
| Pay for fueling extension agent car/motor bike   | 3.30        | 16 <sup>th</sup> |
| Pay for handbills, posters, leaflets that contain valuable information on farm production              | 3.24        | 17 <sup>th</sup> |
| Pay for watching agriculture film show   | 3.20        | 18 <sup>th</sup> |

Scale: Strongly agree = 5, Agree = 4, undecided = 3, disagree = 2, Strongly disagree = 1, over all mean = 4.0

**Table IV. Stepwise multiple Regression of selected socio-economic variables on potential funding of extension operations**

| Model Variable                 | Coefficient $\beta$ (Beta) | T      |
|--------------------------------|----------------------------|--------|
| Farm size                      | 0.471**                    | 4.113  |
| Education                      | 0.334**                    | 3.120  |
| Farm experience                | 0.161                      | 1.322  |
| Income                         | 0.146                      | 1.087  |
| Labour cost                    | 0.113                      | 0.801  |
| Usefulness of arm advice       | -0.051                     | -0.447 |
| Frequency of extension contact | 0.024                      | 0.214  |
| Farm practice                  | 0.023                      | 0.199  |
| Age                            | 0.007                      | 0.061  |

Note:  $F = 14.4$ ,  $R^2 = 33.6$  \*\*  $P \leq 0.05$ .

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