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The Role of Communication in Dissemination of Improved Agricultural Technology in Bosso Local Government Area of Niger, Nigeria

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Abstract

Purposive sampling technique using 40 farmers each from 4 villages in the study area was employed. Information was elicited from the respondents using well structured questionnaire. Data were analysed using percentages, frequency distribution, likert scale and probit analysis. Results indicated that among the factors influencing dissemination of improved technology, age, education and gender were significant at 5% level of significance. Most of the respondents do not understand the major language of instruction in Nigerian institutions due to absence of multilingualism in dissemination of techniques. Employment of more female extension agents, extension agents who can speak the farmers own language as well encouraging multilingualism will lead to increased productivity and subsequently enhance the food security status of the nation.

INTRODUCTION

Communication is a vital issue in agriculture, conveying improved and recommended agricultural practices through extension workers to clients in order to improve on their agricultural production and in marketing of their produce (Williams, 1989). On the other hand, agricultural extension is an out of school education for rural people. An extension agent is responsible for providing knowledge and information on particular innovations and through communication, he passes such to farmers.

Knowledge and information are essential for people to respond successfully to the opportunities and challenges of social, economic and technological changes, including those that help to improve agricultural productivity, food security and rural livelihood. But to be useful, knowledge and information must be effectively communicated to the people.

Extension work is dependent upon the extension agent who is seen as a critical element in the activity. If he cannot communicate effectively, no matter how impressive the input supplied and the resources for an extension work, his impact cannot be felt. Indeed, the effectiveness of extension agents often determines the success or failure of an extension programme. An extension agent usually works with people, he is an educated, professionally trained person that work with farmers, many of who might have had little or no formal education and live in rural areas (Ogala, 1998).

The basic role or an extension agent is to bring changes into rural areas such as new skills to improve or boost agricultural production and marketing of such produce. The method and language used to communicate these are essential. Therefore, there is need to look into that may allow gaps in communicate these are essential. Therefore, there is need to look into areas that may allow gaps in communication between an extension worker and his client which has been one of the major reasons why the clients deviate from information passed to them by extension workers.

The problem of multilingual access to information resources can be seen as an extension of the general information retrieval problems and it is becoming increasingly relevant. English has remained uncontested in the dominance but attention must now be given to other languages and subsequently the development of tools and methodologies to enable this. Consequently, the urgent mission is to demolish the language barrier to broaden information access into multilingual. By combining information retrieval with language translating, the multilingual information access system provides a way for monolingual users to gain access to information in other languages by using own native languages (Oladimeji, 2006). This technique has been explored in many countries of Asia, such as Japan, Vietnam, Thailand, China and Indonesia with the attendant transformation of agriculture and improvement in the economy.

In Nigeria, the low literacy level of farmers necessitates the need for the use of multilingual system to provide agricultural information in Nigerian languages will maximize the exploration of the full potential of the information services. This will enable extension message to reach all farmers irrespective of their mother tongue or ethnic language. The present communication gap problem resulting from cultural background of the languages of an extension worker and his clients dialect difference is another.

Objective of the Study

The broad objective of this study is to examine the role of extension agents as a disseminator of improved agricultural technology to farmers in Bosso Local Government Area of Niger State. The specific objectives are to:

(i) examine the socio-economic profile of farmers in the study area;

(ii) ascertain the effectiveness of the languages being used;

(iii) determine the role of communication in an extension work;

(iv) identify strategies employed for effective understanding of agricultural ideas to farmers and;

(v) make recommendations based on the findings.

METHODOLOGY

Bosso Local Government Area was created in 1991. It has a population of one hundred and forty seven thousand, three hundred and fifty nine people (NPC, 2006). Its position is on longitude $6^0$28'E and latitude $9^0$14'N. It is one of the twenty five Local Government Area in Niger State. Bosso Local Government Area is predominantly inhabited by Gwaris and other tribes like Nupe, Hausa, Koro, Kadara and Yoruba. The major occupation of the inhabitants is farming.

The study was carried out between August-November, 2008. Data were collected through structured questionnaire. For those who cannot read and write, it was translated to their local dialect and responses were recorded. The study area was purposively chosen due to the long history of farming activities. Four villages out of twenty two were selected in the study area,

namely, Maikunkele, Garatu, Gidan Mangoro and Bosso. Forty questionnaires were administered in each villages giving a total of one hundred and sixty respondents. However, one hundred and fifty seven questionnaires were returned and used for data analysis.

Data were analysed using frequency distribution, percentages, likert scale and Maximum Likelihood Estimate (MLE). The effectiveness of language used in disseminating agricultural techniques was analysed using Likert-Scale by generating Maximum Likelihood Estimate (MLE). Likert-Scale is a scale of measuring qualitative attitude such as effectiveness. A person's score on the final scale is simply by summing up the weights of the alternatives he/she has checked. Weights are usually assigned such that high scores indicate effectiveness and low score indicates ineffectiveness following Blum and Naylor (1984), Tanko and Ibeawuchi (2006). For perception effecting effectiveness, positive statements are assigned scores as:

Very effective = 5, effective = 4, undecided = 3, ineffective = 2, very ineffective = 1

Decision

$$\text{Mean} = \frac{\sum fx}{\sum f} = \frac{5+4+3+2+1}{5} = \frac{15}{5} = 3$$

Therefore, for mean perception greater than 3 – effective language used for mean perception less than 3 – ineffective language.

Model Specification

The probit model is specified in implicit form as follows:

$Y = F(X_1, X_2, X_3, X_4, X_5, X_6, U)$

Where

Y = Technology dissemination proxied by the effectiveness of the language used in dissemination (whereby: very effective = 5, effective = 4, undecided = 3, ineffective =2, very ineffective = 1).

X_1 = Age (years)

X_2 = Level of education (number of years spent in school whereby: primary = 6, secondary = 12, post secondary = 16, Quranic = 2)

X_3 = Years of farming experience

X_4 = Communication proxied by number of languages spoken by the respondents

X_5 = Distance of village from extension agent's residence

X_6 = Gender (binany variable male = 1, female = 2)

U = error term.

There is low preponderance of educated farmers in the study area, the implication is that many of the farmers will not be able to understand the technology much less implement it to improve their farming activities. Majority of the farmers (85.4%) have more than 20 years farming experience, hence, they are well knowledgeable in farming.

Role of communication in technology dissemination

The role of communication in technology dissemination was observed in the maximum likelihood estimates. The results of the probit analysis are presented in table 2.0.

The results presented in table 2.0 indicate that the pearson goodness of fit x^2 is 239.049 which implies that the independent variables included in the model are jointly adequately explaining the dependent variable. Out of the six modeled, five of them namely age, education, communication, distance and gender were significant. This implies that age, education, communication, distance and gender have a positive and significant relationship with the level of adoption of innovations. For age and distance, the maximum likelihood estimate is positive and significant at 1% level of significance which implies a direct relationship between age, distance and adoption. For education, communication and gender the maximum likelihood estimate is negative which implies an inverse relationship between education, communication, gender and adoption.

TABLE 2.0 Maximum Likelihood Estimate of Factors influencing Dissemination of Improved Technology in Bosso LGA

Parameter	Estimate	Std error	Z	Decision
Age	0.0001***	0.003	0.200	Significant
Education	-0.015**	0.006	-2.400	Significant
Experience	-0.005	0.003	-1.564	Not Significant
Communication	-0.079**	0.37	-2.113	Significant
Distance	0.050***	0.004	11.614	Significant
Gender	-0.104*	0.059	-1.771	Significant
Intercept	- 1.649***	0.145	-11.397	Significant

Pearson goodness of fit chi square = 239.049

*(Note: ***,**,* implies statistically significant at 1%,5% and 10% levels respectively).*

Language best understood by the farmers.

The language that the farmers understand best when used in communication has a great impact.

Table 3.0 shows that only 1.3% of the farmers understand English, 5.1% understand Hausa, 7.6% understand Nupe and majority 86.0% understands Gwari. The implication is that if English language is used to communicate improved techniques, the chances of adoption is very low.

TABLE 3.0 Language that the farmer understand best

Language	No of respondents	Percentage (%)
English	2	1.3
Hausa	8	5.1
Nupe	12	7.6
Gwari	135	86.0
Total	**157**	**100.0**

Strategies for Effective Dissemination of Improved Technologies

Strategies were found that could be employed for effective dissemination of improved technologies, they are presented in Table 4.0. The suggested strategies in Table 4.0 shows that 17.9% of the respondents are of the view for employment of more female extension agents, 49.2% are of the view that employment of those who understand and speak their own language (Mother tongue) constituting the highest percentage while 32.9% are of the opinion that provision of planting materials and subsidies of agricultural products by stakeholders will be effective. This implies that if multilingual speaking is encouraged, more farmers will adopt innovation more quickly leading to higher output (Oladimeji, 2006).

Table 4.0 Strategies for effective dissemination of improved technologies

Strategies	Number	Percentage(%)
Employment of more female extension agents	80	19.9
Employment of those who speak their own language	220	49.2
Provision of planting materials and subsidies	147	32.9
Total	**447***	**100.0**

** Multiple Responses*

CONCLUSION AND RECOMMENDATIONS

Based on the study conducted, communication plays a vital role in the adoption of improved technologies. The diversity of the languages in Nigeria presupposes that for farmers to have access to agricultural information sources, multilingual sources should be employed.

The following recommendations are suggested.

1. Accessibility to technology by farmers should be enhanced by removing language barriers through the employment of those who speak their own language and multilingual presentation.
2. Stakeholders should provide farm inputs at subsidized rates.

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