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## Effect of Quality Service Indicators on the Attitude of Farmers towards Demand-driven Extension Services in Niger State, Nigeria

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### Abstract

This study examined the effect of quality service indicators on the attitude of farmers towards demand-driven extension services in Niger State, Nigeria. Primary data for the study were collected through a cross-sectional survey using interview schedule. Data collected were analyzed using descriptive statistics and multiple regression models. Result of the study shows that almost 86.0% of the respondents acquired formal education. With respect to the respondents' attitude towards demand-driven extension services, 98.9% showed favourable attitude while 1.1% were neutral. Findings further revealed that quality service indicators of content accuracy, relevance, timeliness and effectiveness of extension services had significant positive effect on farmer's attitude towards demand-driven extension services ( $P < 0.05$ ), while efficiency of extension services had significant negative effect on farmers' attitude towards demand-driven extension services. It was therefore recommended that the extension service providers should always strive to provide high quality services to ensure and sustain farmers' favourable attitude towards demand-driven extension services. It was also suggested that government policy should be created to favour demand-driven extension service providers to function where they have the comparative advantage in providing farmers with relevant extension services.

**Keywords:** farmers, demand driven extension, attitude, quality

### INTRODUCTION

Several factors influenced the search and development of demand-driven extension approach which is different from the Training and Visit and linear Transfer of Technology (ToT) upon which the extension delivery services largely depend. According to Alex *et al.* (2002) the failure of the traditional approaches that were premised on flawed models and philosophy necessitate the search for alternative extension approach. For instances, Vyas (2003) contends that T and V system played a significant role in the Green Revolution. However, it was not well suitable for the different farming system of rain fed areas and therefore incapable of meeting the challenges of the post green revolution era, including improving the sustainability of farming system, promoting agricultural diversification and integrating farmers into dynamic markets.

Another reason for the emergence of demand-driven extension service as indicated by Gustafson (2002) is the entrance of the non-government agencies into the agricultural and rural development sector. These agencies are more concerned with quick impact development projects and accountability. Thus the donor communities are showing preference in working with and supporting these NGOs because of their track records. Similarly, the dwindling resources of both the extension funders and users has force a reassessment and comparison of alternative for cost-effectiveness, impact and appropriateness within fragile and diverse environments (Abubakar, 2009).

In their report, FAO/WB (2000) stressed that the current wave of globalization and liberalization in the world market has seriously fueled the search for alternative extension system such as demand-driven extension system that is flexible and readily respond to conditions of either opportunities or crises. The demand-driven extension service system also addresses the challenges related to the financing and promotes delivering of agricultural extension services that are best suited to community- specific frame conditions, product or commodity- specific needs and political or economic priorities. Its purpose is to bring about shift from supply-driven to demand-driven extension services. These backgrounds bring to focus what is the effect of performance indicators on the attitude of farmers towards demand-driven extension services. Knowledge of the effect of performance indicators on the attitude of farmers would be useful to the extension service providers in deploying its staff in a more effective manner so as to optimize their impact and achieve the best possible results. The specific objectives of the study are to:

- i. examine the socio-economic characteristics of the farmers;
- ii. determine the attitude of farmers towards demand-driven extension services; and
- iii. determine the effect of quality service indicators on the attitude of farmers towards demand-driven extension services.

**METHODOLOGY**

**Study area:**

This study was conducted in Niger State. The State falls within latitudes 8<sup>0</sup>-10<sup>0</sup>N and longitudes 3<sup>0</sup>-8<sup>0</sup> East. It is located in the Southern Guinea Savanna ecological zone of Nigeria. Rainfall is steady and is evenly distributed usually between May and November each year, varying from 1,100mm in the North to 1,600mm in the South, peaking in August. The major arable crops grown include maize, cassava, vegetables, rice, yam, millet, cocoyam, potato, cowpea, groundnut, guinea corn, fruits and sugarcane. The major tree crops cultivated are oil palm, mango, citrus, coconut, cashew, banana and pawpaw. Livestock reared include goat, sheep, cattle, chicken and donkey (Niger State Agricultural Development Project, 2002).

**Sampling procedure and sample size**

The population for the study was made up of all farmers participating in the demand-driven extension delivery system of National *Fadama* Development Project II in Niger State, Nigeria. Multi-stage sampling technique was used to select the respondents from the three Agricultural Zones in the State (Zones I, II and III). In the first stage, three Local Government Areas (LGAs) were randomly selected from each zone, while in the second stage three *Fadama* Associations (FAs) were randomly selected from each LGA. Thereafter, two *Fadama* User Groups (FUGs) were selected at the third stage from each FA. Based on the proportion of farmers in each FUG, a total of 377 farmers were selected for the study at the fourth stage.

**Data collection and measurement of variables**

Primary data were collected through a cross-sectional survey of farmers, using interview schedule. Age and education were measured in years while farm size and farm income were measured in hectares and naira respectively. Quality service indicators of content accuracy, relevance, timeliness, effectiveness and efficiency of demand-driven extension services were measured in 3 points Likert rating scale.

The attitudes of the respondents were determined using 5- points Likert rating scale of which responses to positive statements were scored as strongly agree =5, agree=4, undecided=3, disagree=2 and strongly disagree=1, while responses to negative statements were scored in the reverse order. For the purpose of this study, twenty (20) attitudinal statements were presented to the respondents (i.e.10 positive and10 negative statements) and scored according to their responses. The total attitude score for each respondent was calculated. Each respondent can score a minimum of 20 and maximum of 100. The farmers' attitude scores were grouped into three categories: unfavourable, undecided and favourable. Laogun (1999) and Hamidu *et al.* (2005) conducted similar studies.

**Data analysis**

Descriptive statistics such as frequency and percentages were used in achieving objectives 1 and 2 of the study, while multiple regression analysis was carried out to determine the effect of quality service indicators on the attitude of the respondents towards demand-driven extension services (objective 3). The multiple regression models were implicitly specified as:

- Y = f (X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub>) .....1
- The four functional forms were expressed in the explicit form as:
- Linear: Y = b<sub>0</sub> + b<sub>1</sub>X<sub>1</sub> + b<sub>2</sub>X<sub>2</sub> + b<sub>3</sub>X<sub>3</sub> + b<sub>4</sub>X<sub>4</sub> + b<sub>5</sub>X<sub>5</sub> + U .....2
- Double-log : lnY=lnb<sub>0</sub>+b<sub>1</sub>lnX<sub>1</sub>+b<sub>2</sub>lnX<sub>2</sub>+b<sub>3</sub>lnX<sub>3</sub>+b<sub>4</sub>lnX<sub>4</sub>+b<sub>5</sub>lnX<sub>5</sub>+ U .....3
- Exponential: lnY = b<sub>0</sub> + b<sub>1</sub>X<sub>1</sub> + b<sub>2</sub>X<sub>2</sub> + b<sub>3</sub>X<sub>3</sub> + b<sub>4</sub>X<sub>4</sub> + b<sub>5</sub>X<sub>5</sub>+U .....4
- Semi-Log: Y=lnb<sub>0</sub> + b<sub>1</sub>lnX<sub>1</sub>+b<sub>2</sub>lnX<sub>2</sub>+b<sub>3</sub>lnX<sub>3</sub>+b<sub>4</sub>lnX<sub>4</sub>+b<sub>5</sub>lnX<sub>5</sub>+U .....5

- Where:
- Y = attitude score
- X<sub>1</sub> = Content accuracy of extension services (3 points Likert rating scale)
- X<sub>2</sub> = Timeliness of extension services (3 points Likert rating scale)
- X<sub>3</sub> = Relevance of extension services (3 points Likert rating scale)
- X<sub>4</sub> = Effectiveness of extension services (3 points Likert rating scale)
- X<sub>5</sub> = Efficiency of extension services (3 points Likert rating scale)
- ln = logarithm
- b<sub>0</sub> = constant
- b<sub>1</sub> - b<sub>5</sub> = coefficients
- U = error term

## RESULTS AND DISCUSSION

### Socio-economic characteristics of respondents

Table 1 indicated that about 60.0% of the respondents were within the age range of 31-50 years while 5.3% of the respondents were above 60 years. Only 4.8% of the respondents were within 11- 20 years of age. The mean age of the respondents was 40.65 years. The respondents can be said to still possess the strength for farming and therefore disposed to extension services which could place the respondents in the position they could pass objective judgment on the effectiveness of demand-driven extension services. Finding further reveals that 85.1% of the respondents acquired one form or the other of formal education. Considering the fact that most of the respondents were literate in the study area, they could be easily educated. Nnaemeka (2010) is of the view that farmers with basic western education are more likely to be perceptive to the benefits of the extension services. The average farm size of the respondents was 2 hectares while the mean farm income was ₦235,546. This implies that majority of the respondents in the study area were small-scale farmers and this is probable responsible for low level of farm income in the area.

Table 1: Socio-economic characteristics of the respondents

Variables	Frequency	Percentage
<b>Age range (years)</b>		
11- 20	18	4.8
21-30	57	15.1
31-40	132	35.0
41-50	94	24.9
51-60	56	14.9
61-70	20	5.3
Mean	40.65	
<b>Education level</b>		
No formal education	53	14.1
Adult education	68	18.0
Primary education	69	18.3
Secondary education	125	33.2
Diploma/ NCE	52	13.8
First degree	9	2.3
Master degree	1	0.3
Total	377	100.0
<b>Farm size (ha.)</b>		
0.1-1.0	33	
1.1-2.0	226	8.8
2.1-3.0	82	59.9
3.1-4.0	22	21.8
4.1-5.0	14	5.8
Total	377	3.7
Mean	2	100.0
<b>Farm income (₦)</b>		
≤1000,000	37	
100,000-200,000	121	9.9
201,000-300,000	134	32.1
Above 300,000	85	35.5
Total	377	22.5
Mean	235,546	100.0

Source: Field survey, 2012.

### Attitude of farmers towards demand-driven extension services

Result in Table 2 revealed that 98.9% of the respondents had favourable attitude towards demand-driven extension services in the study area, while the remaining 1.1% of the respondents showed neutral attitude towards demand-driven extension services. Majority of the respondents have favourable attitude towards demand-driven extension services because they considered demand-driven extension services as a reliable, timely and effective source of farm information for improving their output and income.

Table 2: Distribution of respondents according to their attitude towards demand-driven extension services

Farmers' attitude scores	Frequency	Percentage
20 – 46 (unfavourable)	0	0.0
47 – 73 (neutral)	4	1.1
74 – 100 (favourable)	373	98.9
Total	377	100.0

Source: Field survey, 2012.

### Effect of quality service indicators on the attitude of farmers towards demand-driven extension services

The attitudinal score was regressed against the explanatory variables of content accuracy of extension services ( $X_1$ ) relevance of extension services ( $X_2$ ) timeliness of extension services ( $X_3$ ) effectiveness of extension services ( $X_4$ ) and efficiency of extension services ( $X_5$ ). The four functional forms examined were linear, semi-log, double -log and exponential equation. From the regression analysis, the lead equation selected was exponential based on its higher constant and adjusted  $R^2$  values as well as more number of significant independent variables. From the lead equation result in Table 3, all variables including content accuracy of extension services ( $X_1$ ), relevance of extension services ( $X_2$ ), timeliness of extension services ( $X_3$ ), effectiveness of extension services ( $X_4$ ), and efficiency of extension services ( $X_5$ ) had significant effect on farmers' attitude towards demand-driven extension services at 5% level of significance.

The positive significant effect of content accuracy of extension services on farmers' attitude towards demand-driven extension services implies that the greater the perceived exactness of extension services, the more favourably farmers' attitude would be towards demand-driven extension services. This is likely because of the usefulness of the extension services to the farmers. The result also reveals that relevance of extension services had positive significant effect on farmers' attitude towards demand-driven extension services. This result is not surprising, considering the fact that any information or message that is considered very relevant or compatible with farmers' needs would stimulate higher favourable attitude. This result is consistent with the findings of Onwubuya (2005) who reported that when a person finds a relevant situation that relate to him, his response tends to be consistent with the attitude.

The result in Table 3 further indicates positive significant effect of timeliness of extension services on farmers' attitude towards demand-driven extension services. This result perhaps emphasize the fact that when extension services are delivered promptly at the time of need, it would enable the farmers to quickly put to practice what they learn to address problem peculiar to time and season. In a previous study, Umar (2006) noted that prompt dissemination of information to farmers speeded up the application of improved technologies and to some extent helped resolve the problems of disconnection between agricultural innovations and the practical needs of the farmers. In the same manner, the result indicated that effectiveness of extension services contributed significantly in predicting farmers' attitude towards demand-driven extension services. This result is expected because the degree to which extension services produce beneficial result to farmers in terms of output and income would determine their attitude towards demand-driven extension services. However, efficiency of extension services had significant inverse relationship with farmers' attitude towards demand-driven extension services. Efficiency is enhanced by years of experience, but with advancement in age, efficiency would reduce due to ageing factor, which would consequently affect farmers' attitude towards demand -driven extension services.

The relationship between the dependent and the independent variables was significant at 1% as revealed by F-ratio ( $F=122.878$ ,  $P<0.01$ ) in Table 3, which is an indication that the effectiveness of the combination of the independent variables in predicting farmers' attitude towards demand-driven extension services could not have occurred by chances. The result also indicates that the  $R^2$  value for the lead equation was 0.623 which implies that the independent variables included in the model accounted for 62.3% variation in the farmers' attitude towards demand-driven extension services. Therefore, the result revealed that farmers would respond favourably to demand-driven extension services when combination of quality service indicators of accuracy, relevance, timeliness, effectiveness and efficiency of extension services are guaranteed. Thus, the success of demand-driven extension services would depend on provision of combination of quality service indicators by the service providers.

Table 3: Result of the estimated lead equation for multiple regression analysis.

Variables	Coefficients	Standard error	t-value	P-value
Constant	3.516	.039	91.050*	.000
X <sub>1</sub> accuracy	.117	.015	7.864*	.000
X <sub>2</sub> relevance	.070	.013	5.374*	.000
X <sub>3</sub> timeliness	.065	.015	4.382*	.000
X <sub>4</sub> effectiveness	.043	.015	2.824*	.005
X <sub>5</sub> efficiency	-.025	.013	-1.950*	.052
Std error	0.6510			

R<sup>2</sup> 0.623

F-ratio 122.878\*\*

Source: Field survey data, 2012

\* = Significant at 5% level

\*\*= Significant at 1% level

### Conclusion

From the findings of the study, it can be concluded that majority of the respondents in the study area have favourable attitude towards demand-driven extension services of which content accuracy, relevance, timeliness and effectiveness of extension services contributed significantly and positively to farmers' attitude towards demand-driven extension services. Moreso, when the five quality service indicators considered in this study are taken together, the indicators were found to be effective in predicting farmers' attitude towards demand-driven extension services.

### Recommendations

The quality service indicators had significant effect on farmers' favourable attitude towards demand-driven extension services. It was therefore recommended that the service providers should always strive to provide high quality services (in terms of content accuracy, relevance, timeliness and effectiveness of extension services) to their clients to sustain farmers' favourable attitude towards demand-driven extension services.

The strong effect of the quality service indicators on the attitude of farmers is an indication of good performance by demand-driven extension service providers. Therefore, it was recommended that government policy should be created to favour demand-driven extension service providers to function where they have the comparative advantage in providing farmers with relevant services.

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