

Attitude of Fadama Farmers towards Demand-driven Extension Delivery System in Niger State, Nigeria

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Abstract

The study examined the attitude of fadama farmers towards demand-driven extension services in Niger State, Nigeria. Multi-stage sampling technique was used to select a total of 377 respondents for the study. Interview schedule was employed for data collection. Data collected were analyzed using both descriptive and inferential statistics. Finding of the study showed that majority of the farmers had favourable attitude towards demand-driven extension delivery system. Major perceived problem for demand-driven extension delivery system was insufficient information about the service providers with 56.2% response rate. Result of the Chi-square test showed significant relationship between age ($X^2=1164.8, P<0.05$), education ($X^2=1157.8, P<0.05$), farm income ($X^2=8719.5, P<0.05$) and farmers' attitude towards demand-driven extension delivery system. Based on the findings, it was recommended that demand-driven extension service providers should increase their publicity drive to create the necessary awareness among farmers about their services. Similarly, it was suggested that efforts should be made to improve socio-economic characteristics of farmers such as education and income, in order to increase their consciousness and ability to afford services.

INTRODUCTION

Nigeria Government introduced the second National *Fadama* Development Project in 2004 to increase the income of small-scale farmers, poor and other vulnerable members of the society such as women, unemployed youth and widows. The project strategy represented a shift from public sector dominated to a community driven development approach, which is developed around community defined priorities. In its approach, the participatory component of the project was based on groups with similar economic interests. Importantly, the project encouraged these economic interest groups to develop plans and when the plan is approved, each group requested for money and demand-driven extension services (Niger State Agricultural Development Project, 2010).

International Development Association IDA (2009) reported that *Fadama* II project increased household incomes by an average of sixty percent between 2005 and 2007, which surpasses the initial goals of twenty percent increase. The report further indicated that the project increased the capacity of participants to manage economic activities. The project also led to five hundred and ninety percent increases in the value of group owned productive assets, while the individual assets (productive assets) of the beneficiaries improved by forty nine percent. Similarly, the average value of productive assets increased from US \$90 to US \$3,990 for the poor. The project also enhanced better rural transport, improved livestock management, fund management and better agricultural marketing skills.

As a result of the success of *Fadama* II, which was largely attributed to the usage of demand-driven extension service approach, government is seriously committed to the community-driven development approach and has broadened the scope of the project to cover all States in the form of *Fadama* III. Like its predecessor, the new *Fadama* III project is relying on demand-driven extension service and empowerment of local farmers with the aim of improving productivity (IDA, 2009). This background emphasizes the need to ascertain farmers' attitude towards demand-driven extension delivery system, in order to provide information on policy formulation for effective and efficient extension delivery system. The specific objectives of the study are to:

- i. describe socio-economic characteristics of the respondents;
- ii. determine respondents' attitude towards demand-driven extension services; and
- iii. ascertain perceived problems of demand-driven extension services by the respondents.

Hypothesis

There is no significant relationship between farmers' age, education level, farm size, income, and cooperative membership and their attitude towards demand-driven extension services.

METHODOLOGY

Study area

Niger State falls within latitudes 8⁰-10⁰N and longitudes 3⁰-8⁰ East. It is located in the Southern Guinea Savanna ecological zone of Nigeria. Annual rainfall ranges from 1,100mm in the North to 1,600mm in the South. Vegetation of the State consists of short and medium grasses, shrubs and scattered trees. *Fadama* and depressions are accessible to many communities. Major arable crops grown include maize, cassava, vegetables, rice, yam, millet, cocoyam, potato, cowpea, groundnut, guinea corn, fruits and sugarcane. Livestock reared include goat, sheep, cattle, chicken and donkey (Niger State Agricultural Development Project, 2002).

Sampling technique 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. In order to get a representative sample, the sample design was based on National *Fadama* Development Project activities in the State. In line with the above consideration, multi-stage sampling technique was used to select respondents for the study. In the first stage, three Local Government Areas (LGAs) were selected from each of the three agricultural zones, while in the second stage three *Fadama* Community Associations (FCAs) were randomly selected from each LGA. Thereafter, two farmers' *Fadama* User Groups (FUGs) were selected in the third stage from each FCA. 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 analysis

Primary data were collected through a cross-sectional survey of farmers, using interview schedule and Data were collected on socio-economic characteristics and perceived problems of demand-driven extension services, while the attitude of the respondents was determined using 5-points Likert rating scale. 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. To determine farmers' attitude towards each of the attitudinal statement, the values of the scale (1+2+3+4+5) were summed up to get 15. The sum was further divided by 5 to obtain 3 which is the mean. The cut-off means score of 3.0 was considered as the decision point. A mean score of 3 and above depicts a favourable attitude towards a statement, while a mean score below 3.0 was considered as unfavourable attitude towards a statement. Data collected were analyzed using descriptive statistics, while chi-square was used to test the study hypothesis.

RESULTS AND DISCUSSION

Socio-economic characteristics

Finding in Table 1 showed that about 60.0% of the respondents were within the age range of 31-50years, while 5.3% of the respondents were above 60years. The mean age of the respondents was 40.65years. This result is in line with the finding of Akinola (2003) who indicated that age of a typical farmer participating in *fadama* project was 40 years. This implies that innovativeness of the respondents in the study area can be greatly enhanced, because of the disposition of this age category to agricultural news and information.

Table 1 also revealed that 33.2% of the respondents had secondary education, 18.3 % and18.0% had primary and adult education, respectively. Furthermore, 2.3% of the respondents were educated up to first degree level. The more educated the respondents are, the more likely they would have more insight into the comparative advantages of demand-driven extension services. Considering the fact that most of the respondents were literate in the study area, they could be easily educated. For the uneducated respondents, the use of local dialect in communicating extension messages will be necessary to ensure adoption of any proven farm technologies.

Table 1 indicated that about 60.0% of the respondents had farm sizes of between 1.1 to 2 hectares. It was also evident from the finding that 31.3% of the respondents had farm sizes greater than the mean farm size of 2 hectares. The result also indicated that 8.8% of the respondents had farm sizes of between 0.1 and 1.0 hectare. This implies that the respondents in the study area were small-scale farmers and this is probable responsible for low level of farm income in the area. This result is in agreement with the findings of Ndanitsa (2005) who reported that most farmers in Niger State had small farm holdings of between 0.1 and 1.0 hectare. Farmers with large farm sizes have greater probability to demand for agricultural extension services than those with small farm lands.

Table 1 showed that the annual farm income of 67.6% of the respondents ranged between ₦1000, 000 and ₦300, 000. The farm income per annum for 22.5% of the respondents was above ₦300,000. This implies that majority of the respondents were low income earners. The mean farm income of ₦235,546 of the respondents validates this assertion. This result is in line with the finding of Olaleye, Umar and Ndanitsa (2009) who noted low financial returns among small-scale farmers in Niger State. However, annual farm income of the respondents is expected to have effect on the willingness of the farmers to pay for demand-driven extension services, because the higher the level of income of farmers, the more likely they would be willing to pay for extension services.

Finding of the study in Table 1 further revealed that 91.8% of the respondents were ordinary members of their associations and 3.4% of the respondents were secretaries of their associations. The result further indicated that 2.7% of the respondents were financial secretaries, while 2.1% of the respondents hold the positions of leadership. This membership of the respondents in

associations could enhance social capital formation, increase access to agricultural inputs, services and credit.

Table 1: Socio-economic characteristics of the respondents

| Variables | Frequency | Percentage |
|-------------------------------|-----------|------------|
| Age range (years) | | |
| 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 | |
| Education level | | |
| 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 |
| Farm size (ha.) | | |
| 0.1-1.0 | 33 | 8.8 |
| 1.1-2.0 | 226 | 59.9 |
| 2.1-3.0 | 82 | 21.8 |
| 3.1-4.0 | 22 | 5.8 |
| 4.1-5.0 | 14 | 3.7 |
| Total | 377 | 100.0 |
| Mean | 2 | |
| Farm income | | |
| ≤1000,000 | 37 | 9.9 |
| 100,000-200,000 | 121 | 32.1 |
| 201,000-300,000 | 134 | 35.5 |
| Above 300,000 | 85 | 22.5 |
| Total | 377 | 100.0 |
| Mean | 235,546 | |
| Cooperative membership | | |
| Leader | 8 | 2.1 |
| Secretary | 13 | 3.4 |
| Member | 346 | 91.8 |
| Financial secretary | 10 | 2.7 |
| Total | 377 | 100.0 |

Source: Field survey, 2012.

Attitude towards demand-driven extension delivery system

Table 2 showed the mean scores and standard deviation of the respondents' attitude towards demand-driven extension services. The finding revealed that the respondents expressed favourable attitude towards 16 statements out of the 20 statements concerning demand-driven extension services. Among these statements, 9 were positive statements, while 7 were negative statements. Meanwhile, only four statements namely: demand-driven extension services linked the respondents with market opportunities ($\bar{x}=2.01$); lack of rural infrastructures affected the respondents' access to demand-driven extension services ($\bar{x}=2.40$); lack of collective action and viable association are affecting the respondents' demand for extension services ($\bar{x}=2.32$); and some service providers had limited personnel ($\bar{x}=2.98$) had unfavourable attitude from the respondents.

Specifically, the following positive statements recorded favourable attitude from the respondents; demand-driven extension services made service providers to render quality services ($\bar{x}=4.33$); demand-driven extension services increased farmers' access to extension services ($\bar{x}=4.21$); demand-driven extension services increased output and income ($\bar{x}=4.40$); demand-driven extension services encouraged respondents' to express their right as information consumers ($\bar{x}=3.98$); demand-driven extension services made extension services to be more relevant and responsive to farmers' needs ($\bar{x}=4.41$); demand-driven extension services increased farmers' influence over extension services provision ($\bar{x}=3.98$); farmers are willing to pay for demand-driven extension services if the services are effective and efficient ($\bar{x}=4.62$); The delivery system of demand-driven extension services made service providers to be accountable

to farmers ($\bar{x}=4.29$) and participation in demand driven extension services improved farmers' socio-economic status ($\bar{x}=3.16$).

However, the respondents disagreed with the following negative statements ;demand-driven extension services is not very suitable for farmers who grow specific crops ($\bar{x}=3.43$); demand-driven extension services do not benefit a subsistence farmer ($\bar{x}=3.63$); demand-driven extension service providers are not trustworthy and honest ($\bar{x}=3.83$); contents of demand -driven extension services delivery are not accurate ($\bar{x}=3.88$); demand-driven extension services are too costly ($\bar{x}=3.85$); demand-driven extension services delivery are not timely ($\bar{x}=3.90$) and lack of credit limited access to demand driven extension services ($\bar{x}=3.04$).

This result revealed that most of the respondents had strong positive attitude towards the demand-driven extension service delivery. Furthermore, the low standard deviations from the means for all the responses, shows that the respondents' individual score regarding their attitude towards the demand-driven extension services did not differ from the mean score.

In this study, specific statements which attracted the most favourable attitude from the respondents include; farmers willing to pay for demand-driven extension services if the services are effective and efficient ($\bar{x}=4.62$), demand- driven extension services made services to be more relevant and responsive to farmers needs ($\bar{x}=4.41$) and demand-driven extension services has increased output and income ($\bar{x}=4.40$).

This finding implies that farmers are willing to pay for services, if high quality extension services can be provided. This result also showed that the respondents are aware that the demand-driven extension delivery system operated in the *Fadama* programme has increased their output and income. This finding agrees with IDA (2009) who noted in their impact

evaluation study that the usage of demand-driven extension services approach in *Fadama II* has boosted income for 2.3 million farming families in 12 States of Nigeria, including Niger State.

Table 2: Attitude of respondents towards demand- driven extension services

| Attitudinal statements | Mean | Std/dev. | Remarks |
|--|------|----------|--------------|
| 1.Demand driven extension services make service providers to render quality service to me. | 4.33 | 1.099 | favourable |
| 2.Demand driven extension services increased my access to extension services. | 4.21 | 0.775 | favourable |
| 3.Demand driven extension services increased my output and income. | 4.40 | 0.781 | favourable |
| 4.Demand driven extension services have encouraged me to express my right as information consumer. | 3.98 | 1.271 | favourable |
| 5.Demand driven extension services made services to be more relevant and responsive to my needs. | 4.41 | 0.780 | favourable |
| 6.Demand driven extension services have increased my influence over extension services provision. | 3.98 | 1.271 | favourable |
| 7. I am willing to pay for demand-driven extension if services are effective and efficient. | 4.62 | 0.722 | favourable |
| 8. The delivery system of demand driven extension services make service providers accountable to me. | 4.29 | 1.167 | favourable |
| 9.Demand driven extension services link me with market opportunities. | 2.01 | 0.909 | unfavourable |
| 10.Participation in demand driven extension services has improved my socio-economic status. | 3.16 | 1.300 | favourable |
| 11.Demand driven extension services is not very suitable for me because I grow specific crops. | 3.43 | 1.075 | favourable |
| 12 Lack of rural infrastructure has affected my access to demand driven extension services. | 2.40 | 0.949 | unfavourable |
| 13.Lack of collective action and viable association is affecting my demand for extension services. | 2.32 | 0.876 | unfavourable |
| 14.Some service providers have limited personnel for agricultural technology dissemination. | 2.98 | 1.021 | unfavourable |
| 15.Demand driven extension services do not benefit me much, because I am a subsistence farmer. | 3.62 | 0.948 | favourable |
| 16. Demand driven extension service providers are not trustworthy and honest. | 3.83 | 0.635 | favourable |
| 17.Contents of demand driven extension services are not accurate to me. | 3.88 | 0.651 | favourable |
| 18.Demand driven extension service are too costly for me to afford. | 3.85 | 0.752 | favourable |

| | | | |
|--|------|-------|------------|
| 19.Demand driven extension services delivery are not timely. | 3.90 | 0.835 | favourable |
| 20.Lack of credit has limited my access to demand driven extension services. | 3.04 | 1.588 | favourable |

Source: Field survey, 2012

Perceived constraints of demand-driven extension services

The finding in Table 3 indicated that Majority (56.2%) of the respondents lack sufficient information about the service providers. Also, 41.1% of the respondents in the study area perceived inconsistency in government policies as a major problem in relation to demand-driven extension delivery system. This result corroborated with Bua *et al.* (2004) who stressed that lack of policy, law and guideline are problems confronting demand-driven extension services in developing countries. From the result, 39.0% of the respondents perceived Nigerian's corrupt attitude as a problem. Other perceived problems were in this order: high cost of services (27.9); lack of viable association (26.5%); insufficient service providers (19.1%); poor methods of extension service delivery (9.0%); lack of competent and specialized service providers (8.5%); and poor qualities of services providers (4.5%). Therefore, solving these problems will serve as a basis for farmers' continuous participation in the demand-driven extension delivery system.

Table 3: Distribution of respondents based on their perceived problems for demand-driven extension services

| Perceived problems * | Frequency | Percentage |
|--|-----------|------------|
| Inconsistent government policies | 155 | 41.1 |
| Nigerian's corrupt attitude | 147 | 39.0 |
| High cost of services | 105 | 27.9 |
| Lack of viable associations | 100 | 26.5 |
| Lack of sufficient information about the service providers | 212 | 56.2 |
| Insufficient service providers | 72 | 19.1 |

| | | |
|---|----|-----|
| Lack of competent and specialized service providers | 32 | 8.5 |
| Poor methods of extension service delivery | 34 | 9.0 |
| Poor qualities of services providers | 17 | 4.5 |

Source: Field survey, 2012

* Multiple responses

Relationship between socio-economic characteristics and farmers' towards demand-driven extension services

The result of the Chi-square test in Table 4 showed that there was significant relationships between age and farmers' attitude towards demand-driven extension services ($X^2=1164.8$, $P<0.05$), this relationship is expected because increase in respondents' age could increase their level of acceptance of the new demand-driven extension system as a means of overcoming their agricultural information needs, which would consequently translate to favourable attitude. This result is in agreement with Adesope, Asiabaka and Matthews-Njoku (2006) who reported that age of farmers had positive significant relationship with attitude towards extension services. The authors added that the older the farmers, the more favourable their attitude towards extension services would be.

Moreover, the result indicated significant relationship between educational level and farmers' attitude towards demand-driven extension services ($X^2= 1157.8$, $P<0.05$). This stems from the fact that the more educated the respondents are, the more likely they would have more insight into the comparative advantages of demand-driven extension delivery system and respond more favourably to it. The finding also confirmed a significant relationship between farm income and farmers' attitude towards demand-driven extension services ($X^2 = 8719.5$, $P<0.05$). This implies that the higher the income of the respondents, the more favourable farmers' attitude would be towards demand-driven extension services, because of their greater ability to demand and pay for services than the low income farmers.

Table 4:Chi-square result for relationship between selected socio-economic characteristics and farmers' attitude towards demand-driven extension services.

| Variables | Chi-square value (X^2) | Df | P-value | Remark |
|------------------------|----------------------------|-----|---------|--------|
| Age | 1164.8 | 376 | P<0.05 | Sig. |
| Education | 1157.8 | 376 | P<0.05 | Sig. |
| Farm size | 234.58 | 376 | P>0.05 | NS |
| Farm income | 8719.5 | 376 | P<0.05 | Sig |
| Cooperative membership | 4.136 | 376 | p>0.05 | NS |

Computed from field survey data, 2012

Sig = significant at 5% level

Ns = Not significant

Conclusion

From the finding of the study, it can be concluded that majority of the farmers had favourable attitude towards demand-driven extension services. Age, education and farm income had significant relationship with farmers' attitude towards demand-driven extension services. The major perceived problem for demand-driven extension services in the area was insufficient information about the service providers.

Recommendations

In order to improve farmers' attitude towards demand-driven extension services, it was recommended that the service providers should always strive to provide complementary services to the farmers by linking them with market opportunities to enable them dispose their produce.

Demand-driven extension service providers should step-up their publicity and enlightenment drive on the type of services they offer and conditions for accessing them. Synergy with farmers' associations by actively involving them in activities would increase awareness and is also likely to improve the attitude that some of the farmers have about demand-driven extension delivery system.

More attention should be paid to the improvement of some the socio-economic characteristics of farmers such as education and income, in order to increase their consciousness of demand-driven extension services and ability to afford it.

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