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Factors Influencing Level of Satisfaction with Growth Enhancement Support Scheme among Farm Families in Kaduna State, Nigeria

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Abstract

This study assessed factors influencing the level of satisfaction with the Growth Enhancement Scheme among farm families in Kaduna State, Nigeria. Two hundred and ninety-six beneficiaries were selected randomly from four randomly selected wards. Descriptive statistics and multinomial logit regression model were used to analyze the data obtained. Results computed from a Likert Scale indicated that majority of the farmers were either satisfied (47.6%) or highly satisfied (14.3%) with the scheme; while 28.6% were dissatisfied and 4.1% were highly dissatisfied. The level of satisfaction with the scheme increased among families with higher farming experience (coefficient = 0.05) and education (coefficient = 0.008); while it decreased with age (coefficient = -0.394) and extension visit (coefficient = -0.328). The study recommended that the scheme be extended for another cycle of five years to consolidate on its achievements and alleviate the bottlenecks before handing over to the private sector.

Keywords: GESS, inputs, satisfaction, subsidy.

Introduction

Increasing agricultural productivity in Nigeria is an urgent necessity and one of the fundamental ways of improving agricultural productivity is through the introduction and use of improved agricultural technologies such as inorganic fertilizers (Amaza, 2000). Generally, fertilizer and plant nutrients are terms used to describe additives that increase soil fertility and its capacity of producing abundant crops. Nutrients are materials provided through the application of fertilizer to enhance the fertility of the soil; that is any of a large number of natural and synthetic materials including manure and compounds containing nitrogen, phosphorus and potassium (NPK) spread on or worked into the soil to increase its capacity to support plant growth (Houghton *et al.*, 2011). However, only about 16% of the soil resources in Africa have no serious limitation for crop production (Adesina, 2012). Furthermore, productive soils are being lost through mismanagement, erosion, encroachment of the desert, flood and deforestation (Babatunde, 2005). Organic manure

and plant residues are important sources of nutrient but they are unable to supply all the nutrients needed to grow food. Consequently there is no substitute for chemical fertilizers in meeting the requirements for plant nutrients. Moreover, modern crop varieties cannot achieve their genetic potential in terms of yields unless good soil fertility is maintained. This can be achieved economically and on a large scale through increased use of fertilizer (Babatunde, 2005).

In Nigeria, fertilizer subsidy occupies a central role in the policy tool of the government and this explains why the government at all levels have been involved in the procurement, distribution and price determination of fertilizer at various times. The involvement of the federal government in the fertilizer distribution system dates back to 1976 when it adopted a national fertilizer policy to ensure national self-sufficiency through local production, supplements through importation to ensure adequate and timely fertilizer supply to farmers, offer subsidy on the market price of fertilizer so as to make fertilizer affordable to smallholder farmers and ensure that the right quality fertilizer is accessible to smallholder farmers at the right time in the right place. The government huge budgetary expenditure on fertilizer subsidy notwithstanding, non-subsidized prices remained high. The nominal prices of fertilizer for a 50 kg bag escalated from 50 Naira in 1990 to 2000 Naira in 2001 compared to the official subsidy retail price of 900 per 50kg bag, suggesting that the federal and state government fertilizer subsidies are not fully transmitted to farmers (Liverpool, *et al.*, 2010). Furthermore, only about 30% of subsidized fertilizer reached smallholder farmers at the subsidized price (Edun, 2002).

Studies on stakeholders' perception on input subsidy initiatives in Nigeria show that fertilizer quality, price, access and availability are main constraints that affect the productivity and effectiveness of farmers in terms of agricultural production and sustainability. Findings revealed that farmers would use much more at prevailing market prices if the quality was good and if it was available when needed (Naggy, 2002). A similar study by Banful *et al.* (2010) on extension agent perception of challenge to farming in Nigeria found out that the primary constraint to fertilizer use in Nigeria is absence of the product at the time rather than affordability problems or farmer lack of knowledge about the importance of fertilizer. Also, Obisesan *et al.* (2013) reported in a survey of selected stakeholders' perception of the Nigeria fertilizer sector that the product did not reach targeted farmers because of the corruption that shrouded the procurement and delivery system.

The Growth Enhancement Support Scheme (GESS) aimed at solving these outlined problems through providing needed modern farm inputs on real time basis via e-wallet voucher system for redemption of the inputs from private agro-input suppliers. Therefore, this study was carried out to ascertain the level of beneficiaries' satisfaction with the scheme vis-à-vis the factors influencing their levels of satisfaction. Specific objectives of the study are: to describe the socio-economic characteristics of GESS beneficiaries in the study area; to assess the level of satisfaction of GESS beneficiaries in the study area; and to evaluate the socio-economic factors influencing the level of satisfaction of GESS beneficiaries.

Methodology

The study was carried out in Kaduna State of Nigeria. Kaduna State is located between latitude 09⁰ and 11⁰ N and longitude 06⁰ and 09⁰ E. The state has an estimated population of 6,766,562

people. The mean annual temperature varies between 24^oc and 28^oc. The vegetation consists of Northern Guinea savannah in the north and Southern Guinea savannah in the south. The length of rainfall varies from 150 days in the north and 190 days in the southern part. The annual rainfall varies from 1107mm in the north to 1286mm in the south. Relative humidity is low ranging between 60 and 80% in July. The soil pH (level of acidity/alkalinity) ranges from 5.5 and 6.5 characterize the soil which may be generally described as sandy-loam soil. The major economic activity of the inhabitants is farming and trading. The state occupies a major position in the agricultural economy of northern Nigeria. The State is made up of 23 Local Government Areas (LGAs). Kaduna State Agricultural Development Project (KADP), the state's agricultural extension outfit, is divided into four agricultural zones: Lere, Maigana, Samaru and Birnin-Gwari.

A multi-stage sampling procedure which involved a combination of purposive and random sampling techniques was adopted for this study. In the first stage, Maigana and Lere agricultural zones were randomly selected out of the four ADP zones in Kaduna State. Then, two (2) LGA with the highest number of beneficiaries were purposively selected out of each zone. Subsequently, 4 wards (redemption centres) were randomly selected, one out of each LGA. Finally, ten percent (10%) of the beneficiaries in each of the selected wards giving a total sample of 294 respondents were randomly selected as illustrated in Table 1. These were interviewed and primary data were obtained using structured questionnaires. Descriptive Statistics such as frequencies and percentages; and multinomial regression analysis were used to analyze the data which was obtained after the 2014 harvest season.

Table 1: Computation of sample size

Zone	LGA	Ward	Sample Frame	Sample Size
Maigana	Giwa	Galadimawa	879	88
	SabonGari	Zabi	747	75
Lere	Kubau	Haskiya	600	60
	Lere	Lazuru	711	71
Total	4	4	2937	294

Results and Discussion

Socio-economic Characteristics of the Respondents

Results in Table 2 show that the beneficiaries in the study area were largely male (78.9 %). This implies that more male farmers participated in and benefitted from the GESS. This is because, customarily, in most parts of the study area, women are secluded in *purdah* and restricted to domestic activities such as processing of agricultural produce and child bearing and upbringing. It was also found that about 70% of the respondents fall within the premium age bracket of 26 – 55 years. According to FAOSTAT (2006) 15 – 64 years of age are considered as the economic productive or active age.

In terms of educational attainment, 28.6% of the respondents had secondary education, 23.8% had primary education, 19.7% had tertiary education, 15.6% had no formal education and 12.3% had informal education such as Qur'anic training. Level of educational attainment can increase the ability of a farmer to access and interpret relevant information about agricultural innovations, facilitate managerial skills which in turn lead to efficient use of agricultural inputs to enhance productivity. Oluwatayo, (2009) found out that education had significant and positive relationship with farmers' level of awareness to innovation, diffusion and adoption of innovation.

Table 2: Socio-economic characteristics of beneficiaries

Variable	Percentage
Sex	
Male	78.9
Female	21.1
Age	
16-25	12.9
26-35	30.6
36-45	19
46-55	20.2
56-65	14.1
≥66	3.2
Educational attainment	
None	15.6
Informal education	12.3
Primary education	23.8
Secondary education	28.6
Tertiary education	19.7
Household size	
1-5	18.4
6-10	33.4
11-15	31.2
16-20	11.6
≥21	5.4
Farm size (ha)	
<1	29.3
1-5	53.7
6-10	11.6
11-15	4.7
≥16	0.7
Extension visits in the last one year	
None	6.8
1	19.7
2	29.9
3	12.9
≥4	30.7

The area was characterized by relatively large households as close to half of the respondents (48.2%) came from households with more than 10 members. However, this was justified by Amaza (2000) who found that household members supply bulk of the farming operations. Members of the household play a key role in dissemination of information as most of the GESS farmers got to know about the scheme through members of the household. The study also found that majority of the respondents (53.7%) cultivate on small fragmented land areas of 1 – 5 hectares. Furthermore, 29.3% cultivate on plots of less than 1 ha in size.

There is dearth of extension services in the area as 69.3% of the respondents received a maximum of 3 visits throughout the year. Oluwatayo (2009) opined that exposing farmers to extension services has great effect on adoption of innovation, improved farming practices by farmers and hence increased yields. Therefore, input subsidy programmes should be complemented with adequate extension services to empower beneficiaries on how to effectively utilize the inputs for enhanced productivity.

Farmers Satisfaction Level

Farmers were asked to indicate on a five point Likert-type scale how satisfied they were with the GESS system of fertilizer distribution and acquisition..The mean score of greater than three (>3) indicates that the respondents (beneficiaries) are satisfied with GES system of fertilizer distribution and acquisition. This assessment is subjective and a certain score for one person may not mean the same for another person (Abubakar, 2010). This result shows that majority of the beneficiaries were satisfied about acquiring fertilizer through the GES scheme (Table 3) The results revealed that 47.6% are satisfied, 14.3% highly satisfied, 28.6% were dissatisfied about the scheme, 5.4% were not sure of their level of satisfaction, while 4.1% are highly dissatisfied. Most of the farmers in the study area responded that this was the first time government fertilizer subsidy got into their hands. However, some of the challenges of the scheme were majorly on the aspect of timeliness of distribution, inadequate quantity of fertilizer accessed and inflation of price at the redemption centres.

Table 3: Distribution of respondents based on Satisfaction Level

Satisfaction Level	Percentage
Highly dissatisfied	4.1
Dissatisfied	21.8
Unsure	5.4
Satisfied	54.4
Highly satisfied	14.3
Total	100.0

Mean = 3.5

Socio-economic factors determining farmers satisfaction level

Result of Multinomial Logit regression analysis of the relationships between satisfaction level of GESS and socio-economic characteristics of farmers is presented in Table 4. About 52 percent of the variation in the satisfaction level of GESS system of fertilizer distribution could be attributed to variation in the socio-economic variables included in model. The F-value of 22.486 indicates $p < 0.05$ significance.

Four out of the ten independent variables included in the model were found to be significant at different levels. Extension visit and Educational status were found to be significant at 1%; while Age and Farming experience were significant at 5%.

Educational level (0.008) was positively significant at 1% level of probability. This implies a direct relationship with the farmer's satisfaction level. The implication is that higher educational levels are associated with greater information and level of awareness about an innovation. Age (-0.394) was negatively significant at 5 percent level of probability. This implies an inverse relationship with the satisfaction level of GES scheme; as age increases, satisfaction decreases. It shows that older farmers are less likely to be satisfied with the scheme than younger ones (Fakaude, 1999). This is, perhaps, because the scheme employed modern innovative approach as in the use of ICT (in form of e-wallet) which were more youth-friendly. Such could make the elderly skeptical, less comfortable and, therefore, less satisfied with the scheme.

Extension visit (-0.328) was negatively significant at 1% level of probability implying an inverse relationship with the GESS satisfaction. This is contrary to expectation that extension contact would enlighten the farmer on benefits of subsidized inputs which would lead to higher satisfaction with such schemes (Mike and Sambo, 2012).

Table 4: Relationship between socio-economic factors and satisfaction level

Variables	Regression coefficient	Standard error	p-value
Farm income	2.706	2.369	0.253
Source of credit	-3.443	1.633	0.833
Extension visit	-0.328	0.118	0.005*
Farmers association	0.060	0.036	0.092
Age	-0.394	0.190	0.038**
Household size	-0.012	0.046	0.790
Education	0.008	0.116	0.009*
Farm size	0.013	0.124	0.919
Occupation	0.715	0.425	0.298
Farming experience	0.050	0.022	0.024**

F=22.486, R-square value=0.519, % prediction= 80%, Log likelihood=305.75, N=147

** = Significant at 5%; * = Significant at 1%.

Farming experience had a positive regression coefficient (0.050) which signifies a positive relationship to farmer's satisfaction level. This implies that an increase in years of farming experience would lead to an increase in satisfaction level and vice versa. This is in line with expectation that a fair duration of farming experience could lead to a better understanding of newly introduced agricultural programmes.

Conclusion

The beneficiaries had expressed satisfaction with the level of performance achieved by the scheme in its few years of implementation. Younger farmers who are members of associations, with higher farming experience and educational attainment had expressed greater satisfaction with the intervention scheme. There is need to extend the scheme for a longer period, such as five years, to enable it consolidate on its success before winding up. This would strengthen the linkage between the farm families and the private input suppliers who are expected to carry on the scheme after withdrawal of government intervention.

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