Farmers' Perceived Effectiveness of the Growth Enhancement Support Scheme in Kogi State, Nigeria

https://dx.doi.org/10.4314/jae.v23i1.10

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Abstract

The study determined farmers' perceived effectiveness of the Growth Enhancement Support (GES) Scheme in Kogi State, Nigeria. A total of 120 scheme participants were purposively selected and interviewed from 12 communities across six local government areas. The results revealed that the majority of the respondents (85.8%) had access to agriculture-related information. The major crops grown in the area included maize (84.2 %), cassava (80.8%)and rice (48.8%). Respondents had a very high knowledge (80%) of the schemes' activities and the major source of information on the scheme activities was extension agents (78.3%). Again, respondents percieved a few of the scheme's operational processes, namely, the use of phone in information dissemination ($\bar{x}$=2.21), registration process of the scheme ($\bar{x}$=2.18), channels used for the sheme implementation ($\bar{x}$=2.17), farmers' sensitization process ($\bar{x}$=2.04) and types of personnel used ($\bar{x}$=2.02) as having high level of effectivessness. They were equally satisfied with some implementation processes of the scheme, namely, quality of seeds provided ($\bar{x}$=2.15), level of subsidy provided by the scheme ($\bar{x}$=2.05) and fertilizer distribution methods ($\bar{x}$=2.00), among others. However, the major constraints to effective implementation of the scheme included untimely input provision ($\bar{x}$=2.20), inability to still pay for the subsidized inputs by the farmers ($\bar{x}$=2.31) and inability to purchase mobile phones ($\bar{x}$=2.08). The study points to the need for early inputs provisions to farmers as farming operations are time bound. There is also the need to focus attention on encouraging more women to participate in the scheme in order to achieve its main objective of increased productivity and household food security.

Keywords: food security, input supply, knowledge index, mobile phone

Introduction

The Nigerian economy was strongly dependent on agriculture for many years before the discovery of oil in 1956. Agricultural enterprises such as cocoa, groundnut, oil palm and cotton production accounted for a large chunk of foreign exchange earnings in Nigeria. The south-western zone of the country was renowned mainly for its cocoa production and the South East together with South-South zones were renowned for oil palm production, while the Northern part of the country was renowned for its groundnut and cotton production. Nigeria was also one of the largest exporters of oil palm and cocoa until the discovery of crude oil, which resulted in the partial neglect of the agricultural sector. Even with the decline in output, the sector has continued to contribute about 22.86% to Nigeria's GDP (National Bureau of Statistics (NBS), 2018).

Agriculture is predominantly practised in the rural areas of Nigeria. Most farmers in these areas could not embark on mechanized agriculture because of the high rate of poverty that is prevalent in rural areas coupled with the land tenure system still practised in most places; hence, the need for farmers in rural areas to have access to farm inputs such as fertilizers, seeds among other critical factors of production. In view of this, in July 2012 the Federal Government of Nigeria introduced the Growth Enhancement Support (GES) scheme and this was designed to deliver government subsidised farm inputs directly to farmers via GSM phones. The GES scheme, according to Adesina (2012), is powered by e-Wallet, an electronic distribution channel, which provides an efficient and transparent system for the purchase and distribution of agricultural inputs based on a voucher system. The scheme guarantees registered farmers e-Wallet vouchers with which they can collect fertilisers, seeds and other agricultural inputs from agro-dealers at half the cost, the other half being borne by the federal and state governments in equal proportions. As part of the GES scheme, the Federal Ministry of Agriculture and Rural Development announced that the ministry would equip millions of farmers in the rural areas with mobile phones (Adesina, 2013). Adesina (2013), further stressed that the project would link farmers directly to government and vice-versa so that Government would be able to monitor the progress of farmers as well as disseminate valuable information to them.

The scheme, according to the Federal Ministry of Agriculture and Rural Development (FMARD) (2012), represents a policy and pragmatic shift within the existing fertilizer market stabilization programme and puts the resource-constrained farmer at the centre through the provision of series of incentives to encourage the critical actors in the fertilizer value chain to work together to improve productivity, household food security and income of the farmer. The goals of GES include to:
(a) target 5 million farmers in each year for four (4) years that will receive GES in their mobile phones directly, totalling 20 million at the end of the 4 years;
(b) provide support directly to farmers to enable them procure agricultural inputs at affordable prices and at the right time and place;
(c) increase productivity of farmers across the length and breadth of the country through increased use of fertilizer i.e. 50kg/ha from 13kg/ha; and
(d) change the role of Government from direct procurement and distribution of fertilizer to a facilitator of procurement, regulator of fertilizer quality and catalyst of active private sector participation in the fertilizer value chain.

Thirty-five (35) states of the country excluding Zamfara keyed into the programme for implementation with various farm inputs being redeemed to registered farmers at designated redemption centres (FMARD, 2013).

The introduction of Growth Enhancement Support (GES) scheme was received with scepticism among Nigerians considering all that led to the failure of past agricultural development policies. From the stated goals of the GES scheme, it is quite clear that the idea behind the introduction of the scheme are lofty and commendable but the question is whether the process of implementation was effective enough to achieve the set goals and objectives? It is then of importance to explain how the scheme has been implemented in Kogi State and the general perception of farmers towards the implementation process of the scheme. It is against this background that this study sought to answer these pertinent questions: What are the farmers' perceptions of the GES schemes? What are the sources of information on the schemes' activities? What is the level of satisfaction on the schemes' implementation process? What are the perceived constraints to effective implementation of the scheme? What are the perceived strategies for effective implementation of the scheme in Kogi State of Nigeria?

Objectives of the study

The overall purpose of the study was to determine the farmers' perceived effectiveness of the Growth Enhancement Support (GES) scheme in Kogi State. Specifically, the study sought to:
- ascertain farmers' perceived effectiveness of the scheme;
- determine farmers' knowledge of the activities of GES scheme in Kogi State;
- identify farmers' major sources of information on the GES scheme activities;
- determine farmers' level of satisfaction in the implementation of the scheme;
- determine perceived constraints to effective implementation of the GES scheme; and
- determine the strategies for effective implementation of the programme.

Hypothesis
The socio-economic and institutional characteristics of rural farmers have no significant influence on their knowledge level of the GES scheme.

Methodology

Area of study
The study was carried out in Kogi State, Nigeria, located between latitude 7°.45N and 8.100°N and Longitude 6°45E and 6.800°E (www.kogistatenigeria/aboutus.org). It is characterized with geological features depicting young sedimentary rocks and alluvial soil along the riverbeds which promotes agricultural activities. The State produces crops like yam, cassava, soya bean, cocoyam, maize, millet, rice, guinea corn, oil palm, cowpea and others. Some cash crops like cocoa, coffee and cashew are also grown in the State (Aderolu, et. al., 2014).

Population and sampling procedure
Multistage sampling procedure was used in selecting respondents for this study. In stage one, 6 LGAs were purposively selected out of the 21 LGAs based on their level of

participation in the schemes' activities. The LGAs were Bassa, Lokoja, Ajaokuta, Adavi, Kogi and Dekina. The second stage was the random selection of two communities of GES scheme participants from each of the 6 LGAs, making 12 communities. In the third stage, 10 participants were randomly selected from each of the communities with the assistance of the help line officers. This gave a total number of 120 farmers used for the study.

Measurement of variables

Socio-economic and institutional characteristics: These include sex, age, religion, and marital status, educational level, farming experience, farm size, household size and membership of a social/religious organization. These were measured at nominal and ordinal levels.

Farmers' perceived effectiveness of the scheme: some of the parameters measured include: the registration process of the scheme, timely inputs redemption, timely access to information on the schemes' activities etc. A three - point Likert type scale with response options of very effective = 3, effective= 2, not effective = 1, was used. The cut-off mean was 2. Variables with mean scores of 2 and above were perceived as having high level of effectiveness while those variables with mean score less than two were perceived as having low level of effectiveness.

Farmers' knowledge of the activities of GES scheme in Kogi State: respondents reacted to fifteen open and close (structured) questions by ticking either yes/no and provided answers to the open ended questions in order to ascertain their knowledge level. Each correct answer was scored one (1) point, giving the highest score of 15 points, and the lowest was 0. The respondents were thereafter categorized into three groups based on their knowledge level of the scheme. These are: high knowledge (from score 11-15), moderate knowledge (from score 6-10) and low knowledge (from score 1-5).

Major sources of information on the GES scheme activities: list of all possible sources of information was provided and the respondents were required to the tick the appropriate option. Their choices were later ranked according to the frequency of their response to a particular livelihood activity. Some of the options include: radio, television, friends and neighbors, extension agents, ministry of agriculture workers, Fadama facilitators, and fellow farmers.

Farmers' level of satisfaction in the implementation of the scheme; to determine their level of satisfaction, a three - point Likert- type scale with response options of very satisfactory= 3, satisfactory = 2, not satisfactory= 1 was used. The cut-off mean was 2. Variables with mean scores above 2 were regarded as satisfactory implementation process, while those with less than 2 were regarded as unsatisfactory process of implementation.

Perceived constraints to effective implementation of the GES scheme; respondents reacted to fifteen constraints items measured on the scale of as very serious constraint=3, serious constraint=2 and not serious constraint =1. The mean scores were obtained and ranked to determine the constraints to effective implantation of the GES scheme. Data were also subjected to exploratory factor analysis procedure using the principal factor model with varimax rotation in grouping the constraint variables into major constraint factors. However, only variables with loading of 0.40 and above (10 % overlapping variance) were used in naming the factors.

Strategies for effective implementation of the programme. The respondents suggested the possible strategies that will enhance effective implementation of the programme in the state.

The hypothesis was tested using multiple regression analysis and the regression model is specified as follows:

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \ldots + \beta_{14} X_{14} + U$

Where: Y= Knowledge scores on Growth Enhancement Support scheme by each respondent.

α = *Constant term*

$\beta_1 - \beta_{14}$ = regression coefficients.

X_1 = sex (male=1, female= 2), X_2 = age (years), X_3 = marital status (married=1, not married =2), X_4 = educational level (number of years spent in formal education), X_5 = religion (Christianity =1, Muslim =2), X_6 = farming experience (years), X_7 = access to information related to GES implementation.(yes=1, no =2), X_8 = ownership of mobile phones.(yes=1, no=2), X_9 = farm size (in hectares), X_{10} = farm Income (₦), X_{11} = household size(actual number of people living in the house), X_{12} = membership of social/religious organization belong to.(yes=1, no= 2), X13= type of crops grown (specific crops grown by respondents), X14 = years of participation (the actual years of participation in the scheme).

Data for this study were collected using structured questionnaire and analysed using percentage, frequency, mean scores, factor analysis and regression analysis.

Results and Discussion

Socio-Economic/Institutional Characteristics of Respondents

Table 1 shows that the majority (78.3%) of the scheme participants were male. This could be attributed to the drudgery associated with farm work. The mean age of the respondents was 42.4 years, implying that most of the farmers in the area are strong and still very active to carry out agricultural activities. The majority (88.4%) of the respondents were married and this will have a great influence in farm labour availability. A greater proportion (40%) of the respondents had HND/B.Sc. certificates as their highest qualification. This implies that the respondents were generally literate and such can enhance utilization of information on agricultural food production. Table 1 further shows that the mean house hold size was 5 persons; this implies that respondents have access to family labour which could positively affect agricultural production. On the negative side, Bola, Aliou and Omonona, (2012) reported that a larger household size could as well worsen the poverty situation particularly if such composition is more of dependants.

The majority (54.2%) of the respondents were of the Christian faith while the remaining 45.8% of the respondents were Muslims. The mean farming experience was 18.6 years; this shows that quite a number of the respondents have been into agricultural food production for a long time. The mean farm size was 2.5 hectares. This implies that the respondents are small scale farmers and are therefore qualified to participate and benefit from the GES scheme since the scheme was meant for the small holder farmers. The mean farm income was ₦47, 605.00 monthly and by implication many of them are most likely to participate in the schemes' operations. This is particularly so as farmers were required to pay for the subsidized inputs provided.

Table 1 also reveals that the majority (99.2%) of the respondents owned mobile phones, while a few (0.8%) had no mobile phones. Ownership of mobile phone by the respondents is important because this will enable them participate and benefit from the scheme. The majority (85%) of the respondents in the study areas had access to agricultural related information. The majority (85.8%) of the respondents belonged to one social/religion organization or the other, while the remaining 16.8% did not belong to any. These organizations according to Ojiagu, Onugu & Uchenna (2015), could serve as channels for contact with larger members of other practitioners, as these offer opportunities for participatory interaction with extension organizations.

Table 1: Socio-economic and institutional characteristics

Socio-economic/ Institutional characteristics	Percentage (%)	Mean
Sex		
Male	78.3	
Female	21.7	
Age (years)		
30 and above	11.7	
31-40	33.3	
41-50	31.7	
51 -60	23.3	42.4 years
Marital status		
Married	88.4	
Single	9.2	
Widowed	1.6	
Divorced	0.8	
Educational level		
No formal education	9.2	
Primary school leaver	7.5	
Secondary school attempted	5.8	
Secondary school completed	11.8	
ND/NCE	16.6	
HND/B.sc	40.0	
Higher degree	9.2	
Mean of years spent in acquiring formal education		**13.5 years**
Household size (number)		
1-5	43.3	
6-10	50.0	
11-15	7.7	5 persons
Religion		
Christian	54.2	
Muslim	45.8	
Farming experience(years)		
1-10	26.7	
11-20	35.0	
21-30	25.0	
31-40	13.3	18.6 years
Farm size (hectare)		
½-2ha	50.0	
3ha-4ha	24.2	
5ha-6ha	25.8	2.5 ha
Farm income		
None	18.3	
N100 – N50,000	45.8	
N50001 – N100,000	16.7	**N47.605**
N10001 – N200,000	14.2	
Above – N200001	5	
Ownership of mobile phones		
Yes	99.2	
Access to agricultural information		
Yes	85.8	
Membership of social/religion organization		
Yes	83.2	

Perceived effectiveness of GES scheme

Entries in Table 2 indicate the perceived effectiveness of the scheme's implementation. Variables with perceived high level of effectiveness include: the use of mobile phones in information dissemination ($\overline{x}$ =2.21), the process of registration ($\overline{x}$=2.18), the channel used for the implementation ($\overline{x}$=2.17), the sensitization process in preparation for the schemes' participation ($\overline{x}$=2.04) and the type of personnel used for the schemes' activities ($\overline{x}$=2.02). Such perception of the schemes' activities by respondents could be as a result of their participation in the activities coupled with the knowledge gathered from such participation. According to Aphunu and Nwabueze (2012), the higher the knowledge of a given programme, the more participants perceive its impacts.

On the other hand, the remaining variables had perceived low level of effectiveness. These areas of perceived low level of effectiveness could hinder the general success of the scheme if not improved upon. Therefore, improving on these implementation processes is important as peoples' participation in any developmental programmes are usually influenced by their perception.

Table 2: Farmers' perceived effectiveness of GES

Perception variables	Mean (M)	Std. Deviation
Use of phone in information disseminating	2.21*	0.672
Registration process of the scheme	2.18*	0.534
Channels use for the scheme implementation	2.17*	0.587
Farmers' sensitization process	2.04*	0.556
Types of personnel used	2.02*	0.547
Fertilizer distribution effectiveness	1.99	0.527
The seed distribution effectiveness	1.97	0.542
Method of seed supply	1.93	0.576
Use of e-wallet in input redemption	1.93	0.576
Timely inputs redemption	1.53	0.607
Inputs redemption and it regularity	1.44	0.576
Overall mean	**1.95**	**0.573**

Perceived high level of effectiveness*

Farmers' knowledge of Growth Enhancement Support Scheme

Table 3 reveals that 95% of the respondents knew that GES scheme was generally designed by the government to provide incentive to farmers in order to ensure food security. About 88% of the respondents were aware that you can only benefit from the scheme when you are fully registered. However, only 29.4% of the total respondents were aware of the period such registration is expected to last. For this reason, creation of more awareness in that direction will be required.

Also, 80.9% of the participants had knowledge on the use of e-wallet vouchers as an electronic device for input redemption. Farmers that knew that having a good telephone network is important for the schemes' operations and type of inputs supported by the scheme accounted for 97.5%, respectively. Having such knowledge is vital as this will enable the scheme's participants know what to demand for during input redemption. The

study further reveals that 77.5% of the respondents are knowledgeable as to whether both cash and food crops are supported by the scheme. Knowledge as to whether the scheme discriminates against any gender had 96.4%.

Farmers seem not to be knowledgeable on the specific benefit that can be derived from the scheme as this accounted for 30.9% of the total respondents. Being knowledgeable of the benefits that can accrue from participating in the scheme is very important as this will enhance peoples' level of participation in the schemes' activities, thereby achieving the expected positive results.

Table 3: Percentage distribution of respondents by their knowledge scores

Knowledge items	Percentage
The general purpose of the scheme	95.0
The need to register for participation	88.4
The expected period the registration is to last	29.4
As an initiation of the federal government	95.9
The function of e-wallet voucher to the scheme	80.9
The specific crops supported by the scheme	42.5
On how subsidies on inputs are borne by both federal and state governments	73.4
Type of people encouraged for participation	81.7
The importance of having a good telephone network	97.5
As to whether both seeds and fertilizers are supported together	97.5
The importance of having mobile phone for the Schemes' participation	97.5
Whether the scheme discriminate against gender	96.4
As to whether cash and food crops are supported	77.5
The type of fertilizer supported by the scheme	84.2
The specific benefit of the scheme to the participant	30.9

Table 4 further revealed that the majority (80%) of the respondents had high knowledge on the schemes' activities. Those with moderate knowledge accounted for 17.5%, while the remaining 2.5% of the respondents had low knowledge. Having high knowledge on the schemes' activities might be as a result of the adequate sensitization being carried out prior to the commencement of the scheme. It is then expected that such knowledge will influence the farmers' decision making as to whether to participate in the schemes' activities or not.

Table 4: Farmers' knowledge level on GES scheme

Knowledge level	Frequency (n=120)
High knowledge	80
Moderate knowledge	17.5
Low Knowledge	2.5

Sources of Information on Growth Enhancement Support (GES) scheme
Results in Table 5 reveal that the majority (78.3%) of the respondents sourced information on the scheme's activities from extension agents, followed by the state ministry of

agriculture (75%). Other sources include: mobile phone (73.3%), radio (71.6%) and friends and neighbours (70%).

On the other hand, magazines (15.5%), billboards (21.6%), internets (30%), and town crier (35.8%) were low sources of information to participants. The GES scheme was originally designed to transmit valuable information on its activities to the participants via mobile phones, which was considered most effective means of reaching out to the participants. According to Adesina (2012) the scheme is expected to make use of mobile phones to transmit information on its' activities in order to link farmers directly to government and vice-versa as such will enable government to monitor the progress of farmers, as well as, disseminate valuable information to them. Contrary to this expectation, the study revealed extension agents as the information source that ranked highest on the GES scheme.

Table 5: Percentage distribution of information sources on GES

Information sources	Percentage*	Ranking
Extension Agents	78.3	1st
Min. of Agriculture	75.0	2nd
Mobile phones	73.3	3rd
Radio	71.6	4th
Friends and neighbours	70.0	5th
Fadama facilitators	67.5	6th
Television	64.0	7th
Family members	56.6	8th
Community leaders	50.8	9th
Community association	50.0	10th
Newspapers	40.8	11th
Posters	39.1	12th
Worship centres	38.3	13th
Town crier	35.8	14th
Inputs sellers	30.1	15th
Internets	30.0	16th
Billboards	21.6	17th
Magazines	15.5	18th

*Multiple responses

Farmers Level of Satisfaction with the Scheme's Activities Implementation Process
Entries in Table 6 indicate the respondents' level of satisfaction with the scheme's implementation process. These include: the quality of seeds provided ($\bar{x}$=2.15), the level of subsidy provided ($\bar{x}$=2 .07) and the method of information dissemination on the schemes' activities ($\bar{x}$= 2.02).Others include: the registration process of the scheme ($\bar{x}$=2.0) and fertilizer distribution method ($\bar{x}$=2.00). Participants' satisfaction in these implementation processes of the scheme especially in the area of fertilizer distribution process is a good development since it was one of the major problems faced by Nigerian farmers that the Scheme was established to address.

However, the following aspects of the scheme were not perceived as satisfactory by the respondents: the quantity of seed provided ($\bar{x}$=1.92), the general operation of the scheme ($\bar{x}$=1.92), ability to reconcile the electronic channels with farmers registered list ($\bar{x}$=1.82), the quality of fertilizer provided ($\bar{x}$=1.72), the timing of inputs provision ($\bar{x}$=1.37), among others. These unsatisfactory areas are also critical, especially the issue of timely input provision, as this can hinder the success of the scheme. Bola, Aliou & Omonona (2012) remarked that untimely access to agro-inputs can negatively affect the adoption of technologies as well as farmers' participation in the GES scheme.

Table 6: Farmers level of satisfaction with the implementation of the scheme

Variables	Mean (M)	Std. Deviation
The quality of seed provided	2.15*	0.529
The level of subsidy provided by the scheme	2.05*	0.482
Registration process of the scheme	2.05*	0.482
Method of information dissemination on the schemes' activities	2.02*	0.560
The fertilizer distribution method	2.00*	0.535
The channels used in execution of the schemes' activities	1.98	0.485
The farmers' sensitization process on the schemes' activities.	1.94	0.555
Type and number of personnel used	1.92	0.559
Seed distributed method	1.92	0.559
The general operations of the scheme	1.92	0.559
The ability to reconcile the electronic distribution channels with the farmers registration list	1.82	0.565
The quantity of seeds provided	1.76	0.580
The quality of fertilizer provided	1.72	0.597
Timely input redemption	1.37	0.549

Perceived constraints to effective implementation of GES scheme Activities
Results in Table 7 show various constraints to effective implementation of Growth Enhancement Support (GES) scheme as indicated by respondents. The major constraints identified were: farmers not being able to read text messages on their phones ($\bar{x}$=2.36), farmers not being able to still pay for subsidized inputs ($\bar{x}$=2.31), untimely input provision ($\bar{x}$=2.20), and lack of good road to get farmers in rural areas registered ($\bar{x}$=2.18).

Listed among the major constraints is the fact that some farmers were not able to read text messages on their phones. This has grave implication on the success of the Scheme as farmers are expected to be informed through the text messages of the availability of necessary inputs. Also, timely inputs provision as at when due is very important if the set goals of the Scheme must be achieved, as most of the agricultural operations are time bound. Similarly, Ogbonna (2014), identified delay in input supply as a major constraint to effective farming and extension performance in Green River Project of Imo and Rivers States and such was reported to be capable of posing a hindrance to the effective performance of the scheme.

Lack of good road network to get farmers in rural areas registered was also a constraint which needed to be tackled. Banjo, Gordon & Riverson (2012) stressed that lack of access to good road network increases transportation cost of farm produce and such is capable of getting most farmers discouraged and this could as well affect the GES schemes' participants as transportation of these farm inputs supported by the scheme will become a problem.

Table 7: Perceived constraints to effective implementation of the scheme

Perceived constraints	Mean	Std. Deviation
Farmers not being able to read text message on phones	2.36*	.646
In ability of farmers to still pay for the inputs	2.31*	.671
Untimely inputs provision	2.20*	.717
Lack of good road to get farmers registered	2.18*	.682
Inability to identify practicing farmers	2.12*	.769
Inability of the participants to purchase phones	2.08*	.717
Mixed up names of registered farmers	2.08*	.717
Time lag between registration and input supply	1.97	.809
In ability to reconcile the e wallet with farmers list.	1.94	.737
In ability to access the information on the schemes' activities	1.92	.681
Lack of sufficient farm inputs for all practicing farmers	1.88	.773
Inadequate staff used for the schemes operations	1.85	.752
High transportation cost of supported inputs	1.84	.756
Lack of registrations form for all practicing farmers	1.75	.736
Lack of adequate publicity on the schemes' activities	1.73	.744

Constraints to effective implementation of the GES scheme Activities
The constraint variables were further subjected to factor analysis to draw out policy issues that needed to be addressed. Table 8 shows the result of the rotated matrix indicating the extracted factors on the responses of GES scheme participants. Three major factors were extracted. Factors 1, 2 and 3 were named, input related constraints, personnel related constraints and poverty related constraints.

Inputs related constraints include lack of sufficient inputs (0.75), high transportation cost of the inputs (0.55), the untimely input provision to all registered farmers (0.46), and lack of registration form for practicing farmers (0.69). Input availability is important if agricultural production must improve. Its availability may not be the issue rather its timeliness as such is capable of hindering the success of the GES scheme. In line with this, Amurtiya, Karniliyus, & Chinda (2018) reported that difficulty in procuring agricultural inputs at the right time had discouraged the use of agricultural inputs by farmers in Nigeria.

Under personnel related constraints, variables that loaded include: inadequate staff used for the schemes operation (0.78), time lag between the registration period and input supply (0.77), and the inability to reconcile the e-wallet with the compiled list of farmers (0.73). These constraints imply that when there are no adequate or properly trained personnel, it

is most likely that the scheme will not succeed. In the same vein, Ojeka, Effiong, & Eko, (2016) identified inadequate personnel to provide backup support for agricultural programmes as one of the constraints to agricultural development in Nigeria.

Variables that loaded under factors 3 (poverty related constraints) were farmers not being able to pay for the subsidized inputs (0.78), inability to purchase mobile phones (0.62) and lack of logistics to get farmers in the rural areas registered (0.67) This implies that under such constraints if nothing is done, farmers may likely be excluded from the benefits of the GES scheme programme. This is similar to Ajibo (2012) findings, which identified lack of fund as the major constraints to agricultural development among farmers in Enugu State Nigeria.

Table 8: Constraints to effective implementation of the GES scheme

Variables	1 Input-related Constraints	2 Personnel-related Constrains	3 Poverty-related Constraints
Farmers not being able to pay for the subsidized Inputs	0.14	-0.16	**0.78**
Inadequate publicity	0.59	0.41	0.14
Lack of sufficient input for all registered farmers	**0.75**	0.29	0.25
Farmers not being able to purchase a phone set	-0.18	0.38	**0.62**
Lack of good road network to get farmers in rural areas registered	0.34	0.32	**0.67**
Mixed up Names of registered farmers	0.46	0.47	0.17
Inadequate staff used for the schemes' operations	0.29	**0.78**	0.09
Time lag between registration periods and input supply	0.32	**0.77**	0.10
Ability to reconcile the e-wallet vouchers with the farmers compiled list	0.21	**0.73**	0.19
Farmers not being able to read text messages on their phone during input redemption	0.04	0.54	0.49
Lack of registration form for all farmers	**0.69**	-0.15	-0.06
Untimely Input redemption	**0.46**	0.02	0.15
High transportation cost for input supplied	**0.55**	0.39	-0.07
Ability to identify practicing farmers	0.43	-0.02	0.63
Lack of access to information on the schemes activities	0.59	0.41	0.14

Strategies for Effective Implementation of the GES Scheme Activities
Entries in Table 9 indicate the suggested strategies that will enhance effective implementation of GES scheme. Some of these suggested strategies include timely input provision by the scheme (70.8%), increase in the quality of input supply to the farmers (40.8%) and early registration of farmers as a strategy to effective implementation of the scheme (40.8%). Timely provision of inputs is very necessary if the set goal of the scheme must be achieved. Mgbenka & Mbah (2016) reported that if agricultural food production in Nigeria must improve, timely provision of inputs such as chemicals, fertilizers, improved seeds, farm tools and implements are to be ensured by government. Also, early

registration of participants might likely allow proper sorting of names prior to the commencement of the scheme every year and to avoid mixing up names.

Table 9: Strategies for enhancing the effective Implementation of GES activities

Perceived strategies	Frequency	Percentages
Timely Input provision	85	70.8
Increase quantity of input supply	49	40.8
Early registration of farmers	49	40.8
More redemption centres to be created	37	30.8
Provision of mobile phones to farmers	24	20.0
Involving only the extension officers	23	19.2
Provision of markets for marketing of agricultural products	22	18.3
Transportation cost to be reduced	21	17.5
Mobility for the scheme officers	20	16.7
Publicity on the programmes activities to be encouraged	15	12.5

Relationship Between socio-economic and institutional characteristics of rural farmers and knowledge level on GES scheme

Table 10 reveals that the socio-economic and institutional characteristics of rural farmers significantly influenced their knowledge level on GES scheme (F=1.108; P$\leq$0.05) accounting for 12.1% (R^2) of the variance. The study reveals that only access to agricultural related information (t = 2.340; P = 0.05) had a significant influence on farmers' knowledge of the scheme. Access to information is often said to bring about awareness which is an ingredient for participation in any developmental programme. According to Edoka (2012), information is a critical resource necessary for socio-economic development as it enables people to make informed choices towards improving their agricultural production. In the same way, having access to agricultural related information improves farmers' knowledge on the activities of GES scheme which will in turn enable them make a wise decision that will improve their livelihood.

However, variables like sex of the respondents (t=-0872; p =0.386), age of respondents (t =0.610; p=0.543), years spent in formal education (t=0.107; p=0.915), religion of the respondents (t=-0844; p=0.401), household size (t=0.891; p =0.375) and the farming experience (t=0.611; p=0.543) have no significant influence on the rural farmers' knowledge of GES scheme. Based on the result, the null hypothesis was rejected.

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Table 10: Socio-economic and institutional characteristics influencing farmers GES knowledge

| Variables | Unstandardized coefficients standardized Coefficient | | | T |
	B	STD Error	Beta	
(Constants)	12.268	3.392		3.617
Sex	-472	.541	-094	-0.872
Age	.019	.032	.084	0.610
Marital status	.696	.710	.110	0.980
Years of formal education	.004	.041	.013	0.107
Religion	-374	.443	-091	0.844
Household Size	-080	.090	-118	-0.891
Farming experience	-018	.029	.089	0.611
Access to agric. related Information	.504	.643	.246	2.340**
Farm size	-.231	.136	-.172	-1.691
Social/religion organization	.261	.584	.045	0.447
own a mobile phone	1.089	2.143	.051	0.508
farm income	1.234E-7	.000	.012	0.121

A dependent variable; knowledge of GES, R Square = 0.121,
R. square adjusted = 0.012, F value =1.108; $P \leq 0.05$, significant
**The level of significance

Conclusion and Recommendations

The farmers had good knowledge of the schemes' activities which they benefited from since the inception of the programme. They were satisfied with some operational process of the scheme and also perceived some implementation processes of the scheme to be effective, however the overall mean score of 1.95, which is below the mean cut-off point of 2.0 shows perceived low effectiveness of the Scheme's activities by the participants. Also, untimely input provision, inability to still pay for the subsidized input by the farmers and not being able to purchase mobile phones hindered the Scheme's effectiveness.

The study recommends that farm inputs should be provided promptly to all participants before the commencement of the rainy season as this will enhanced its proper utilization. Again, more inputs redemption centres should be created so that farmers can have their agricultural farm inputs redeemed without having to travel a long distances. The farm inputs are to be further subsidized by the government in such a way that every participant can afford it. Lastly, provision of mobile phones to each participant should be included as one of the Schemes' package since most information on its activities especially during inputs redemption are transmitted via mobile GSM phones.

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