Original Research Article

Effects of Growth Enhancement Support Scheme (GESS) on Income and Productivity of Farmers in Delta State, Nigeria

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Abstract

This study assessed the effects of the Growth Enhancement Support Scheme (GESS) on income and productivity of farmers in Delta State, Nigeria. The study examined the effects of farmers' participation in GESS activities on their farm income, determined the level of satisfaction of farmers with the GESS programme in the state, and ascertained the perceived benefits derived by farmer participants from the GESS programme in the study area. Both descriptive and inferential statistics were used to analyze the data of the study. Sample size was 567 respondents, and they were drawn from 6 Local Government Areas in two senatorial zones of the state. Results showed that the GESS had impacted positively on the farmers' income. The mean farm incomes of the farmers before and after being members of the scheme were ₦194,444.95 and ₦244,709.50 respectively. The difference (₦50,264.55) was in favour of farmers after becoming members of GESS. Majority (about 93%) of the respondents were satisfied with the scheme, and this was linked to the many benefits they seemed to be enjoying from the programme. Chow-test revealed that membership of GESS had a significant effect on farm revenue of farmers. Binomial test on the other hand revealed that there was a significant difference in proportion of farmers satisfied and those not satisfied with the scheme. Based on the findings, the study recommended timely release of farm inputs to enable the farmers make judicious use of them. In addition, the use of biometric card reader for verification of farmers' data was also advocated to help overcome the epileptic network coverage.

Keywords: GESS, agriculture, economy, farm income, farm inputs, farm output

Introduction

Before independence, agriculture was the mainstay of the economy prior to the discovery of the "black gold". However, the discovery of crude oil shifted attention from agriculture to crude oil production. Despite this trend, agriculture still remains the main employer of labour in the country,

employing 70% of the working population and the primary source of income for the majority of rural dwellers (Njoku, 2000). The author noted that the sector contributed much to the Gross Domestic Product of the country. Its contribution rose from 20.6% in 1980 to 41.5% in 2012. However, the sector is not without its challenges. Olajide *et al*. (2013) stated that the growth of the agricultural sector in Nigeria is not in consonance with its importance, noting that its contribution to the national economy dropped from 80% in the 1960s to a mere 35.6% in 2010.

In line with the need to revamp the agricultural sector, the Nigerian government had introduced several agricultural development schemes, amongst which were Agricultural Development Projects, River Basin Development Authorities, National Grain and Food Crops Production Company, National Agricultural Land Development Authority, Nigeria Agricultural Cooperative and Rural Development Bank, Tree crop Development and Marketing Company, Livestock Development and Marketing Company, Arable crop Development and Marketing Company, National Accelerated Food Production Programme, Operation Feed the Nation, Land Use Decree, National Fadama Development Project, Fadama III amongst others and most recently, the Growth Enhancement Support Scheme (GESS).

The federal government of Nigeria introduced the Growth Enhancement Support Scheme (GESS) in July 2012 with the aim of delivering subsidized farm inputs directly to farmers via GSM phones (Tiri *et al*., 2014). According to Dayo and Habeeb (2013), GESS is powered by e-Wallet, an electronic distribution channel, which provides an efficient and transparent system for the purchase and distribution of subsidized agricultural inputs based on a voucher system. GESS is a component of the policy document of the federal government known as Agricultural Transformation Agenda (ATA) which was launched as a key for the development of the Nigerian agriculture. Tiri *et al*. (2014) indicated that the policy (GESS) was borne out of the dissatisfaction experienced in the performance of the agricultural sector, the failure of some agricultural programmes and the need to provide a well – articulated domestic agricultural policy with a view of providing the Nigerian farmers who live in the rural areas with farm inputs like fertilizer and seeds and farm chemicals. The scheme (GESS) helps to make available such farm inputs which are timely used by the farmers and consequently have their productivity and farm income improved. Growth Enhancement Support Scheme (GESS) is a component of the Agricultural Transformation Agenda (ATA), with an innovative approach to fertilizer and other inputs administration through an electronic system that ensures that only registered farmers would benefit from the scheme.

The aim of the programme is to provide subsidized farm inputs such as fertilizers and improved seeds to farmers. As part of its commitment to the success of GESS, the federal government has so far released 22.6 million naira as loan to be made available to agro-dealers at 7% interest rate through commercial banks in partnership with NIRSAL (The Nigerian Incentive-Based Risk Sharing for Agricultural Lending) (FEPSAN, 2013). This commitment has translated to the expansion of national food production by additional 21million tons of food supply courtesy GESS, thus enabling the country to meet its MDG on hunger and malnutrition two years ahead of the 2015 target set by the United Nation Olukayode (2014).

The issue of concern is; can the increase recorded in food production in the country necessarily be linked to the GESS's commitment or is due to chance regardless of the scheme initiative that the country would still have recorded increased food production. To answer this question, an evaluation study needed to be undertaken.

Evaluation as a concept is a systematic review and assessment of the benefits, quality and value of a programme or an activity (Ajayi, 2005). Smith (2005) noted that evaluation with respect to agricultural extension programmes is the process of delineating, collecting and providing information useful for judging decision alternatives. The author emphasized that evaluation helps ensure that extension services operate efficiently, and also enables management to take action, overcome shortcomings in extension operations as well as provide policy makers with appropriate information on which to base decisions. Previous studies on agricultural programmes have focused on other programmes advanced by the federal government to revamp the declining contribution of the agricultural sector to the GDP of the nation's economy. The GESS, being a very recent programme, data on the scheme, especially in Delta State, are lacking or scanty. Thus, this study was therefore designed to provide empirical data on the scheme, and as well be of interest to other researchers who may want to study GESS or other agricultural based programmes.

Against this background, the study::

i. Determined the socio-economic characteristics of GESS participant farmers in Delta state,
ii. Examined the effects of farmers' participation in GESS activities on their farm income,
iii. Determined the level of satisfaction of farmers with the GESS programme in the state, and
iv. Ascertained the perceived benefits derived by farmer participants from GESS programme in the study area.

The following null hypotheses were stated and tested in their null forms:

H_{o1}: There was no significant difference in farm income of farmers' before and after membership of the GESS programme.

H_{o2}: There was no significant difference in proportion of farmers satisfied and those not satisfied with the GESS programme.

Materials and Methods

This study was conducted in Delta State. The State is oil rich and one of the six states in the South – South geopolitical zone of Nigeria and was created from the defunct Bendel State on 27th August, 1991. It has 25 Local Government Areas with the capital city at Asaba. The state has a total land area of 17,698 square kilometers and a population of 4,170,214 based on the 2006 census figures (AWC, 2006). The report stated further that its climate promotes the production of crops, fish and livestock for food and industry. Major ethnic groups in the state are the Isoko, Ika, Urhobo, Itshekiri, Izon, Ukwuani and Aniocha speaking people. The people's predominant occupation is

farming (cropping, fishing and animal rearing), oil prospecting, civil service, trading and commerce (AWC, 2006).

The population of the study comprised of farmers who were participants in the GESS programme.

The study employed the multi-stage sampling technique to sample the farmers registered with GESS as follows:

The first stage was the random selection of two of the three Agricultural Development Programme (ADP) Zones namely, Delta North and Delta Central zones. The zones had a population of 18832 participant farmers in the GESS. The second stage was the random sampling of 3 local government areas (LGAs) each in Delta North and Delta Central. This gave a total of 6 LGAs that were used for the study. The local governments were Ukwani, Ika South and Ndokwa West from Delta North, with 2,982, 3,156 and 3,019 registered GESS farmers respectively, and Uvwie, Ughelli South and Okpe from Delta Central, and with GESS-registered farmer populations of 3,570, 3,120 and 2,985 respectively. Total population of registered GESS farmers from both zones was therefore 18,832. Stage three was the proportional random sampling of 3% of registered farmers in the sampled local government areas. Proportional sampling was adopted because the local government areas had an unequal membership size. A proportion of 3% was used across the local government areas because of the large size of the farmers' population. This percentage was used to multiply the percentage of GESS farmers per LGA to give 90 from Ukwuani LGA, 95 from Ika South LGA and 91 from Ndokwa West LGA in Delta North ADP zone. In Delta Central, the numbers were 107 from Uvwie LGA, 94 from Ughelli South LGA and 90 from Okpe LGA, thus giving a total sample size of 567 (Delta North = 276; Delta Central = 291) (see Table 1).

Table 1: Sampling distribution by Local Government Areas

ADP Zone	LGA	GESS-Registered Farmers	Sampled Farmers
Delta North	Ukwuani	2982	2982 x 0.03 = 90
	Ika South	3156	3156 x 0.03 = 95
	Ndokwa West	3019	3019 x 0.03 = 91
Delta Central	Uvwie	3570	3570 x 0.03 = 107
	Ughelli South	3120	3120 x 0.03 = 94
	Okpe	2985	2985 x 0.03 = 90
Total		18832	567

(Delta Agricultural Procurement Agency, 2016)

Data were sourced directly from the farmers by means of a validated structured questionnaire (for the literate farmers) and interview schedules (for the illiterate farmers). Face and content method was used to ascertain the instrument's validity while the reliability of the instrument was tested using the Crombash Alpha method. The reliability coefficient obtained was 0.78, thus indicating a

good reliability of the instrument. Trained enumerators were recruited and used for administration and retrieval of the instrument.

Data were analyzed using descriptive and inferential statistics. The descriptive statistics involved frequencies, percentages, means and standard deviations, used to analyze the socio-economic characteristics of the respondents and in examining the effects of farmers' participation in GESS. Frequencies and percentages were also used to categorize respondents' satisfaction with the scheme. On this note they were generally categorized into having high satisfaction (coded 4), just satisfied (3), moderately satisfied (2) and not satisfied (1) with the scheme. The respondents' perception of benefits derived from participating in the scheme was assessed using a four-point Likert scale. The scale ranged from "Strongly agree" (coded 4), "Agree" (coded 3), "Disagree"(coded 2) to "Strongly disagree" (coded 1). The weighted mean score of 2.50 (obtained as follows [4 + 3 + 2 + 1] / 4 = 2.5) was used to determine which of the perceived benefits underscored their reasons for belonging to such a scheme. Values ≥ 2.50 were considered important while values < 2.50 were regarded as not important.

Inferential statistics involved the use of Chow-test and Binomial test. Chow-test was used to analyze the differences in farm incomes of participants before and after being members of the GESS programme. Chow – test is a statistical and econometric test of whether the coefficients in two linear regressions on different data sets are equal, i.e. not significantly different from each other. In programme evaluation, the Chow-test is often used to determine whether the independent variables have different impacts on different sub-groups of the population (Bryn, 2012). Chow-test was used to confirm if farmers' participation in GESS had any significant effect on their farm income. In using the Chow-test, three linear regressions were fitted; one equation for the restricted model (pooled data) and separate regressions for the unrestricted models (farmers' participants before and after participating in GESS model). The test statistic is formally stated as:

$$Fc = \frac{[S_c - (S_1 + S_2)] / K}{S_c / (N_1 + N_2 - 2K)}$$

$Fc = (F\ 0.05, k, (n_1 + n_2 - 2k))$ (Chow-test; Wikipedia, 2012)

$$F^*_{k,\ N1+N2\ -\ 2k} = \frac{[S_c - (S_1 + S_2)] / K}{(S_1 + S_2)/(N_1 + N_2 - 2K)}$$ (Chow-test; Wikipedia, 2012)

Where;

Fc = the statistical test (calculated); F* = the statistical test (tabulated);

Sc = the sum of squared residuals from the combined data;

S_1 = the sum of squared residuals from the first group (i.e. before participation);

S_2 = the sum of squared residuals from the second group (i.e. after participation);

N_1 and N_2 = the number of observations (sample size) in each group;

K = the total number of parameters in the model including the intercept.

Decision rule for Chow-test

If the test statistics, F* (F – calculated) was greater than the F-tabulated, the null hypothesis was ~~is~~ rejected while the alternative was accepted, or otherwise if F* (F-calculated) was less than the F-tabulated. If significant, it meant that the sub – samples were significantly different in their farm income.

The Binomial test was used to determine the level of satisfaction of farmers in the programme. The Binomial Test is an exact test of the statistical significance of deviation from a theoretically expected distribution or observations in two categories (Wikipedia, 2015). In this analysis, the two-tailed binomial test was used to determine the significance of difference in proportion of respondents that were satisfied as well as those not satisfied with GESS. The formula for binomial distribution is given as follows:

$$b(x;n,p) = {}_nC_x * p^x * (1- p)^{(n-x)}$$

Where b = binomial probability
x = total number of successes (satisfied or not satisfied)
p = probability of success on an individual trial
n = number of trials

Results and Discussion

Table 2 shows the socio-economic characteristics of the respondents of the study. The results show that male dominated (64.55%) the GESS programme in the study area. This suggests that gender distribution regarding GESS participants in Delta State is skewed towards male. This finding tends to agree with similar study by FEPSAN (2013) which showed male dominance over female in the Growth Enhancement Support Scheme (GESS) in 12 states of Nigeria.

Male dominance could be attributed to the fact that males go into farming as a way of providing for the basic needs of their families. The average age of the respondents was 47.7 years and most (33.86%) of the farmers were between the age bracket of 51 – 60 years. The result indicates that the farmers were young and active people. This finding is in line with that of Ovharhe (2014) who found that farmers who participate in programmes like GESS were mainly young in age, and that this translates to their quick willingness and ability to adopt agricultural innovations.

The average households size of the respondents was approximately 5 persons and most (34.39%) of them had 4 – 6 persons as their household size. The result is in consonance with that of Mohammad *et al.* (2011) who reported a similar household range for members of community-based groups.

Table 2: Socio - economic characteristics of the respondents

		Delta North n= 276		Delta Central n = 291		Pooled n = 567		
Characteristics	**Categories**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**	**Mean**
Sex	Male	189	68.48	177	60.83	366	64.55	
	Female	87	31.52	114	39.17	201	35.45	
Age (years)	≤ 30	29	10.51	31	10.65	60	10.58	
	31 - 40	52	18.84	43	14.78	95	16.76	
	41 - 50	63	22.83	70	24.06	133	23.46	
	51 - 60	93	33.70	99	34.02	192	33.86	
	> 60	39	14.13	48	16.50	87	15.34	47.7
Marital Status	Single	41	14.86	53	18.21	94	16.57	
	Married	196	71.02	185	63.57	381	67.20	
	Divorced	23	8.33	32	11.00	55	9.70	
	Widow(er)	16	5.80	21	7.22	37	6.53	
Education	No formal Education	21	7.61	25	8.59	46	8.11	
	Primary Education	69	25.00	75	25.77	144	25.40	
	Secondary Education	131	47.46	122	41.92	253	44.62	
	NCE/OND	27	9.78	33	11.34	60	10.58	
	HND/BSc	22	7.97	25	8.59	47	8.29	
	Postgraduate	6	2.17	11	3.78	17	3.35	
Household size	< 4	123	44.57	131	45.02	254	44.80	
	4 – 6	102	36.96	93	31.96	195	34.39	
	7 – 9	38	13.77	42	14.43	80	14.11	
	≥10	13	4.71	25	8.59	38	6.70	5
Farm size (ha.)	≤ 1.0	81	29.35	73	25.09	154	27.16	
	1.1 – 2.0	119	43.12	131	45.02	250	44.09	
	2.1 – 3.0	54	19.57	62	21.31	116	20.46	
	3.1 – 4.0	13	4.71	15	5.16	28	4.94	
	>4.0	9	3.26	10	3.44	19	3.35	1.7
Farming experience (years)	<10	41	14.86	39	13.40	80	14.11	
	10 – 19	78	28.26	61	20.96	139	24.52	
	20 - 29	98	35.51	94	32.30	192	33.86	
	30 - 39	36	13.04	52	17.87	88	15.52	
	40 - 49	14	5.07	29	9.97	43	7.58	
	≥50	9	3.26	16	5.50	25	4.41	24

Source: Field survey, 2017

Where farm size is concerned, majority (44.09%) of the respondents farmed between 1.1 and 2.0 ha. The average farm size was about 1.7 ha, indicating that the farmers in the study area were small-scale farmers. Ovharhe (2014) reported similar result regarding farm size in Delta State. This finding confirms that GESS is targeted at addressing the input supply need of small-scale farmers

in particular. In terms of farming experience, majority (33.86%) had 20 – 29 years' experience. The average period of farming was about 24 years, indicating that most farmers had many years of farming experience. The implication is that the farmers were better positioned to know the needs and problems associated with their farming operations. Okwuokenye and Onemolease (2011) confirmed this finding as they indicated that having good farming experience in group's activities enabled the farmers to be better positioned to know the needs and problems associated with the farmers activities.

Farm income range of respondents' before and after membership of GESS

An assessment of the farmers' farm income before and after their participation was carried out to ascertain the effects the scheme had of them. Tables 3 and 4 respectively show the farmers' income before and after membership of GESS. The results revealed that most (63.7%) of the farmers, before becoming members, earned ₦100,000 and below, while most (31.92%) farmers after becoming GESS members earned an income of between ₦200,001 and ₦300,000. The average farm annual earnings of the farmers before and after membership of GESS were ₦194,444.95 and ₦244,709.50 respectively. The difference (₦50,264.55) (in favour of farmers after becoming members of GESS) suggests that participation in GESS projects had indeed enhanced farmers' income.

Table 3: Income range of respondents before participating in GESS

	Delta North n= 276		Delta Central n = 291		Pooled n = 567		
Income Range (₦' 000)	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**	**Mean**
≤100,000	94	34.06	91	31.27	185	32.63	
101,000 – 200,000	71	25.73	78	28.80	149	26.28	
201,000 – 300,000	52	18.84	54	18.56	106	18.70	
301,000 – 400,000	34	12.32	36	12.37	70	12.35	
401,000 – 500,000	17	6.16	20	6.87	37	6.53	
> 500,000	8	2.90	12	4.12	20	3.53	194,444.95

Source: Field survey, 2017

Table 4: Income range of respondents after participating in GESS

	Delta North n= 276		Delta Central n = 291		Pooled n = 567		
Income Range (₦' 000)	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**	**Mean**
≤100,000	32	11.59	53	18.21	85	14.99	
101,000 – 200,000	61	22.10	60	20.62	121	21.34	
201,000 – 300,000	94	34.06	87	29.90	181	31.92	
301,000 – 400,000	58	21.02	63	21.65	121	21.34	
401,000 – 500,000	21	7.61	16	5.50	37	6.53	
> 500,000	10	3.62	12	4.12	22	3.88	244,709.50

Source: Field survey, 2017

The findings indicated the positive role of the Growth Enhancement Support Scheme. Similar results have been reported by Abegunde (2009) who noted that participating in government agricultural alleviation programmes helped in speeding socio-economic development of members in the study area.

Categorization of Respondents Based on Satisfaction with GESS

From Table 5, most (38.80%) of the respondents were just satisfied with the scheme. Close to this fraction was 33.51% of the respondents who claimed to be moderately satisfied with the scheme. About 21% of them were highly satisfied, while a few of them (6.35%) were not satisfied with GESS. The result implies that most farmers involved in the scheme were satisfied with it especially with regards to inputs like fertilizer and seeds that the scheme was meant to provide. The high level of satisfaction with GESS among farmers in this study is corroborated by Tiri *et al.* (2014), who observed a high level of satisfaction with GESS by participants in their study. By implication, the scheme is meeting up with its responsibilities, and the farmers are likely to want to continue with the scheme.

Table 5: Farmers' Satisfaction with GESS

	Delta North n= 276		Delta Central n = 291		Pooled n = 567	
Satisfaction Range	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Not satisfied	16	5.79	20	6.87	36	6.33
Moderately satisfied	98	35.51	92	31.62	190	33.51
Just satisfied	106	38.41	114	39.18	220	38.80
Highly satisfied	56	20.29	65	22.34	121	21.34

Source: Field survey, 2017

The low fraction (6.35%) of the respondents who were not satisfied with the scheme stressed through personal communication, that their dissatisfaction was drawn from the area of late supply of inputs, poor network coverage and inability to activate their Personal Identification Numbers (PIN). This of course implies that the implementers of the scheme will have to look into these areas in subsequent years or phases of the scheme.

Perceived benefits of Growth Enhancement Support Scheme farmers

Table 6 shows the perceived benefits derived by respondents from participating in the GESS, which underscores their reasons for belonging to such a government agricultural alleviation programme. The result revealed that there were various benefits farmers perceived to have received from participating in GESS. Among these benefits, improved knowledge of farming practices ($\bar{x}$ = 3.42) was perceived as the most beneficial. When farmers participate in groups activities, they tend to share knowledge, information and modern agricultural practices which they use to improve on their productivity and farm income. The result is in agreement with the study carried out by Taiye *et al.* (2006). They found that farmers' participation in agricultural groups

improved the farmers' knowledge of farming practices which had a direct positive impact on their productivity. Participating in GESS has equally enhanced how the farmer is being perceived by the public ($\bar{x}$ = 3.12). Participating in GESS has influenced the public's good perception about the farmers. FAO (2009) confirms the connection, stating that the group one belongs to enhances the individual's prestige especially when the group is a prestigious one in the community or locality.

Other perceived benefits of participating in farmers GESS were improvement of farmers' income ($\bar{x}$ = 3.02) and enhancement of farm output ($\bar{x}$ = 2.53). Participating in groups goes a long way in improving farmers' agricultural knowledge and skills which translate to improvement in output and, consequently, in his income. This finding is supported by the studies of Madukwe (2005) who opined that GESS, just like many other agricultural programmes, provides the latest on agricultural information which helps farmers of the group to update their knowledge that helps improve their production and income. Another perceived benefit of participating in GESS was improvement of farmers' living standard ($\bar{x}$ = 2.52) and this agrees with the findings of Abegunde (2009) who noted that participating in agricultural programmes can go a long way to ameliorate poverty and facilitate socio-economic development of farmers in the area of study. Also, improving farmers' linkage to input providers was identified as a benefit ($\bar{x}$ = 2.51). Reid (2000) agreed with this result as he noted that participation in programmes like GESS was a vehicle to developing true democratic processes among participants, high rate of resource (input) acquisition and utilization, better economic results, high levels of volunteerism and a high community spirit.

Table 6: Perceived benefits by GESS farmers

	Delta North n= 276		Delta Central n = 291		Pooled n = 567	
Perceived Benefits Of GESS Farmers	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Increased knowledge of farming practices	3.42*	0.52	3.42*	0.52	3.42*	0.52
The public's good perception about me	3.13*	0.57	3.11*	0.60	3.12*	0.59
Improved income	3.01*	0.72	3.03*	0.64	3.02*	0.68
Enhanced farm output	2.65*	0.75	2.40	0.76	2.53*	0.76
Improved living standard	2.57	0.72	2.47	0.77	2.52*	0.75
Facilitated linkage to input providers	2.47	0.90	2.56	1.03	2.51*	0.90

Agreed (mean ≥ 2.50); Source: Field survey, 2017

Effect of Growth Enhancement Support Scheme (GESS) on farm income of farmers

The farm incomes of the respondents before and after membership of GESS is showed in Table 3 and 4 respectively. Chow-test was used to test and confirm the impact of GESS membership on farmers' income (see Table 7). The result showed that F* calculated was 4.56 while F-tabulated was 1.75. For this reason, the difference in farm income (₦50,264.55) (in favour of farmers after becoming members of GESS) between the GESS farmers after becoming member of the scheme (GESS) (₦244,709.50) and before membership of the scheme (₦194,444.95) was significant at the 5% level. Based on this, the null hypothesis was rejected while the alternative hypothesis was

accepted. It was therefore inferred that membership of GESS had significant effect on the farm revenue of the farmers. The result of Abegunde (2009) is in conformity with this finding as the author identified government agricultural programmes as sure means of boosting the farm incomes of programme's participants.

Table 7: Impact of participation in GESS on income level of respondents' (Chow - test)

Models	RSS	Mean Income (₦)	n	F_{cal}
Pooled	5676813952323.501			
After membership of GESS	3352746851214.444	244,709.50	567	
Before membership of GESS	2122968802193.292	194,444.95	567	4.56

*****Significant at the 5% level (critical F = 1.75); df (K, N – K, 9, 1125), K = 9*

Test of difference in Farmers' Satisfaction with GESS

Hypothesis two which stated that, there was no significant difference in proportion of farmers satisfied with GESS and of those not satisfied was analyzed using the binomial test, and the result presented in Table 8. From the result, a larger proportion (72%) of the participants was noted to be satisfied with the Growth Enhancement Support Scheme (GESS). On the other hand, the other fraction (28%) of the programme participants was found to be less satisfied with the scheme. Statistically, the result was significant at 1% level of probability, hence the alternative hypothesis was accepted, that there was a significant difference in the proportions of farmers satisfied with GESS and those not satisfied. This suggests that farmers' satisfaction with the scheme is significantly high, since the majority (72%) fell under this category. The implication of this result is that the scheme seems to be meeting up with its responsibility of providing farmers with fertilizer, farm chemicals, improved seeds and seedlings, hence the farmers' high level of satisfaction. This situation could go a long way in fostering the farmers' encouragement in their continuous participation in the scheme and consequently resulting to sustainability of the programme. Tiri *et al*. (2014), in agreement with this finding, noted that farmers' level of satisfaction with GESS was high in their area of study.

Table 8: Difference in Farmers' satisfaction with GESS (Binomial Test)

Satisfaction status	Frequency	Proportions	Prob. Level
Satisfied	410	0.72	0.001
Less satisfied	157	0.28	
Total	567	1.00	

Field Survey, 2017.

Conclusion and Recommendations

The study was carried out to evaluate the Growth Enhancement Support Scheme (GESS) and it was found that the farmers' level of participation in the scheme was high and this is reflected in the boost in farm income of the participant farmers, and in the many other benefits they agreed to

be enjoying from participating in the programme. Based on findings of the study, the following recommendations were advanced;

i. Late arrival of inputs was mentioned as one of the reasons for dissatisfaction with the scheme. The study recommends that, efforts should be intensified by the government and the input suppliers in planning and delivering inputs ahead of the planting season.

ii. The problem of inability to activate PIN could be overcome by recommending 2 or 3 digit numbers, which will be easier to remember and activate by farmers. This should be used by Cellulant, the operator of the telecommunication network for GESS.

iii. The problem of poor network coverage can be resolved through the use of biometric card readers for the verification of farmers' data instead of relying on the epileptic network coverage of the GSM providers.

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