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# Corruption and agricultural development: Analysis of fertilizer distribution in rural communities of Kwara State, Nigeria

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## Abstract

Tackling corruption is an important means to aid development in agricultural sector of the nation's economy. This study focused on analysing sharp practices involved in fertilizer distribution before and after the introduction of the E-wallet scheme in Nigeria. Multistage Sampling Technique was used to select 140 fertilizer-using farmers in rural communities of Kwara State, Nigeria. Data were analyzed using Descriptive, Chi-Square, Correlation and T-test Statistics. Results revealed that open market (42.9%) and government accredited agents (92.6%) were the major sources of fertilizer to farmers in the area. Favouritism (22.9%), inducement (2.1%), hoarding (2.9%), nepotism (35.7%) and bribery (1.4%) were the identified sharp practices in fertilizer distribution in the new schemes. The major constraints encountered by farmers in accessing fertilizer were inadequate funding (90%), late arrival (25%), and scarcity (4.3%). At 5% level of significance, Chi-square and Correlation analyses showed that there was no significant relationship between the socio-economic characteristics of farmers and their tendency to indulge in sharp practice; gender($X^2$=0.533), marital status ($X^2$=0.630) level of education ($X^2$=0.114), age (p=0.119),household size(p=0.059) while years of experience in farming was significantly related (p=-0.150) . T-test also showed no significant difference in the level of sharp practices between the past and present mode of fertilizer distribution (t=1.686). The E-wallet scheme has led to a decline in the level of some forms of sharp practices in fertilizer distribution but has given rise to others.

***Keywords:*** Corruption, E-wallet, Sharp Practices, Fertilizer Distribution, Agricultural Development



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## 1. Introduction

Corruption is a universal problem. It is a major hindrance and bane of development in most developing countries. The phenomenon is so endemic that it has eaten deeply into the fabrics and facets of all institutions of the Nigerian society (Uji, 2015). Corruption is not restricted to a theoretical construct; it varies between cultures, places, time and level of development in every society. According to Nchuchuwe and Adejuwon (2012) the bedrock of agriculture and agricultural development in Africa is rural development without which all efforts at agricultural development will be futile. Agricultural development is the process of promoting the proper conditions for farming in all facets so that planting, harvesting and processing of crops can be done effectively, which ultimately can reduce poverty; bringing a revolution in the agricultural industry to give birth to an agriculture which is profit earning and at the same time eco- friendly. It extends beyond the physical conditions of farming into research, technology and political policy. Again, it involves providing assistance to crop producers with the help of various agricultural resources, providing protection, assisting in the research sphere, employing latest techniques, controlling pest and facilitating diversity within the purview of agriculture.

Efforts have been made in the past to boost farmers' productivity among which is the supply of fertilizer to farmers at subsidized prices and yet the usage of fertilizer has been very low among Nigerian rural farmers as a result of corruption. The average usage of fertilizer in Nigeria according to Adebo (2014) is 13kg/hectare while world average usage is 100kg/hectare. Adesina (2013) maintained that the old system of fertilizer supply was weak, inefficient and fraudulent hence a large proportion of intending beneficiaries could not benefit from it. Fertilizers were diverted by the political elites for personal gains and when supplied they are either adulterated or underweight. The country lost about 776billion Naira between 1980 and 2010 to corruption under the old fertilizer distribution regime i.e. Nigeria lost an average of 26.3billion Naira annually to corruption in the sector (Adesina, 2013). Under the previous system, the Federal Ministry of Agriculture and Rural Development procured and distributed fertilizers to farmers and only about 11% of fertilizers distributed ever got to farmers.

Attempt to correct the inherent weaknesses and check corruption associated with the old system led to the introduction of the Growth Enhancement Scheme where farmers used cell phones to access fertilizers via the electronic wallet (E-wallet). E-wallet is an efficient and transparent electronic system that makes use of vouchers for the purchase and distribution of agricultural inputs (Ezeh, 2013). Farmers who are eligible to these vouchers must be 18 years of age and above, his/her bio-data must have been captured by the government, own a cell phone with a registered line and have a minimum of ₦50 credit on it. Hence, the government can track who gets fertilizer, when they got it, and how much is paid. With the Growth Enhancement Scheme via the E-wallet at 50% subsidy, 1.2million farmers bought a maximum of two bags of fertilizer in 120 days (NANTS, 2015).

### 1.1. Objectives of the study

The main objective of this research is to examine sharp practices involved in fertilizer distribution in the rural communities of Kwara State, Nigeria. The specific objectives are to;

i. compare the past and present mode of fertilizer distribution in the study area;
ii. identify sharp practices during fertilizer distribution in the area;
iii. ascertain the extent at which fertilizer distribution has affected agricultural production in the area; and
iv. suggest ways of reducing sharp practices in fertilizer distribution in the study area.

### 1.2. Research hypotheses

Due to the fact that various categories of farmers with different socio-economic status were interviewed for the study, the following hypotheses were tested at 5% level of significance:

$H_{01}$: There is no significant relationship between the socioeconomics characteristics of fertilizer using farmers and their tendency to indulge in sharp practices.

$H_{02}$: There is no significant difference in the level of sharp practices between the past and present mode of fertilizer distribution.

### 1.3. Materials and method

Multistage Sampling Technique was used in this research. Two out of the existing four Agricultural Zones were selected on the recommendation given by Kwara State Agricultural Development Programme (ADP) based on their grain production capacity. The zones are ZoneC with headquarters at Igbaja and Zone D with headquarters at Oke-oyi. A Local Government was selected from each zone based on convenience, while Snowball Sampling Technique was used to select 7 clusters of villages based on their grain production and handling as recommended by ADP (3 villages from Zone C and 4 from Zone D). The villages are;Isale-Awe, Idi-Emi, Alapa, Igbo-Owu, Elerinjare, Alfa Agunbiade and Mandala. The Simple Random Sampling Technique was employed to draw20 fertilizer-using farmers from each community. Therefore, a total of 140 fertilizer-using farmers were sampled for this study. Descriptive Statistics (Frequency, Percentage and Mean) were used to analyse the data collected. Hypotheses were analysed using Chi-Squared, Pearson Correlation Analysisand T-Test Statistics at 5% level of significance.

## 2. Results and discussion

### 2.1. Socio-economic characteristics of fertilizer using farmers

The results of the socio-economic characteristics of the fertilizer using farmers interviewed are presented in Table 1. It revealed that farmers who are above 60 years of age (31.4%) engage more in farming. This was corroborated by the study of (Oboh and Sani, 2009), who stated that farming in Nigeria has become less attractive to the youths who prefer to go to the cities for wage earning jobs. Hence, farmers of 30 years and below (10%) are least represented. It also revealed that more males (64.3%) than females (37.5) were sampled for the survey.

**Table 1.** Socio-Economic Characteristics of respondents

| Socio-economic variable | Parameters | Frequency | Percent | Mean |
|---|---|---|---|---|
| **Age** | 30 and Below | 20 | 14.3 | |
| | 31 – 40 | 24 | 17.1 | |
| | 41 – 50 | 24 | 17.1 | 52 |
| | 51 – 60 | 29 | 20.0 | |
| | Above 60 | 23 | 31.4 | |
| **Gender** | Female | 51 | 35.7 | - |
| | Male | 89 | 64.3 | |
| **Marital Status** | Single | 8 | 5.7 | |
| | Married | 121 | 87.1 | - |
| | Divorced | 2 | 1.4 | |
| | Widow | 5 | 5.7 | |
| **Level of Formal Education** | No Formal Education | 86 | 61.4 | |
| | Primary Education not Completed | 2 | 1.4 | |
| | Primary Education Completed | 27 | 18.6 | - |
| | Secondary Education not Completed | 2 | 1.4 | |
| | Secondary Education Completed | 15 | 11.4 | |
| | Tertiary Education | 8 | 5.7 | |
| **Household Size** | 3 and Below | 41 | 28.6 | |
| | 4 – 6 | 73 | 52.9 | |
| | 7 – 10 | 20 | 14.3 | 8 |
| | Above 10 | 2 | 1.4 | |
| | 5 | 4 | 2.9 | |
| **Class of Farming** | Primary Occupation | 124 | 88.6 | |
| | Secondary Occupation | 16 | 11.4 | |
| **Years of Experience** | 5 and Below | 10 | 7.1 | |
| | 6 – 10 | 17 | 11.4 | |
| | 11 – 15 | 12 | 8.6 | 29 |
| | 16 – 20 | 20 | 14.3 | |
| | Above 20 | 81 | 58.6 | |
| **Total** | | **140** | **100.0** | |

Though women account for about 75% of the farming population in Nigeria, they are hindered by formal and traditional rules (SAHEL, 2014). The study showed that majority of the farmers was married (87.1%) which is an indication that they engage in subsistence farming to feed the family. This position is similar to findings of (Adebo, 2014), with about 53% married respondents in her study.Nearly two-third (61.4%) of the

farmers has no formal education and very few (5.7%) with tertiary education.This is not unconnected with the fact that respondents who took part in the survey are more in the age bracket of over 60 years old. This position is akin to that held by (Adegbola et al., 2011).More than half (52.9%) of the farmers with household size of between 4 and 6 are in the majority, while farmers withhousehold size of 11 members and above make up the least at 1.4%. Majority of the farmers surveyed have farming as their primary occupation (88.6%). This is in line with the result of a similar study carried out by (Adebo, 2014) in Kwara state, Nigeria. Finally, 58.6% of farmers surveyed have been farmers for over 20 years, which showed that they are very experienced in both the old and new fertiliser distribution schemesand those that are less experience of the old distribution method (5years) are least (7.1%).

## 2.2. Mode of Fertilizer Distribution

The mode of fertilizer distribution is as shown in Table 2 which revealed that before year 2013, 67.36% of farmers got fertilizer through open market, 28.52% through government agent while 3.15% got through their Association and 1.07% of farmers got fertilizer through other means. From the year 2013, 30.99% got fertilizer from the open markets while 66.91% got theirs from government bodies and 2.1% got their own through other means. Other source of fertilizer identified in the area is from politicians during their campaign programmes. This infers that open market and government accredited agents are the major sources of fertilizer acquisition to farmers in the study area.

**Table 2.** Mode of Fertilizer Distribution

| Parameter | Before 2013 (%) | From 2013 (%) |
|---|---|---|
| Open Markets | 67.36 | 30.99 |
| Government Accredited Agents | 28.52 | 66.91 |
| Farmers' Associations | 3.15 | - |
| Others | 1.07 | 2.10 |

## 2.3. Sharp practices during fertilizer distribution

It is the contention of the farmers as shown in Table 3 that before year 2013, favouritism, inducement, hoarding, nepotism and bribery bedevilled fertilizer distribution as stated by 41.15, 17.1%, 24.3% and 17.1% of farmers respectively. The new system is put in place to check the sharp practices and other inherent flaws associated with the old scheme and will let fertiliser get to genuine small scale farmers (Tiri et al., 2014) while from 2013, 35.23%, 3.23%, 4.46%, 54.93%, and 2.15% farmers believed that favouritism, inducement, hoarding, nepotism, and bribery respectively is bedevilling fertilizer distribution. However, the statistics from the table showed vividly that sharp practices have dwindled considerably in the new fertiliser distribution system compared to the old system.

**Table 3.** Perceived Sharp Practices in Fertilizer Distribution

| Parameter | Definition | Before 2013 (%) | From 2013 (%) |
|---|---|---|---|
| Favouritism | Unfair generous treatment giving to a set of group / individual over others | 41.5 | 35.23 |
| Inducement | Enticement giving to someone for acting in a specific way | 17.1 | 3.23 |
| Hoarding | To collect and store something secretly in large quantity | 24.3 | 4.46 |
| Nepotism | Preference shown to friends / relatives over others. | 17.1 | 54.93 |
| Bribe | Dishonest payment given to someone to act in one's favour | - | 2.15 |

*N=140*

## 2.4. Effect of fertilizer distribution on agricultural production

The effect of fertilizer distribution as shown in Table 4 indicates that before year 2013, 41.4% of respondents got one and less than one bag of fertilizer, 18.6% respondents got 1 – 2 bags, 15% got 2-5 bags while 25% got more than five bags. This is consistent with the position of (Ayinde et al., 2009) that fertiliser distribution in Nigeria is dwindling and efforts need to be put in place to correct the situation. From 2013 100% of farmers got at least 2 bags of fertilizer and 24.5% of farmers believed that fertilizer distribution was early while 37.5% felt it was late prior to 2013. However, 49.7% believed that fertilizer distribution was prompt while 25.8% are of the opinion that it was late from 2013. The new scheme looks better than the old one in terms of accessibility and quantity of fertilizers received by the farmers. Average farm size prior to 2013 stood at 4.5 ha and decreased to 3.2 ha under the new scheme due to the fact that farmers irrespective of farm size got not more than two bags of fertilizers. Also, farmers produced more under the old scheme (4.9 tons), and produced less under the new scheme (3.5 tons). This can be ascribed to perceived insufficient fertiliser supply of the new system which is restricted to a maximum of two bags by farmer (Adebo, 2014) and consistent with the finding of (Oye and Goji, 2013) that farmers tend to buy and use more fertiliser when the price increases.

It is revealed in Table 5 that 52.9%, 88.6%, 85.7%, 20%, 64.3%, 86.7%, 4.3%, 8.6%, and 4.3% of farmers respectively believe high cost, inadequate funding, late arrival, lack of access, scarcity, uneven distribution, growth of weed, lack of information, non- availability are constrained to fertilizer distribution prior to 2013. However, 90%, 25%, and 4.3% of farmers respectively believed that inadequate fertilizer, late arrival of fertilizer, and weed growth are major bane to effective fertilizer distribution under the new scheme. On late arrival of fertiliser (Idachaba, 1994) maintained that to have a meaningful yield in agriculture there is need

for efficient fertiliser distribution system and that fertiliser must get to farmers at the right time. (Aiyetan and Pindiga, 2013) alluded to the views of the respondents that the new system is not devoid of constraints among which are corruption, cutting corners, illegal fee, extortion, and fertiliser diversion. The table further showed the way forward suggested by farmers on how to eradicate the constraints in effective fertilizer distribution. They suggested the following to aid distribution in the old scheme: Even distribution by wards (59.7%), increase quantity of fertilizer per beneficiary (11.9%), having personal encounter with farmers (1.4%). They gave the following suggestions for the new scheme: Increase quantity of fertilizer per beneficiary (81.5%), using people of integrity (42.7%), and lastly, having personal encounter with farmers. Increasing allocation of fertilizer from two to more bags was also put forward by respondents. This position is held by many researchers among who are (Oye and Goji, 2013) and (Adebo, 2014).

**Table 4.** Effect of Fertilizer Distribution on Production

| | | **Before 2013** | | **From 2013** | |
|---|---|---|---|---|---|
| Variables | Parameters | Frequency | Percent | Frequency | Percent |
| **Quantity accessed (bags)** | 1 and below | 57 | 41.4 | 122 | 87.1 |
| | >1 – 2 | 26 | 18.6 | 18 | 12.9 |
| | >2 – 5 | 21 | 15.0 | - | - |
| | > 5 | 34 | 25.0 | - | - |
| **Timeliness** | Early | 36 | 25.0 | 35 | 24.5 |
| | Prompt | 52 | 37.5 | 69 | 49.7 |
| | Late | 52 | 37.5 | 32 | 25.8 |
| **Farm size** | < 2 ha | 120 | 85.6 | 110 | 78.6 |
| | 2 - 5 ha | 12 | 8.6 | 24 | 17.1 |
| | 5 - 10 ha | 4 | 2.9 | 6 | 4.3 |
| | > 10 ha | 4 | 2.9 | - | - |
| | Mean | 4.5 | | 3.2 | |
| **Quantity produced** | < 1 ton | 81 | 58.6 | 98 | 70.0 |
| | 1 - 5 tons | 29 | 20.0 | 34 | 24.3 |
| | 5 - 10 tons | 24 | 17.1 | 8 | 5.7 |
| | > 10 tons | 6 | 4.3 | - | - |
| | Mean | 4.9 | | 3.5 | |
| **Total** | | **140** | **100.0** | **140** | **100.0** |

*Constraints and Solution to fertiliser distribution prior to 2013 and after 2013*

**Table 5.** Constraints of Fertilizer Distribution on Production

| | | Before 2013 (%) | From 2013 (%) |
|---|---|---|---|
| **Constraints** | Expensive | 52.9 | - |
| | Inadequate Funding | 88.6 | 90.0 |
| | Late arrival of fertilizer | 85.7 | 25.0 |
| | Not Accessible | 20.0 | - |
| | Scarcity | 64.3 | 4.3 |
| | Uneven Distribution | 86.7 | - |
| | It enhance quick growth of weeds | 4.3 | - |
| | Lack of Information | 8.6 | - |
| | Not readily available | 4.3 | - |
| **Suggested way out** | Even Distribution by wards | 59.7 | - |
| | Government should Increase the Quantity of Fertilizer per Beneficiary | 11.9 | 81.5 |
| | Using people of integrity | - | 42.7 |
| | Personal encounter with farmer | 1.4 | 11.9 |

*N=140*

## 2.5. Test for Hypothesis 1

The results of the relationship between the socio-economic characteristics of farmers and their tendency to indulge in sharp practices are presented in Table 6 and 7.

**Table 6.** Chi-Square

| Parameters | Gender | Marital Status | Level of Formal Education |
|---|---|---|---|
| Pearson Chi-Square Value | 0.388 | 1.730 | 8.874 |
| Df | 1 | 3 | 5 |
| Significance @ P<0.05 | 0.533 | 0.630 | 0.114 |
| Status | NS | NS | NS |

*N = 140*

The results in Table 6 and 7 revealed that there is no significant relationship between the socio-economic parameters of farmers and their tendency to indulge in sharp practices. This is in agreement with the position of (Heyneman, 2004), that there is positive relationship between the level of educational attainment and the tendency to indulge in corruption. However the relationship between years of experience in farming

and tendency to indulge in corruption is significant since most respondents are old and are used to old methods of doing things.

**Table 7.** Pearson Correlation

| Parameters | Age | Household Size | Years of Experience |
|---|---|---|---|
| Pearson Correlation Value | 0.119 | 0.057 | -0.150 |
| Significance @ P<0.05 | 0.327 | 0.637 | 0.216 |
| Sum of Squares and Cross-products | 63.271 | 1.486 | -5.971 |
| Covariance | 0.917 | 0.022 | -0.087 |
| Status | NS | NS | S |

*N = 140*

## 2.6. Test for Hypothesis 2

**Table 8.** T-Tests results

| | Paired Differences | | | | | t | df | Significance @ P<0.05 |
|---|---|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference Lower | Upper | | | |
| Sharp Practices before 2013versus Sharp Practices from 2013 | 0.1714 | 0.8507 | 0.1017 | -0.0314 | 0.37429 | 1.686 | 69 | 0.096 |

*N=140*

Table 8 showed the result of the relationship in the level of sharp practices between the past and present mode of fertilizer distribution using T-test at 5% level of significance, implying that there isno significant statistical difference in the level of sharp practices between the past and present mode of fertilizer distribution in the study area.The E-wallet system therefore has greatly reduced some forms of sharp practices but sadly has given rise to other forms such as Nepotism.

## 3. Summary

From the results, it was found out that, the majority of the farmers were above 51 year, male, they were responsible married men, though they had no formal education, they took farming as their primary occupation which indicates that they had more than 15years of experience.

The study found out that the mode of fertilizer distribution before year 2013 was through open market while it is been distributed through Government Accredited Agents from year 2013. In accessing fertilizer by the farmers before 2013, favouritism, hoarding and nepotism were the perceived sharp practices which were the order of the day, though from 2013 Nepotism and Favouritism are the major sharp practices but at the minimum level. Also found out that farmers obtained their fertilizer at their own convenience before 2013 but it was not so from 2013, they got it at early and appropriately.

### 3.1. Conclusion

Conclusively, as from 2013, Farmers now access and obtain fertilizer from Government accredited Agents for their agricultural production. Also some sharp practices such as hoarding, bribery, inducement, favouritism and others has been curbed from 2013 to some extent.

### 3.2. Recommendation

Although it is not without its flaws, the new scheme of fertilizer distribution (i.e. E-wallet) has brought about reduction in the perpetration of some forms of sharp practices. However, it is recommended that there is need for government to plug all loopholes facilitating corruption. There is also a need to scale up the quantity of fertilizer allocated under the E-wallet scheme. There is equally a need to capture those that are yet to be captured by the scheme for optimum production and efficiency.

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