FACTORS INFLUENCING THE PARTICIPATION IN E-WALLET SCHEME BY BENEFICIARIES IN KADUNA STATE, NIGERIA

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ABSTRACT
This study assessed the sources of information about the E-Wallet Scheme in Kaduna State, Nigeria. The specific objectives include to: identify the source of information about the E-Wallet Scheme; examine the accuracy of information received about the workings of the E-Wallet Scheme; level of information about the workings of the E-Wallet Scheme and determine the factors that influenced the beneficiaries' participation in the scheme. Data were collected using structured interview schedule with the help of trained enumerators from Kaduna State Agricultural Development Project (KADP). A total of 240 questionnaire were administered to the beneficiaries in the four Zones of KADP that constitute the study area. Descriptive statistics, Ordered logit regression, Z-test and Chi-Square were used in the analysis of data. The beneficiaries indicated that extension workers (55.4%) were the major sources of information on E-Wallet scheme in the study area; this was followed 34.2% who got their information through radio. Also from the results, 85.0% of the farmers indicated that subsidized price was the reason why they engaged in E-Wallet scheme. The results also showed that 51.7% said that payment above the stipulated price was one of the major challenges faced by participants of the scheme; others include political influence and change in goverment policy.It is recommended that the quantity of fertilizer per beneficiary should be increased from two bags to four bags and there should be strict monitoring to curb increase in prices and sale of the inputs by beneficiaries.
Key Words: Sources, Information, Influence, Participation

INTRODUCTION
Farmers' access to modern agricultural inputs is the backbone to any agricultural revolution. These agricultural inputs range from improved seeds, fertilizers and crop protection chemicals to farm machinery, irrigation and knowledge. Seeds are critical to successful crop production and inevitably, farm productivity and profitability. Fertilizer supplies nutrients to the soil that are essential for growth of crops. Increased use of fertilizer and improved seeds are partially credited with large increases in agricultural productivity growth in Asia during the Green Revolution in the 1960s (Sahel, 2014). The International Fertilizer Distribution Centre/International Food Policy Research Institute (IFDC/IFPRI, 2012) reported that most of these agricultural outputs come from resource-poor small scale farmers (with holdings between 0.8 and 1.2 hectares of land) and are usually fragmented having low input. These resource poor farmers are characterized by using low levels of inputs and consequently also generating low output. Many of them still use obsolete farming techniques and do not have access to basic production tools nor to production inputs (improved seed varieties, fertilizer and herbicides).

To promote agricultural development among farmers, the supply and use of fertilizer and other important inputs must be encouraged and increased. Therefore, this means a cost-effective input supply system from importation or production to farm gate for easy accessibility by the farmers. Lack of fertilizer means low yield which means low income, which in turn further keeps fertilizer economically out of reach of local farmers (IFDC/IFPRI, 2012; Danlami, 2014). Fertilizer usage in Nigeria has been put at 13kg/hectare (IFDC, 2013), while the rest of the world's average annual usage is 100kg/hectare but higher in Asia at an average of 150kg/ hectare. In Nigeria less than ten percent of farmers have access to improved seeds (IFDC, 2013). Analysis of the relative increase in crop yields in developing countries shows that Nigeria's crop yields have the lowest growth rate of 0.2% from 1968 to 2008 as against 1.2% for China, 2.3% for Indonesia and 3% for Malaysia (World Bank, 2013). The farm outputs could hardly feed the farmers and their families. According to Adebo (2014), large proportion of farmers depends on imported foods for their families' sustenance.

The Federal Government of Nigeria in its efforts to overcome the problem associated with inputs supply to farmers, especially smallholder farmers, introduced the Growth Enhancement Support Scheme (GESS) and the use of Electronic Wallet (E-Wallet) approach or simply E-Wallet scheme. The E-Wallet Scheme is an approach that uses an efficient and transparent electronic device system that makes use of vouchers for the purchase and distribution of agricultural inputs (Ezeh, 2013; Adesina, 2013). The criteria for farmers' participation include: farmers being above 18 years old; have participated in a survey authorized by the government to capture farmers' personal detailed information; must own a cell phone with a Registered SIM card and have at least sixty Naira credit in the cell phone. The fulfillment of these conditions guarantees the issuance of an E-Wallet voucher to the farmer. The voucher is used to redeem fertilizers, seeds and herbicides from agro- dealers at half the cost price (Signal Alliance, 2014). The subsidized farm inputs are delivered directly to farmers through their mobile phones. The project is expected to provide direct linkage between farmers and the government. This will enable the government to disseminate valuable information to the farmers, thus ensuring farmers' progress (Ezeh, 2013).

According to Ajani and Igokwe (2002) the distribution of agro inputs such as fertilizer, seeds and agro chemicals in Nigeria had been faced with fraudulent practices ranging from adulteration to diversion of products. The different levels of governments in Nigeria from the federal to states and even local government authorities have been expending much money on the procurement and distribution of inputs to targeted farmers without yielding the desired result (Gregory, 2006). In spite of the continued application of subsidy, total farm inputs such as fertilizer usage are far below the potential and economic demand (Salimonu, 2008). Several past governments in Nigeria have made several attempts over the years to boost farmers' productivity. Among these efforts are the supplies of farm inputs such as improved seeds, agrochemicals and fertilizers at subsidized prices to farmers. The adoption and use of modern inputs remains one of the best hopes toward higher agricultural production in developing countries. Agricultural productivity increases and modern input use are high on the international agenda. World food shortage can largely be attributed to under-investments in the agricultural sector. This has been especially the case in Africa where there is still a large, perceived potential for productivity growth. The conventional wisdom is that the most promising way to increase agricultural production in Africa

is through widespread adoption of modern inputs such as chemical fertilizer and improved seed, as the adoption of these new technologies by African farmers is still much lower than adoption by farmers elsewhere in the world (Minternet al., 2014).

The efficient use of quality agro-inputs (improved seeds, fertilizers and crop protection products, or CPPs) is a necessity for the improvement of agricultural production and increase incomes, particularly in Sub-Saharan Africa (SSA), which has necessitated the constant call to increase the much-needed access to agro-inputs, information and modern farming techniques for millions of smallholder farmers. However, a large proportion of these inputs could not be reached by farmers, as a result of the high level of corruption, insincerity and political interruption in marketing and distribution channels. Adesina (2013) pointed out that the old system used in supplying inputs to farmers was weak, inefficient and fraudulent, hence a large proportion of farmers could not benefit from it, further stressing that the inputs meant for farmers were diverted by political elites to other countries for personal gains, noting that most of the fertilizers supplied were adulterated, thus damaging the environment.

The difference in the price of modern inputs at the distribution centre and the effective price faced by the farmer when the inputs are applied to his or her field are as a result of two main factors: First, farmers face transportation costs-explicit costs as well as opportunity costs of time to travel to the input distribution point. This situation is prevalent in Africa as modern input markets are usually rather thin; distribution centers, traders, and shops are limited; and farmers often live in remote areas. Second, as stimulating the adoption of modern inputs is often a deliberate strategy of governments, the state is frequently involved in implicit and/or explicit input subsidy schemes. Governments impose specific rules to assure that their subsidies or other public investments in input supply are targeted, or they might organize input distribution themselves. However, this often leads to managerial problems, administrative costs, and sub-sequent increased transaction costs for farmers (Mintern et al*.,* 2014). The study looked at the following objectives, to: identify the source of information about the E-Wallet Scheme; examine the accuracy of information received about the workings of the E-Wallet Scheme; level of information about the workings of the E-Wallet Scheme and to identify the factors that influenced the beneficiaries' participation in the scheme.

METHODOLOGY

Kaduna State is one of the 36 States in the Federal Republic of Nigeria. The total land mass of the State is estimated at 46,053 sq km which is about 5% of the total land area of Nigeria (Nigeria Galleria, 2017). Using 3.18% growth rate as allowed by the National Population Commission, the projected population of Kaduna State would therefore be 8,446,417 by the year 2018 (National Population Census, (NPC), 2006) The State is situated between Latitudes 90^0 2' and 110^0 35' N and between Longitude 70^0 15' and 90^0 6' E. It is bordered by the Federal Capital Territory and Nasarawa State in the South, South East by Plateau and Bauchi States, North East by Kano State, in the North by Katsina State, North West by Zamfara State and South West by Niger State, Kaduna State is located in a pen plain consisting of various kinds of rocks, such as the older granite, schist and quartzite in variable composition (Kaduna State Development Plan, 2013). Kaduna State is basically agrarian with majority of the people actively engaged in farming where they cultivate cash and food crops such as yam, cotton, groundnut, tobacco, maize, beans, guinea corn, millet, ginger, rice and cassava. Other important secondary

agricultural enterprises include poultry, cattle, sheep, goats, pigs and fishery. Small scale famers dominate agricultural production in the State.

The growth enhancement scheme was implemented in all the States of Nigeria. This study was carried out in Kaduna State, Nigeria. A multi stage sampling procedure was adopted in selecting the beneficiaries for the study. According to the Kaduna Agricultural Development Project (KADP) zonal system, the state is divided into four agricultural zones namely: Birnin-Gwari, Maigana, Lere and Samaru. The first stage involved a random selection of two Local Government Areas in each of the four KADP Zones to give eight (8) Local Government Areas. The second stage involved the selection of two redemption centres in each selected Local Government Area (LGA) in each Zone to give 16 redemption centres. The last stage involved a 10% proportional random selection of farmers who benefitted from the E-Wallet scheme from each redemption centre giving a total of 240 farmers from a sampling frame of 2400 participants. Primary data were collected through the use of structured interview schedule with the help of trained enumerators.
For this study both descriptive and inferential statistical tools were used to analyse the data. Descriptive statistics such as percentage, mean, and frequency were used to achieve objectives. Ordered logit regression model was used to identify the factors that influenced the farmers' participation in the scheme.

The model is expressed as:

$Y = a+b_1X_1+b_2X_2+b_3 X_3 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots b_{16}X_{16}+ U \ldots\ldots$equation 1

Where:
Y = Farmers' participation in the E-Wallet scheme
X_1 = Age (Years)
X_2 = Sex (Male = 1, Female =0)
X_3 = Farm size (ha)
X_4 = Level of education (Years spent in school)
X_5 = Household size (Number).
X_6 = Marital status (Married=1, Not married=0)
X_7 = Income (Total annual income in ₦)
X_8 =Farming experience (Years)
X_9 = Access to redemption centres (measured in kilometers)
X_{10} = Access to fertilizer (measured in kg)
X_{11} = Access to improved seeds (measured in kg)
X_{12} =Access to herbicide (measured in litres)
X_{13} =Good GSM network service (Good network=1, Bad network=0)
X_{14} =Electricity supply (available=1, Not available= 0)
X_{15} = Loss of handset (Cell phone) (Lost Handset=1, No Lost=0)
X_{16} = Wrong posting of information (Correct =1, Incorrect= 0)
U = Error term

RESULTS AND DISCUSSION
Sources of Information on E-Wallet Scheme in the Study Area

Table 1: Sources of information on E-Wallet scheme

Variable	**Frequency**	**Percentage**	**Rank**
Extension worker	133	55.4	1st
Radio	82	34.2	2nd
Other farmers	29	12.1	3rd
Newspaper	7	2.9	4th
Friends	7	2.9	4th
Television	5	2.1	6th
Family members	2	0.8	7th

Sources: Field survey, 2016; *Multiple responses recorded

Table 1 indicated that extension workers (55.4%) were the major sources of information on E-Wallet scheme in the study area; this was followed (34.2%) who got their information through radio. Similarly, other farmers were ranked third with (12.1%). While newspaper (2.9%), friends (2.9%) and family members (0.8%) were the sources of information among the respondents on E-Wallet scheme. This finding indicated that most of the farmers in the study area got information about E-Wallet scheme through extension workers and radio. This finding is in line with another study by Tologbonse et al*.,* (2010) who stated that the most important information sources for agricultural innovation are extension workers and radio. The success of any programme is fully dependent on the spread of information on that programme by the extension workers. Information is very vital in E-Wallet scheme because the higher the information, the higher the participation in the scheme.

Accuracy of Information Recieved from the Scheme

Table 2: Distribution of beneficiaries according to accuracy of information received(n=240)

Variable	Frequency	Percentage
Meeting date and time	26	10.8
Types of inputs supplied	102	42.5
Price of inputs supplied	144	60.0
Meeting venue	75	31.2

Sources: Field survey, (2016); *Multiple responses recorded

Table 2 showed that (60.0%) of the beneficiaries recieved accurate information on price of inputs supplied while (42.5%) recieved information on types of inputs supplied through the scheme. Also, (31.2%) of the beneficiaries recieved information about meeting venues while (10.8%) of the farmers recieved information about meeting date and time. Information is very vital because it plays a major roleon the effectiveness of the scheme. Table 2 indicates that (60%) of the farmers received accurate information on price of inputs supplied through the scheme. The information is sent by the desk officers in the State capital to the various beneficiaries of the E-Wallet scheme all over the State. However, Nwalieji et al., (2015) found that the use of phone as source of information in input redemption was quite disappointing all round. This is similar the report of Fertilizer Producers and Suppliers Association of Nigeria (FEPSAN) (2012) reported

that farmers in most parts of the country especially Calabar were unable to receive text messages with E-Wallet system due to poor network from telecommunications service providers, making it difficult to get their packages.

Level of Information about Workings of E-Wallet among the Beneficiaries

Table 3: Level of information about workings of E-Wallet scheme among the beneficiaries

Variables	Sufficient	Not sufficient	No information	Sum	Mean	Remarks
Meeting with E-Wallet officials	37 (15.4%)	125 (52.1%)	78 (36.1%)	439	1.82	NS
Enumeration of farmers	42 (17.5%)	122 (50.8%)	76 (31.7%)	446	1.85	NS
Registration of farmers	104 (43.3%)	104 (43.3%)	32 (13.3%)	552	2.30	S
Location of redemption center	110 (45.8%)	94 (39.2%)	36 (15.0%)	554	2.31	S
Numbers and type of agro-dealers	55 (22.9%)	75 (31.2%)	110(45.8%)	425	1.77	NS
Types of inputs to be sold	116 (48.3%)	86 (35. 8%)	38 (15.8%)	558	2.33	S
Prices of input to be sold	134 (55.8%)	72 (30.0%)	34 (14.2%)	580	2.41	S
Time of inputs collection	71 (29.6%)	123 (51.2%)	46 (19.2%)	505	2.10	S
Consequence for loss of handset	17 (7.1%)	112 (46.7%)	111(46.2%)	386	1.61	NS
Delay in redeeming inputs	21 (8.8%)	123 (51.2%)	96 (40.0%)	405	1.69	NS
Where and how to lay complaints	25 (10.4%)	133 (55.4%)	82 (34.2%)	423	1.76	NS

Source: Field survey, 2016 Note: S=Sufficient, NS= Not sufficient

Table 3 revealed the distribution of beneficiaries according to the level of information about the working of the E-Wallet. This was based on 3 point Likert type scale of sufficient (3), not sufficient (2) and no information (1), these were summed up to get 6 and the mean point stands at 2.0, any point below the midpoint was considered to be not sufficient while any point greater than the mid point is sufficient. The results revealed that the farmers in the study area agreed with the following sufficiency of information, types of inputs sold, location of the redemption centres, and registration of farmers and time of collection of inputs. Price of inputs to be sold ($\bar{X}$ = 2.41), type of inputs to be sold ($\bar{X}$ = 2.33), location of redemption centre ($\bar{X}$ = 2.31), registration of farmers ($\bar{X}$ = 2.30) and time of inputs collection ($\bar{X}$ = 2.10). The sufficiency of information about E-Wallet is expected to affect the effectiveness of the scheme, the sufficiency of information signify the wide spread of the scheme, this finding is in agreement with Fadairo et al., (2015) who reported that the farmers were satisfied with the use of phone to receive messages on the E-Wallet scheme. The result of the Likert type scale above revealed the effectiveness of the programme. The sufficiency was determined using 3 point likert scale which gave a midpoint of 2.0, any mean score less that the midpoint is regarded as not sufficient while any mean above the midpoint is regarded as sufficient.

Similarly, the results revealed that the followings are not sufficient, enumeration of farmers ($\bar{X}$ = 1.85), meeting with E-Wallet officials ($\bar{X}$ = 1.82), numbers and type of agro-dealers ($\bar{X}$ = 1.77), where and how to lay complaints ($\bar{X}$ = 1.76), delay in redeeming inputs ($\bar{X}$ = 1.69) and consequence for loss of handset ($\bar{X}$ = 1.61), this implies less effectiveness of the E-Wallet scheme. This is in agreement with findings of Nwalieji et al*.,* (2015) who reported that farmers were not satisfied in most of the scheme's implementation processes/activities like enumeration of farmers, meeting with E-Wallet officials, numbers and type of agro-dealers, where and how to lay complaints, delay in redeeming inputs and consequence for losing of handset.

Factors Influencing Beneficiaries' Level of Participation in E-Wallet Scheme using Ordered Logit Regression

Table 4: Result of Ordered logit regression of factors influencing beneficiaries' level of participation in E-Wallet scheme

Variables	Coefficients	Z-value	Remarks
Age	.0100303	0.61	Not significant
Sex	.0949257	0.31	Not significant
Marital status	-.0795958	-0.34	Not significant
Household size	-.0165553	-0.52	Not significant
Education	-.0067692	-0.26	Not significant
Total farm size	-.0810257	-1.35	Not significant
Income after E-wallet	2.01e-07	3.63***	Significant
Redemption center	.5394694	2.38***	Significant
Distance to redemption centre	-.2637196	-2.13**	Significant
Functional handset	-.4628624	-0.92	Not significant
Network problem	1.31538	4.07***	Significant
Delay in redeeming inputs	.0480971	0.12	Not significant
Access to fertilizer	1.962752	3.24***	Significant
Access to improved seeds	-.9324993	-1.95**	Significant
Fertilizer during the scheme	-8.55e-06	-0.09	Not significant
Improved seed during the scheme	-.0040792	-2.20**	Significant
Log likehood = -32.608861			
LR chi square (17) = 164.65			
Prob>chi square = 0.0000			
Pseudo R^2 = 0.4847			

Source: Field survey, (2016);

*** = significant at 1% level of probability **=significant at 5% level of probability

The Table 4 revealed the factors influencing the beneficiaries' level of participation in E-Wallet scheme in the study area, the coefficient of income after the scheme (2.01e-07) was positive and significant at 1% level of probability, and this implies that increase in income of the farmers will lead to more participation in programmes like E-Wallet. This is in line with *a priori* expectation. It is likely that the E-Wallet scheme in the study area have made positive financial effect on the farmers, hence, increased the likelihood of the participants in the project component. It is inferred therefore that the moderate farm income realized by the farmers in the study reflected in this result. This result is in conformity with Akangbe et al*.,* (2012) that farmers were assisted by

various projects to have an increased income, which perhaps increased farmers' level of participation in the project components.

However, the coefficient of redemption centers (.5394694) was positively significant at 1% level of probability; this implies that increase in number of redemption centers will positively influence the participation of E-Wallet beneficiaries in the schemewhich implies that availability of adequate redemption centres helped to increasethe level of effectiveness of E-Wallet scheme in the study area. Similarly, the coefficient of network problem (1.31538) was significant at 1% level of probability and was positive and significant; this implies that network positively affected the level of effectiveness of E-Wallet scheme. Furthermore, the coefficient of access to fertilizer (1.962752) was significant at 1% level of probability and the coefficient is positive, this implies that access to fertilizer played vital role in E-Wallet scheme. Also, the coefficient of access to improved seed (-.9324993) was negative but significant at 5% level of probability, this might be due to the fact that the farmers did not have access to adequate improved seeds. This result is at variance with Yaron et al*.,* (2009) who stated that non access to farm inputs was negative and may slow down the motive to participate in agricultural programmes and will also constrain farmers to adopt new technologies. Lastly, the coefficient of improved seeds during the scheme (-.0040792) was also negative but significant at 5% level of probability, this implies that the farmers did not have access to adequate improved seeds during the scheme.

CONCLUSION

The Agricultural Transformation Agenda (ATA) in which E-Wallet was the major component where inputs were supplied to farmers at subsidized prices through their mobile phones was an innovation that was welcomed by many farmers. This is because they were able to access farm inputs easily and cheaper with higher quality than those obtained in the open markets. Many farmers reported that the programme was one government policy that ever touched the life of the ordinary farmer who all the while had never felt the effect of any programmes of government. The ease in getting inputs at reduced prices really impacted the lives of the farmers positively through increased income, improved livelihood and helping them to acquire assets. Although, there were challenges faced in the implementation of the programme, these challenges would have been surmounted if the scheme was left to continue but the government that came after abolished it without a concrete replacement, this action has made the farmers to call for the re-introduction of the E-Wallet scheme in order to reduce the hardships faced by farmers during the farming season.

RECOMMENDATION

Based on the findings of the study, the following recommendations are hereby provided:

1. Government should engage more extension workers in the dissemination of information and the working of the E-Wallet Scheme
2. The farmers suggested the re-introduction of the scheme, reorganize its operational procedure with the view of making it more effective
3. Service providers (Network providers) should improve their services to the E-Wallet beneficiaries so that they can receive information sent to them without hitches.

REFERENCES

Adebo, G.M. (2014). Effectiveness of E-Wallet Practice in Grassroots Agricultural Service Delivery in Nigeria-A Case Study of Kwara State Growth Enhancement Support Scheme. *Journal of Environmental Biology and Agricultural Sciences.2(4),1-9.*

Adesina, A. (2013). Honorable Minister of Agriculture and Rural Development, Federal Republic of Nigeria, at the 36Th Session of the IFAD Governing Council.

Ajani, E. N. and Igokwe, E. M. (2002), Promoting Entrepreneurship and Diversification as a Strategy Adaptation among Rural Women in Anambra State, Nigeria. *Journal of Agricultural Extension 16(2), 71-78.*

Akangbe, J. A., Ogunyinka, W., Ayanda, I.F., Achem, B. &Adisa, R.S. (2012). An Assessment of Effects of Fadama II Project on Livelihood of Farmers in Orire Local government Area of Oyo State, Nigeria. *Nigerian Journal of Agriculture, Food and Environment*, *8(1),27-32.*

Danlami, A. H. (2014). Determinant of Demand for Fertilizer: A Conceptual Review. IOSR *Journal of Economics and Finance* (IOSR-JEF). *4(4),45-48.*

Ezeh, A. N. (2013). Access and application of information and communication technology (ICT) among farming households of south east Nigeria. *Agriculture and Biology Journal of North America.3(4),605-616.*

Fadairo, O. S., Olutegbe, N. S. & Tijani, A.M. (2013). Attitude of crop farmers towards e-wallet platform of the Growth Enhancement Support Scheme for input delivery in Oke-Ogun area of Oyo state. *Journal of Agricultural Informatics. 6(2), 54-62.*

Fertilizer Producers and Suppliers Association of Nigeria (FEPSAN) (2012). Working together to improve fertilizer supply in Nigeria. Newsletter, vol. 2 (8). Retrieved on22/12/2017from http://fepsannigeria.com/files/Newsletter%2520Vol%25202%2520No%25208.pdf http://www.tribune.com.ng. GES review: Mixed feelings as stakeholders brainstorm on way forward.

Gregory, I. (2006). The Role of Input Vouchers in Pre-Poor Growth. Selected Sections from Background Paper Prepared for the African Fertilizer Summit, Abuja, Nigeria.

International Fertilizer Distribution Center (IFDC) (2013) International Fertilizer Distribution Center Projects in Nigeria. Available onhttp://www.ifdc.org/Nations/Nigeria accessed on November 23, 2014.

International Fertilizer Distribution Center (IFDC)/ International Food Policy Research Institute (IFPRI) (2012). Improving Fertilizer Markets in West Africa: The Fertilizer Supply Chain in Nigeria. Available onhttp://www.ifdc.org/Assessed on November 23, 2014.

Jamilu, A.A., Atala, T.K., Akpoko, J.G. &Sanni, S.A. (2015). Factors Influencing Smallholder Farmers Participation in IFAD-Community Based Agricultural and Rural Development Project in Katsina State. *Journal of Agricultural Extension, 19 (2), 4-9.*

Kaduna State Agricultural Development Project (KADP) House Listing Survey(2013). State Development Plan 2014-2018. Kaduna State Ministry of Economic Planning.

Kareem, H.T. &Akinbile, L.A. (2015). Perceived Contribution of Agricultural Transformation Agenda to Rice Production of Farm Families in Southwestern Nigeria. *Journal of Agricultural Extension*, *19 (2)*, *12-19.*

Mgbenka, R. N. &Mbah, E. N. (2016). A Review of Smallholder Farming in Nigeria: Need for Transformation. *International Journal of Agricultural Extension and Rural Development Studies. 3(2), 43-54.*

Mintern, B., Koro, B. & Stifel, D. (2014). The last Mile(s) in Modern Input Distribution: Evidence from Northwestern Ethiopia. ESSP Research Note 24. National Bureau of Economic Research (2014). Global Demographic Change: Dimensions and Economic Significance. NIBER working Paper series. Available on http://www.nber.org/papers/w10817 retrieve on November 23, 2014.

National Population Commission (NPC) (2006). Provisional Census Report for Nigeria (Draft Report), 105-115.

Nigeria Galleria (2017). Brief History of Kaduna State. Accessed on 20/12. 2017

Nwalieji, H.U., Uzuegbunam, C.O. & Okeke, M. N (2015). Assessment of Growth Enhancement Support Scheme among Rice Farmers in Anambra State, Nigeria. *Journal of Agricultural Extension*, *19(2), 6-17.*

Oyediran, W. O., Dick, T. T., Owolade, E. O. & Oluade, E. A. (2015). Contributions of Growth Enhancement Support Scheme (GESS) programme to food security and poverty alleviation of Agricultural Cooperatives in Ogun State, Nigeria. *Journal of Educational Policy and Entrepreneurial Research. 2(6),13-22.*

Philip, D., Nkonta, E., Pender, J. & Oni, O. A. (2009). Constraints to Increasing Agricultural Productivity in Nigeria: A Review. International Food Policy Research Institute (IFPRI), Background Paper, 6.

Sahel (2014). Sahel Newsletter, 6(3). www.sahelcp.com. Accessed June 23, 2015.

Salimonu, K. K., (2008). Access to Fertilizer Subsidy among Food Crop Farmers in Osun State, Nigeria. *International Journal of Agricultural Economics & Rural Development (IJAERD), 1(2), 58-62.*

Signal Alliance (2014). ERP For the Agriculture Sector in Nigeria. Transforming Big Data into Big Value in Agriculture Industry. http://www.slideshare.net/signalalliance/erp-for-the-agriculture-in-nigeria accessed on November 23, 2014.

Tologbonse, E.B., Auta, S.J., Bidoli, T.D., Jaliya, M.M., Onu, R.O. & Issa, F.O. (2010). Farmers' Perception of the Effects of Climate Change and Coping Strategies in three agro-ecological zones of Nigeria. *Journal of Agricultural Extension.* 14 (1), 144-156. United Nations Development Programme, Human Development Report. 2004

World Bank (2013). Nigeria/World Bank Data. Trading Economics available on http://www.tradingeconomics.com/nigeria/indicators-wb accessed on November 23, 2014.

Yaron , D., Dinar, A. &Voet, H. (2009). Innovation on Family Farms; The Nazareth Region in Israel. *American Journal of Agricultural Economics, 361-370.*