



**AgEcon** SEARCH

RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

**DETERMINANTS OF FARMERS' WILLINGNESS TO UTILISE E-WALLET FOR ACCESSING AGRICULTURAL INFORMATION IN OSUN STATE, NIGERIA**

**Akinbile, L. A., Akwiwu, U. N., Alade, O. O.**

Department of Agricultural Extension and Rural Development, University of Ibadan, Ibadan

E-mail: uzoakwiwu@yahoo.co.uk

**ABSTRACT**

*Lack of access to information on agricultural input is a problem in Nigeria as in most developing countries. The e-wallet was introduced to extricate middlemen in input distribution. Efforts to eliminate middlemen in input distribution will enhance access to inputs. The study examined the factors affecting farmers' willingness to use e-wallet for accessing agricultural information in Osun state, Nigeria. Thirty percent of registered farmers were randomly selected to give a total of 67 registered farmers, while snow ball technique was used to sample 77 non-registered farmers. Interview schedule was used to elicit information on farmers' personal characteristics, farmers' awareness of the component of e-wallet for accessing agricultural information, willingness to use e-wallet and factors affecting the willingness to use e-wallet for accessing agricultural information. The data collected were analyzed using descriptive statistics, Chi-square, independent t-test and regression at  $P=0.05$ . The mean age of respondents was  $34\pm 9.5$  years while 43.1% had tertiary education. Awareness of the components of e-wallet for accessing agricultural information was high for majority (71.5%) of the farmers. Willingness to use the e-wallet in accessing agricultural information was on the average for majority (53.6%) of the farmers. A significant relationship exists between respondents' age ( $r=-0.06$ ), level of education ( $\chi^2=9.273$ ) and their willingness to use the e-wallet in accessing agricultural information. Willingness to use e-wallet in accessing agricultural information among registered and unregistered farmers showed significant difference ( $t= 5.877$ ), with registered farmers being more willing. Farmers' membership in cooperatives groups ( $\beta=0.36$ ) and training on improved agricultural technologies ( $\beta=0.01$ ) were factors that contribute to the use of e-wallet in Osun state with  $R^2$  value of 0.25. The study recommends that extension agencies provide adequate training on the use of e-wallet to farmers.*

**Keywords:** E-wallet, willingness to use, access to agricultural information

**INTRODUCTION**

Agriculture is the bedrock of Nigeria's growing economy as it provides vast employment opportunities, food security, reduces poverty and enhances industrialization. Efforts to improve agriculture in the country are presently being channelled through the transformation agenda. The Agricultural Transformation Agenda (ATA) is designed to make the agricultural sector a business oriented project in order to promote private investment in agriculture, execute integrated projects via value chain processes, generate employment and transform Nigeria into a net

exporter of agricultural commodities (Akinwumi, 2012). The goal of the ATA is for industrialization, economic growth, diversification of economy, create jobs, wealth and food security for the people. (Jonathan, 2012).

The action plan of ATA focuses on some agricultural commodities namely; rice, cassava, sorghum, cocoa, cotton, maize, oil palm, dairy, beef, leather, poultry and fisheries. Operation of the transformation agenda are based on prioritization of commodities along comparative advantage in the six geopolitical zones of the country and reform in the input supply sector to stop direct government

involvement in the procurement, supply of agricultural inputs and distribution of fertilizers and seeds to farmers (Akinwumi, 2012).

One of the components of the ATA is the use of the e-wallet under the Growth Enhancement Scheme (GES). The electronic wallet system (e-wallet) was introduced whereby mobile phones are used to deliver messages allocating subsidized fertilizer and seeds to farmers in the data base, informing them of designated centres where they would pay and collect agro products. The e-wallet stores financial or credit card information in order to complete a transaction without re-entering the same information twice. Prior to the introduction of the e-wallet, the agricultural sector was shrouded with a lot of irregularities, delay in supply of inputs getting to farmers and late or no supply of fertilizers and at exorbitant prices. The scheme has once again restored farmers confidence in government to boost agriculture as this exercise has recorded laudable achievement in the area of input delivery most especially fertilizers and seeds.

However, the technicality of an innovation affects its use. A well intended programme will not achieve its aim if farmers who are the users cannot cope with its technicality or are not willing to try it out. Therefore the extent to which farmers are willing to adopt and use this innovation (e-wallet) need to be identified and documented.

For the Federal Government, in their limitless capacity to ensure a transformed agricultural sector, a need for proper assessment of the factors affecting the uses of e-wallet for accessing agricultural information is required. Hence, the farmers' willingness to adopt the innovation is critically examined in order to ensure acceptability, compatibility and sustainability of the programme.

#### **Objectives of the study**

The general objective of the study is to determine factors associated with farmers'

willingness to utilize e-wallet for accessing agricultural information in the study area. The specific objectives are;

1. describe the personal characteristics of farmers participating in e-wallet for accessing agricultural information in the study area
2. determine farmers awareness of the components of e-wallet for accessing agricultural information in the study area
3. assess the willingness of the farmers to use e-wallet for accessing agricultural information in the study area.
4. identify factors affecting farmers use of e-wallet for accessing agricultural information in the study area.

#### **Hypotheses of the study**

H<sub>01</sub>: There is no significant relationship between selected personal characteristics of farmers participating in e-wallet and their willingness to use it in the study area.

H<sub>02</sub>: There is no significant difference in the willingness to use e-wallet among registered and non-registered farmers in the study area.

H<sub>03</sub> There is no significant contribution of factors affecting the use of e-wallet for assessing agricultural information.

#### **METHODOLOGY**

The study was carried out in Osun state which is located in South Western part of Nigeria. The population of this study comprised of registered and non-registered farmers that participate in the Growth Enhancement Scheme (GES) programme. Multi stage sampling procedure was used to select respondents for the study. One local government each Boluwaduro, Egbedore and Atakumosa was selected from the three senatorial zones of Osun state. Osun Central, Osun West and Osun East. Thirty percent of registered farmers from each of the local government area was randomly selected to give a total of sixty seven (67) registered farmers,

while snow ball technique was used to compile a list of non-registered from which seventy-seven (77) non-registered farmers were randomly selected. Thus, a total of 144 farmers were sampled and used for this study.

Data was collected using interview schedule on the respondents' personal characteristics, awareness of the components of e-wallet for assessing agricultural information, willingness to use the e-wallet and factors affecting the use of the e-wallet for assessing agricultural information. To ascertain respondents' awareness on e-wallet for assessing agricultural information, response of 'yes' or 'no' was used. Willingness of farmers to use the e-wallet for assessing agricultural information was measured by asking the farmers to indicate their level of willingness from a list of ten (10) statements on a three (3) point scale; seriously willing, partially willing and not willing. Scores of 2, 1, 0 were awarded to them respectively. Based on the scores the mean was used to categorize the respondents' willingness into low, average and high.

Frequency distribution, percentage and mean were used to summarize the data collected. Inferential statistics such as Chi-square, PPMC were used to test the stated hypotheses at 0.05 level of probability. Regression analysis was used to determine factors affecting the use of e-wallet for assessing agricultural information.

## RESULTS AND DISCUSSION

### Personal characteristics

**Age** - The results on Table 1 shows that majority 36.1% fall within the age range of 31- 40 years. About 30.6% are between 21-30 years while only a few were below 21 years. The mean age of the respondents was  $34 \pm 9.55$  years. This implies that majority of the respondents were in their active stage. This situation is favourable for agricultural production and the embrace of agricultural

innovation such as e-wallet. This finding corroborates with that of Sobalaje and Adigun (2013) who opined that young people are more skilled and are always alert on information on ICTs.

**Sex** - The study shows that there were more men (64%) than women (36%) counterparts. This may indicate that women are more involved in off-farm activities than their men counterparts and so are less involved in farming in the study area. This agrees with the findings of FAO (2001) that culturally men are more open and readily available to accept and access innovations than the female counterparts.

**Marital status** - Findings from the data as shown on Table 1 shows that larger proportions (61.1%) of sampled respondents in the study area were married. This may be as a result of high labour requirement in agricultural production in which they use members of their family as labour force and partly due to the expected benefits derived in feeding members of their family from what they produce. This findings agrees with Okoye, 1999; Orisakwe and Aguomo, 2004) that one factor that affects production and productivity of farmers is the composition and size of farm family.

**Educational level** - The table further shows that majority (43.1%) of the respondents had tertiary education, 41% and 11.8% had secondary and primary education respectively while a few (4.2%) had non-formal education. This shows that majority of the respondents were literate which could influence their receptivity to e-wallet facilities. This finding agrees with Obinne, 1991; Agwu *et.al*, 2008 who in similar research opined that education is an advantage to farm innovations as education has been shown to be a factor in the adoption of modern farm practices.

**Household size** - Household size is the immediate source of farm labour force. Often times the larger the household size, the greater the productivity. Findings from the study as illustrated on Table 1 shows that majority (40.3%) of the respondents indicated a household size of between 3-4 members, 37.5% indicated a household size of above four members while 22.2% indicated a household size of between 1-2. The implication of this finding is that more family labour would be readily available since according to Opara (2010) relative large household size is an obvious advantage in terms of farm labour supply.

**Farm size** - Findings from the study showed that a large proportion (86.1%) of the respondents had small farm size of range 1-5 acres, 12.5% had between 5.5-10 acres while a minority (1.4%) had above 10 acres. This suggests that most of the respondents in the study area small scale farmers. This agrees with Olayide (1992); Orisakwe and Agumuo (2004) who opined that Nigerian farmers are small-scale farmers that cultivated small areas of land. The relatively small farm size of the respondents will inevitably lead to subsistence farming which do not encourage commercial farming.

**Crops cultivated** - Table 1 shows that the major crops cultivated by the respondents were cassava (69.4%) and maize (68.8%). Other crops cultivated are yam (36.1%), vegetable (38.2%) and rice (19.4%). This could be as a result of the economic importance of cassava and maize and small farm holdings among farmers.

**Table 1: Distribution of respondents' personal characteristics**

Variable	Frequency	Percentage	Mean
<b>Age</b>			
<21	1	0.7	34±9.6
21-30	44	30.6	
31-40	52	36.1	
41-50	36	25.0	
51-60	8	5.6	

Variable	Frequency	Percentage	Mean
61-70	3	2.1	
<b>Sex</b>			
Male	52	64	
Female	92	36	
<b>Marital status</b>			
Single	10	6.9	
Married	88	61.1	
Divorced	36	25.0	
Widowed	10	6.9	
<b>Educational level</b>			
Non-formal	6	4.2	
Primary	17	11.8	
Secondary	59	41.0	
Tertiary	62	43.1	
<b>Household size</b>			
1-2	32	22.2	
3-4	58	40.3	
>4	54	37.5	
<b>Farm size (arces)</b>			
1-5	124	86.1	
5.5-10	18	12.5	
>10	2	1.4	
<b>Crops cultivated</b>			
Cassava	100	69.4	
Maize	99	68.8	
Yam	52	36.1	
Vegetable	55	38.2	
Rice	28	19.4	

Source: Field survey 2013

**Farmers' awareness of the components of e-wallet for accessing agricultural information**

Results obtained from the study shows that most (79.9%) of the respondents were aware of the use of e-wallet in purchasing farm inputs, 75.0% and 73.6% were aware of its importance in obtaining weather information and market information respectively. Table 2 further showed that a large percentage (71.5%) had high awareness about the components of e-wallet in accessing information. This is not unexpected since the study shows that majority of the farmers had at least primary school certificate which means they can read and write relatively.

Since a large percentage of the population has high level of awareness of e-wallet, they have a

high propensity of adopting the technology. This finding is in consonance with that of Sobalaje and Adigun (2013) who agrees in their findings that awareness of innovation gives a high probability that it would be adopted. Therefore, such innovation will be embraced by the farmers. This will further improve their activities, increase level of production and their livelihood.

**Table 2a: Distribution showing farmers' awareness of the components of e-wallet for accessing agricultural information**

Components of e-wallet	Aware		Not aware	
	Freq.	%	Freq	%
To obtain weather information	106	73.6	38	26.4
To purchase farm input	115	79.9	29	20.1
To obtain market information	108	75.0	36	25.0
To secure/ protect information	64	44.4	80	55.6
Storage of all information	68	47.2	76	52.8
Usage while travelling throughout the world	67	46.5	77	53.5
For carrying range information	87	60.4	57	39.6

**Source: Field survey, 2013**

**Table 2b: Categorization of farmers' level of awareness of the components of e-wallet**

Level	Frequency	Percentage
Low	41	28.5
High	103	71.5

**Source: Field survey, 2013**

**Assessment of farmers' willingness to the use of e-wallet for accessing agricultural information**

Findings from the study as revealed on table 3 shows that a large percentage (63.2%) of the respondents indicated that they are seriously willing to use the e-wallet for the purpose of obtaining market information, 56.9% and 55.6% of the respondents also reported that they are seriously willing to use the e-wallet for the purpose of carrying range of agricultural information and to obtain early warning signals respectively. In addition, 52.8% of the respondents opined that they are seriously willing to use the e-wallet so as to obtain weather information. This implies that farmers are desirous of up to date information that is capable of improving their level of production. This finding is in consonance with that of Nwokocha *et.al*, (2009) which reported that farmers need accurate, complete and user friendly information to enhance agricultural production. Result on Table 3 revealed that most (53.6%) of the farmers willingness to the use the e-wallet in accessing was on the average. This suggests the need for more awareness on the use of e-wallet for accessing agricultural information.

**Table 3a: Distribution showing Assessment of farmers’ willingness to the use of e-wallet for accessing agricultural information**

Willingness components	Not willing		Partially wiling		Seriously wiling	
	Freq	%	Freq	%	Freq	%
For obtaining weather information	50	34.7	18	12.5	76	52.8
For purchase of farm inputs	29	20.1	43	29.9	72	50.0
To obtain market information	22	15.3	31	21.5	91	63.2
Useful to secure and protect information	16	11.1	63	43.8	65	45.1
For storage of all kinds information	13	9.0	73	50.7	13	9.0
It can be used anywhere and while travelling around the world	28	19.4	47	32.6	69	47.9
For the purpose of carrying range of information	13	9.0	49	34.0	82	56.9
For customized or permanent information useful for farmers	22	15.3	58	40.3	64	44.4
For profitability	19	13.2	64	44.4	61	42.4
For obtaining early warning signals for farmers	19	13.2	45	31.3	80	55.6

Source: Field survey, 2013

**Table 3b: Level of farmers’ willingness to the use of e-wallet for accessing agricultural information**

Farmers willingness level	Freq	%
Low	16	11.1
Average	80	53.6
High	48	33.3

Source: Field survey, 2013

**Hypothesis 1**

H<sub>01</sub>: Relationship between personal characteristics (age, sex, marital status, level of education, farm size) and their willingness to the use of e-wallet

The result shows that a significant relationship exist between respondents’ level of education and their willingness to use the e-wallet in accessing agricultural information ( $\chi^2 = 9.27, p=0.03$ ).This

findings corroborates that of Agwu and Anyanwu (1996) who reported that increase in education of farmers positively influence adoption of technologies.

Furthermore Table 4 shows that there is a correlation between respondents’ age (  $r = -0.06, p = 0.03$ ) and their willingness to use the e-wallet in accessing agricultural information. This implies that age has an influence on farmers’ willingness to use the e-wallet. The negative correlation coefficient further suggests that as farmers’ age increases, their willingness to use the e-wallet in accessing agricultural information decreases. The finding is in consonance with Ghazanfer, Sher and Kalid (2012) which reported in a related study a correlation between age and general use of electronic media.

**Table 4: Chi-square analysis and correlation showing the relationship between selected personal characteristics of respondents and their willingness to use the e-wallet in accessing agricultural information**

Variable	$\chi^2$	Df	P	r	P
Marital status	3.632	3	0.304		
Sex	3.237	1	0.072		
Educational qualification	9.273	3	0.026*		
Age				-0.064	0.026
Farm size				0.045	0.595

p<0.05

Source: Field survey, 2013

Relationship between selected personal characteristics of respondents and their willingness to use the e-wallet in accessing agricultural information

**Table 4b: Correlation between selected personal characteristics of respondents and their willingness to use the e-wallet in accessing agricultural information**

Variable	R	P
Age	-0.064	0.026*
Farm size	0.045	0.595

P<0.05

Source: Field survey, 2013

**Hypothesis 2**

H<sub>02</sub>: Test of difference among registered and unregistered farmers' willingness to use e-wallet in accessing agricultural information.

**Table 5: Independent t- test analysis showing the difference among registered and unregistered farmers' willingness to use e- wallet in accessing agricultural information**

Variable	T	P	Mean	Standard error
	5.877	0.000*		0.74098
Registered ( N = 67)			15.73	
Un registered (N = 77)			11.38	

p<0.05

Source: Field survey 2013

**Hypothesis 3**

Factors affecting farmers' use of e-wallet for accessing agricultural information

Linear regression analysis was used in obtaining factors affecting farmers' use of e-wallet for accessing agricultural information. Table 6 shows that farmers' membership in cooperatives groups ( $\beta=0.09$ ) and training on improved agricultural technologies ( $\beta=0.04$ ) affects farmers' use of e-wallet. This implies that farmers participation in cooperative activities and training can enhance acceptance of the e-wallet. This result

The independent t- test analysis in Table 5 shows that there is a significant difference in willingness to use e- wallet in accessing agricultural information among registered and un registered farmers ( t = 5.88, p = 0.00). From the findings on Table 5, it was observed that the registered farmers had higher mean score (15.73) when compared to the unregistered farmers (11.38). It can be deduced from the study that registered farmers are more willing to use the e- wallet in accessing agricultural information when compared to their unregistered counterparts. This finding is in consonance with that of Uche, Nwankwo, Kurt, Peter and Bokelman (2012) which reported that registered farmers are more in contact with extension officers which enhance the utilization agricultural technologies.

is in agreement with the findings of Faturoti, Agwu, Igbokwe and Tekouano (2008); Nielsen (2001) which reported that cooperative participation plays significant roles in utilization of agricultural technology.



**Table 6: Factors affecting farmers' use of e-wallet for accessing agricultural information**

Model	Standard error	Standardized coefficient Beta	T	Sig.
Constant				
Cash crop	0.171	0.119	1.511	0.133
Food crop	0.140	0.020	0.256	0.798
Scale of production	0.000	-0.012	-0.150	0.881
Access to credit	0.094	0.054	0.592	0.555
Membership in farmers group/ association	0.090	0.360	4.005	0.000*
Cosmopolitaness	0.022	0.126	1.523	0.130
Training on improved agricultural technology	0.035	0.005	0.105	0.009*

\*p < 0.05

Source: Field survey, 2013

## CONCLUSION AND RECOMMENDATION

The study concludes that farmers' willingness to use the e-wallet for accessing agricultural information was on the average. Factor determining the farmers' use of the e-wallet for assessing agricultural information was membership in groups and trainings on improved agricultural technology. It is therefore of importance that farmers are encouraged to join registered group to derive optimum benefits from the e-wallet in assessing agricultural information and the need to further train farmers on the use of e-wallet in assessing agricultural information.

## REFERENCES

Adejumo A.A (2011): Gender analysis of stress management strategies among arable crop farmer in Oke-Ogun area of Oyo state. An unpublished MSc thesis in the Department of Agricultural Extension, University of Ibadan, Ibadan

Akinwumi, A. (2012): Nigeria's agricultural transformation agenda" retrieved from [www.emrc.be](http://www.emrc.be) on 13<sup>th</sup> January, 2013

Agwu, A.E and Anyanwu A.C (1996): Socio-cultural and Environmental Constraints in Implementing the NALDA Programme in Southeastern Nigeria. A case study of Abia and Enugu states. *Journal of Agricultural technology and Extension* Vol 1, No2 pp 68-72

Faturoti, B.O., Agwu, A.E., Igbokwe, E.M., and Tekouano, A. (2008): International Institute of Tropical Agriculture (IITA): Plantain and Banana programme: An insight into the contributions of farmer-to-farmer extension paradigm. *African Journal of Biotechnology*, 7(13), 2137-2146.

Food and Agricultural Organization (FAO) 2001: Food insecurity; when people live with hunger and starvation. Retrieved June 24,

- 2001.www.fao.org/docrep/003/y1500e/y1500e01.htm#
- Ghazanfer A.B, Sher and Kalid M.C (2012): Demographic characteristics of farmers and general use of electronic media in the Punjab, Pakistan. *Sarhad Journal of Agriculture*. Vol 28, No 1, 2012
- Jonathan, G. (2012): Presidential Brief (Agricultural Transformation Agenda). “*We will grow Nigeria’s agricultural sector*”.
- Nielsen, F. (2001): Why do farmers innovate and why don’t they innovate more? Insights from a study in East Africa. In C. Reijnders and A. Waters-Bayer (Eds.), *Farmer innovation in Africa* (pp. 92-103). London: Earthscan Publications Ltd.
- Nkwocha, V. I., Ibeawuchi, I. I.; Chukwueke, N. O., Azubuike, N. O. and Nwkwach, G. A. (2009): Overview of the Impact of Information and Communication Technology on Agricultural Development in Imo State, Nigeria. Proceeding of the 43rd Annual Conference of the Agricultural Society of Nigeria held in Abuja, from 15-20 August, 2009, Nigeria, p.714.
- Obinne, C. P. O. (1991): Adoption of Improved Cassava Production Technologies by small scale farmers in Bendel state. *J. Agric. Sci. Technol.*1(1):12-15
- Okoye, A.A (1999): Factors affecting adoption process by farmers in selected Local Governments Areas of Anambra State. *Journal of Agricultural Sociology of Nigeria*, vol 7(2), Pp 124-127
- Olayide S.O(1992): A Quantitative Analysis of Food Requirements Supplies and demands in Nigeria 1968-1985. Federal Department of Agriculture.
- Opara U.N (2010): Personal and Socio-Economic Determinants of Agricultural information Use by Farmers in Agricultural Development Programmes (ADP) Zones of Imo State, Nigeria. *Library Philosophy and Practice* Vol 5 No 1 pp 2. ISSN 1522-0222
- Orisakwe L and Agumuo F. (2004): Adoption of Improved Agro Forestry Technology among Contact Farmers in Imo state Nigeria. *Asia Journal of Agriculture and rural development*. Vol 2 No.1 Pp1-9
- Sobalaje, A.J and Adigun, G.O (2013): Use of Information and Communication Technologies by Yam Farmers in Boluwaduro Local Government Area of Osun state, Nigeria. *Library Philosophy and Practice* (e-journal) ISSN 1522-0222
- Uche, M. Nwankwo, Kurt, J. Peters and Bokelman W. (2012): Can cooperative membership and participation affect adoption decision? Issues for sustainable biotechnology dissemination. *The Journal of Agrotechnology Management and Economics*. Vol.12 No. 3and4 article 18