



EFFECTIVENESS OF USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS) BY EXTENSION AGENTS AND ARABLE CROP FARMERS IN IDO LOAL GOVERNMENT AREA, OYO STATE, NIGERIA.

OLAYEMI, O. O., ODEYALE, O. C., OGUNSOLA, J. O., TUNDE-FRANCIS, A. A.
OLAWALE, O. O. AND OGUNLANA, E. A

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ABSTRACT

The study was undertaken to ascertain effectiveness of use of ICTs by extension agents and arable crop farmers in Ido local government area Oyo State. Multiple stage sampling procedure was used to select 105 respondents for the study. Data were collected from the respondents through the use of structured questionnaire. Descriptive statistics such as; mean, frequency table, and percentage were used to analysed data while inferential statistical tools such as Chi-square and Pearson Product Moment correlation (PPMC) were used to tested the hypotheses of the study. The result of the study showed that majority of the respondents were in the age bracket of 31-40 years, which could be categorized as adults, and more of them were males, while majority of them were married. Result revealed the level of ICTs used by extension agents for arable crop farmers were radio (97.1%), mobile phone (92.4%) and internet (81.9%). The result further shows major constraints militating the effectiveness of use of ICTs were network problem in the study area. There is no significant relationship between constraint and level of ICTs used by the arable crops farmer in the study area. It is therefore recommended that government should ensure that farmers should have access to and use ICTs by putting policies in place to ensure all rural area have access to ICTs tools ,also awareness on the use of ICTs should be intensify among arable crop farmers.

KEYWORDS: Effectiveness, use, ICTs, Extension agents, Arable crop farmers.

INTRODUCTION

It is a universal truth that information is power and that access to the right information at the right time holds the key for the successful development of any sector in an economy. As a consequence, Information and Communication Technology (ICT) has become a global tool used by individuals, companies, governments and inter-governmental organizations for personal or official activities (Kamba, 2013).

Nowadays, the right to information at the right time to the right person in a right form becomes as fundamental as the right to food, to shelter and to employment with ICTs as technologies used for the widespread transfer and sharing of information Khondokar and Debashis (2015).

ICTs include; computer, internet, phone, television, radio, and other offline and online communication devices. It is a set of activities that facilitate the capturing, storage, processing, transmission and display of information by electronic devices (Olowokere, 2006). The use of ICT by extension agents for arable crop farmers just like in the other fields of knowledge, has been gaining popularity in Africa and Nigeria in particular.

The important task of agricultural extension agents is to facilitate exchange and sharing of agricultural information knowledge and skills. The transfer of agricultural information from research centers to farmers is very important as it helps farmers learn innovations which improve agricultural productivity (Mabe and Oladele, 2012). Therefore, the need of farmers for

Olayemi, O. O., Federal College of Forestry, Ibadan, Oyo State. P.M.B.5087
Odeyale, O. C., Federal College of Forestry, Ibadan, Oyo State. P.M.B.5087
Ogunsola, J. O., Federal College of Forestry, Ibadan, Oyo State. P.M.B.5087
Tunde-Francis, A. A., Federal College of Forestry, Ibadan, Oyo State. P.M.B.5087
Olawale, O. O., Forestry Research Institute of Nigeria, Ibadan, Oyo State. P.M.B.5054
Ogunlana, E. A., Federal College of Forestry, Ibadan, Oyo State. P.M.B.5087

relevant and current information on new agricultural practices is a vital issue that needs to be considered by every nation especially developing countries like Nigeria. However, most African countries have not devoted adequate attention to providing their citizens, including farmers, with information which can improve access to finance, land and extension advisory services and the benefits that come along with these services, especially in rural areas where 70 - 80% of the population lives (Mabe and Oladele, 2012). It is against this background that the study is investigating effectiveness of use of ICTs by extension agents and arable crop farmers in Ido local government area Oyo State, Nigeria.

The specific objectives are to:

- Describe the socio economic characteristics of the arable crop farmers in the study area
- Determine the level of ICTs effective used by extension agents to arable crop farmers
- Describe the constraints militating the effectiveness of use ICTs by extension agents and arable crop farmers in the study area

Hypothesis of the study

The hypothesis stated in null form was tested from the specific objectives:

H_0 : There is no significant relationship between constraints hindering effectiveness and effectiveness of ICTs used in the study area.

MATERIALS AND METHODS

Ido is a local government in Oyo state. Its headquarters is Ido, and has an area of 986km² and a total population of 103,261 based on 2006 National Population Census. It shares boundaries with Oluyole, Ibarapa East, Akinyele, Ibadan South-West and Ibadan North-West Local Governments in Oyo State and Odeda Local Government in Ogun State The area has also gained tremendously from industrialization process with the presence of industries such as the Nigerian Wire and Cable Ltd, Nigerian Mining Corporation and the NNPC among others. The Local Government area has 75 primary schools, 33 secondary schools- made up of 18 junior secondary schools and 15 senior secondary schools. Farming is a major occupation of the people of Ido local government with crops such as cocoa, Oil palm, maize, rice, and kola nut grown in fairly large quantities within the area. In Ido, the wet season is oppressive and overcast, the dry season is muggy and partly cloudy, and it is hot year round. Over the course of the year, the temperature typically varies from 69°F to 92°F and is rarely below 63°F for above to 96°F. The rainy period of the year lasts for 9.8 months, from February 3 to November 28, with a sliding 31-day rainfall of at least 0.5 inches. The month with the most rain in Ido is September, with an average rainfall of 9.2 inches. Data were collected using a well structured questionnaire from arable crop farmers in the study area. Multi-stage sampling techniques were used to select arable crop farmers. Firstly, Identification of wards

in Ido local government, Secondly, The second stage is the simple random selection of wards. Villages were selected from each ward based on the size of the villages with adequate or frequent of arable crop farmers. Thirdly, Simple random sampling techniques were used to select arable crop farmers in each ward which gives a total of one hundred and five (105) arable crop farmers used as sample size. The data were analyzed with the use of descriptive statistics such as frequency distribution and percentage and inferential statistics such as Pearson product moment correlation (PPMC) to test the hypothesis.

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

Result of the analysis in table 1 indicated that 40.01% of the respondents with the age range of 31- 40 years are more involved in arable crop farming while 23.8% are within the range 41-50 years follow by 17.1%with in the range 21-30, 12.4% with the range of above 50 years while 6.7% is the least range of below 20 years. This implies that Adult are involved in arable crop farming in the study area. Result further showed that there were more male in arable crop farming than the female because 79.0% are male while 21.01% were females, this implies that majority of the people who engage in arable were male. This agree with the finding of Oduwale (1995) that reported male are more involved in farming. The result also shows that married respondents have the highest value of 70.5% while the single have the value 12.4%, followed by engaged 11.4% while the divorced were the least 5.7% this agree with the finding of Ayeni (2008) that married men are more involved in arable crop farming. The result also indicated that 45.7% of the respondents with the house size ranges of 5-10 are more involved in arable crop farming while 27.6% are within the range less than 5 followed by 24.8% within the range other specify and the least 1.9%range 11 and above The result also indicated that 37.1% of the respondents were Islam, 35.2% are Christianity, 26.7% are traditional, while 1.0% was other specify. The result shown in the table also indicate the experience of the respondent in Arable crop farming 37.10% had 16 and above, 28.6% had 11.1% years followed by 25.7% of 6-10 years and below 5years had 8.6%. Result also shows that tertiary education had 40.0%, 27.6% had secondary education, while 16.7% had no formal education, 12.4% had primary education and 3.8% adult education. It agrees with jimoh (2007) and Ayeni (2008) finding that more of the arable crop farmer are post graduate, It could be inferred that farmer in the study area are literate who could read and write, literacy could affect ones use of ICT by helping them to perform daily task. The finding also indicated that other occupation of the arable crop farmers with 36.2% are trading, 28.6% are others 18.1% are artisan while 17.1% are civil servant and the result also showed the mode of land acquisition of respondents in the study area with 27.6% were rented 26.7% were purchased and 24.81% were inherited while 21.1% were gifted.

Table 1: Socio-economic characteristics of respondents

Variables	Frequency	Percentage	Mean	Standard Deviation
Age (years)				
Below 20	7	6.7	33.57	9.75
21-30	18	17.1		
31-40	42	40.0		
41-50	25	23.8		
Above 50	13	12.4		
Gender				
Male	83	79.0		
Female	22	21.0		
Marital Status				
Single	13	12.4		
Married	74	70.5		
Engaged	12	11.4		
Divorced	6	5.7		
Educational Status				
No Formal Education	17	16.7		
Primary Education	13	12.4		
Secondary Education	29	27.6		
Tertiary Education	42	40.0		
Adult Education	4	3.8		
Household Size				
Less than 5	29	27.6	6.09	2.08
5 -10	48	45.7		
11 And Above	2	1.9		
Other Specify	26	24.8		
Religion				
Christianity	37	35.2		
Islam	39	37.1		
Traditional	28	26.7		
Other Specify	1	1.0		
Farming Experience (years)				
Below 5	9	8.6	9.0	2.87
6 -10	27	25.7		
11-15	30	28.6		
16 And Above	39	37.1		
Other Occupation				
Civil Servant	18	17.1		
Trading	38	36.2		
Artisan	19	18.1		
Others	30	28.6		
Land Acquisition				
Purchase	28	26.7		
Lease/Rent	29	27.6		
Gift	22	21.0		
Inheritance	26	24.8		
Total	105	100		

Source: Field Survey, 2021

Respondents' Level of ICTs effectively used by extension agents

Result in table 2, revealed that extension agents used the following ICTs radio (97.1%), mobile phone (92.4%) are highly, internet (81.9%) are highly used, Facebook (79.0%), WhatsApp (78.1%), Wechat (57.1%), this agree with the finding of Helen and Awen (2020) that confirmed mobile phone as the easiest and important medium for reaching, improving and communicating with the rural population of the developing countries, instagram (5.7%) and BBM and Telegram (1.9%) and twitter (1.01%) are used by the extension agent to disseminate information to arable crop farmers in the study area. Result further revealed that (56.2%)

instagram, (54.31%) twitter and we chat (29.5%) Telegram (26.7%), BBM (20.0%) internet (7.6%) Eskimi and WhatsApp (5.7%), mobile phone (4.8%) facebook 2go (3.8%) radio(2.91%) are mild used by the extension agent to disseminate information to the respondents in the study area.

The result further shows that the following ICTs are not in used by extension agents to passed information to arable crop farmers were 2go (96.2%) eskimi (94.3%), BBM(78.11%), Telegram (71.4%) wechat (64.8%), Twitter (44.8%) instagram (38.1%) facebook(17.1%) whatapp(16.2%) internet(Email) (105.0%) and mobile phone(2.9%) in study area.

Table 2 Level of ICTs effectively used by extension agents

Level of ICTs	Highly used	Mild used	Not used	Mean	Rank
Whatsapp	82(78.1)	6(5.7)	17(16.2)	1.62	5 th
Facebook	83(79.0)	4(3.8)	18(17.1)	1.62	5 th
Instagram	6(5.7)	59(56.2)	40(38.1)	0.68	4 th
Twitter	1(1.0)	57(54.3)	47(44.8)	0.56	6 th
BBM	2(1.9)	21(20.0)	82(78.1)	0.24	9 th
Telegram	2(1.9)	28(26.7)	75(71.4)	0.30	8 th
2go	0 (0.0)	4(3.8)	101(96.2)	0.04	11 th
Eskimi	0 (0.0)	6(5.7)	99(94.3)	0.06	10 th
Wechat	6(5.7)	31(29.5)	68(64.8)	0.41	7 th
Mobilephone	97(92.4)	6(4.8)	3(2.9)	1.89	2 nd
Radio	102(97.1)	3(2.9)	0 (0.0)	1.97	1 st
Internet (Email)	86(81.9)	8(7.6)	11(10.5)	1.71	3 rd

Source: Field Survey, 2021

Constraints militating the effectiveness of use of ICTs

Results of analysis in **table three** revealed the constraints to the use of ICTs by extension agents for arable crop farmers, the severe constraints were Network problem (87.6%), Fluctuation of electricity (80.0%), Existing government farmers access and use of ICT s not encouraging (80.0%), Poor inter connectivity in the rural area that hinder the access and use of ICT (79.0%), Lack of farmer knowledge about ICT application(78.1%),low level of awareness by farmer in the use of some ICTs tools by the farmer (76.2%),Lack of farmers motivation toward access and for the accessibility usage of ICTs tool(73.3%),low computer literacy level of the farmers could hinder farmers' usage of ICTs(68.6%), Insufficient availability of ICT service provider in rural area for farmers accessibility (67.6%), High cost of buying the ICT related tools (61.9%), This is in support of the finding of Jeremmiah *et al* (2018). Also result revealed the mild constraint to the use of ICT tools by the farmers were High cost of buying the ICT related tools (37.1%),

Insufficient availability of ICT service providers in rural area for farmers accessibility (32.4%), low computer literacy level of the farmers could hinder farmers usage of ICT (31.4%), Lack of farmers motivation toward access and for the accessibility usage of ICTs tool (26.7%), low level of awareness by farmer in the use of some ICTs tools by the farmer (22.9%), Lack of farmer knowledge about ICT application (21.9%), poor inter connectivity in the rural area that hinder the access and use of ICT (20.0%), Existing government farmers access and use of ICT s not encouraging (19.0%), inadequate of electricity (17.1%), Network problem(11.4%),

Result further revealed that few of the respondents had not a constraints to the use of ICTs by extension agents for arable crop farmer as Fluctuation of Electricity (2.9%), Network problem (1.0%), low level of awareness by farmer in the use of some ICTs tools (1.0%), poor inter connectivity in the rural area that hinder the access and use of ICT (1.0%), Existing government farmers access and use of ICT s not encouraging (1.0%) in the study area.

Table 3: Constraints militating the effectiveness of use of ICTs

Constraints	Severe constraints	Mild constraints	Not constraints	a	Mean	Rank
Fluctuation of Electricity	84(80.0)	18(17.1)	3(2.9)		1.77	5 th
Network Problem	92(87.6)	12(11.4)	1(1.0)		1.87	1 st
Low Level of Awareness by the farmers in the use of some ICTs tools.	80(76.2)	24(22.9)	1(1.0)		1.75	6 th
Lack of Farmers Knowledge about ICT Application	82(78.1)	23(21.9)	0(0.0)		1.78	4 th
Poor interconnectivity in the rural area that hinder the access and use of ICT	83(79.0)	21(20.0)	1(1.0)		1.78	4 th
Lack of Farmers motivation towards access and usage of ICTs tools	77(73.3)	28(26.7)	0(0.0)		1.73	7 th
Existing government policies and regulation of farmers access and use of ICT is not encouraging	84(80.0)	20(19.0)	1(1.0)		1.79	3 rd
Insufficient availability of ICTs service providers in the rural area for farmers accessibility	71(67.6)	34(32.4)	0(0.0)		1.68	9 th
Low computer literacy level of the farmers could hinder farmers usage of ICT	72(68.6)	33(31.4)	0(0.0)		1.69	8 th
High cost of buying the ICTs related Tool	65(61.9)	39(37.1)	0(0.0)		1.81	2 nd

Source: Field Survey, 2021

PPMC showing relationship between constraints and level of ICTs used

From the table 4 above there is no significant relationship between constraint and level of ICTs used by the arable crops farmer [$r = -0.035, p = 0.724$] in

which the null hypothesis is accepted and alternative hypothesis is rejected this implies that there is no correlation between the constraints and the level of ICTs used among arable crop

Table 4: PPMC showing relationship between constraints and level of ICTs used

Variable	R-Value	P-Value	Decision
Constraint And level of ICTS used	-0.035	0.724	NS

CONCLUSION

The study showed that farmers in the study area were literates, had fairly large household size, .Higher proportion of the respondents use ICTs like mobile phone, Use internet (Email) and radio regularly. This was as a result of the importance of these ICT tools. The major constraint to the use of ICTs was network problem.

RECOMMENDATIONS

Based on the empirical findings of this study, the following recommendations are made;

1. Information exchange on agricultural related activities should be encouraged through the use ICTs so as to strengthening the effectiveness of use of ICTs by extension agents among arable crop farmers.
2. Government should also ensure that farmers should have access to and use ICTs by putting policies in place to ensure all rural area have access to ICTs tools.

3. Also, awareness on the use of ICTs should be intensifying with both Extension agents and Arable crop farmers as a means of disseminate information.

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