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## ARABLE CROP FARMERS' PERCEPTION OF BENEFITS OF ICTS USE BY EXTENSION AGENTS IN IDO LOAL GOVERNMENT AREA, OYO STATE, NIGERIA

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### ABSTRACT

The study investigated Arable crop farmers' perception of benefits of ICTs use by Extension agents in Ido Local Government Area, Oyo State, Nigeria. Multiple stage sampling procedure was used to select 105 respondents for the study. Data were collected through the use of structure questionnaire from the respondents and descriptive statistics such as mean, frequency tables, and percentages were used to describe data while inferential statistical tools such as Chi-square, PPMC (Pearson Product Moment Correlation) were used to analyze the hypotheses of the study. The results showed that majority of the respondents were in the age bracket of 31-40 years, and more of them were males, with majority of them were married. The major sources of ICTs available to the respondents were radio, mobile phone and internet. Results revealed perceived benefit of ICTs by extension agents among respondents as majority strongly agreed perceived benefits were farmers can get remunerative price to their produce through ICT based market intelligence, weather forecasting through ICTs assist farmers in timely decision, using ICT to communicate to the farmers by the extension agent could affect the face to face interaction presently enjoy by the farmers, existing infrastructure of ICT is not enough to meet the needs of the farming community in rural areas where Farmers reside. There is significant relationship between socio-economic characteristic of the respondents and perceived benefits of ICTs use which implies that marital status, educational level, religion, other occupation and land acquisition were significant to the perceived benefits of ICTs use in the study area, also there is significant relationship between sources of ICTs and perceived benefits of ICTs use. It is therefore recommended that information exchange on agricultural related activities should be encouraged through the use ICTs so as to strengthening the perceived benefits of use of ICTs by extension agents among arable crop farmers.

### KEY WORDS

Perception, benefits, ICT, extension agents, arable crop farmers.

Agricultural production in Nigeria has been largely dependent on the concerted efforts of arable crop farmers who are mainly in the rural areas. Ogungbile and Olukosi (2001). Arable crop farmers face a number of challenges both in terms of production and in marketing their surplus produce. Generally, the focus of agricultural policies are to guide farmers to optimize production without damaging the natural resources they depend on and secondly to assist farmers to access markets.

Traditional extension models is the number of farmers per extension officers' they cannot visit all the arable crop farmers effectively and in a timely manner. The ratio in Nigeria is currently 1 extension worker: 3000 farmers (Fawole and Olajide 2012, Ogbe 2016). This ratio of extension worker to farmers is grossly inadequate and highly disturbing considering the World Bank's standard which is 1:500 (World Bank 2010). Where extension workers act as bridges between researchers and farmers, for example, in traditional T&V extension the ratio should be 1:200 farmers within a cluster so that they can have a meaningful impact by effectively teaching and monitoring the farmers' progress (Ogundele 2016).

ICT is an acronym for Information Communication Technology, which can be broadly interpreted as technologies that facilitate communication and the processing and translation



of information by electronic means. This definition encompasses the full range of ICT from radio and television to telephones (fixed and mobile). The increasing use of ICTs in agricultural extension service delivery would narrow the gender disparities in terms of access to agricultural information. Information technology use refers to the extent to which technologies are utilized for communication purposes. It also explains the level to which the potentialities of the several studies carried out in the past decades to identify the major sources of Agricultural information to farmers in rural Nigeria revealed that farmers obtained such information mainly from Agricultural Extension Agents, fellow farmers, friends and relatives which usually involved face to face, interpersonal communication contacts. (Iroka, 2011). The use of ICT potentially allows extension workers to contact more farmers with appropriate and up-to-date information in a timely manner (Asenso-Okyere and Ayalew-Mekonnen, 2012). stressed that ICT, particularly radio, can enable extension worker to reach about half a million smallholder farmers simultaneously in their local language with knowledge and information which enables farmers, strengthens them, assists smallholders in problem solving and allows farmers to make informed decisions (Oladele, 2015). It is against this background that the study is investigating Arable Crop Farmers' Perception of benefits of ICTs use by Extension Agents in Ido Loal Government Area, Oyo State, Nigeria.

The specific objectives are to:

- Describe the socio economic characteristics of the respondents in the study area;
- Identify the source of ICTs available to extension agents in the study area;
- Identify the perceived benefits of ICTs by extension agents among arable crop farmers in the study area.

The hypothesis stated in null form was tested:

- H<sub>0</sub>: there is no significant relationship between socio economic characteristics of the respondents and perceived benefits of ICTs use;
- H<sub>02</sub> There is no significant relationship between Source of ICTs use and perceived benefits of ICTs used in the study area.

## **MATERIALS AND METHODS OF RESEARCH**

Ido is a local government in Oyo state. Its headquarters is Ido, and has an area of 986km<sup>2</sup> 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 kolanut 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.

## **RESULTS AND DISCUSSION**

Result of the analysis in table 1 indicated that most of respondents had 40.01% with the age ranges of 31- 40 years, followed by 23.8% with range 41-50 years and 17.1% with range 21-30, also 12.4% with the range of above 50 years while 6.7% is the least age range of below 20 years. This implies that Adult are involved in arable crop farming in the study area. Result further showed that majority 79.0% of the respondents were male while 21.01% were female, this implies that majority of the people who engage in arable were male. This agree with the finding of Odewale (1995) that reported male are more involved in farming.



The Result also revealed 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% in the study area. This is in line 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 26.7% within the range 11 and above. Furthermore, result also revealed that 37.1% of the respondents were Islam, 35.2% were Christianity, 26.7% were traditional, while 1.0% was other specify. Also indicate the Farming experience of the respondents in Arable crop farming with 37.10% had 16 and above, 28.6% had 11-15 years followed by 25.7% of 6-10 years and below 5 years had 8.6%.

Table 1 – Socio-economic characteristics of respondents

Variables	Frequency	Percentage
Age (years)		
Below 20	7	6.7
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 Former Education	17	16.7
Primary Education	13	12.4
Secondary Education	29	27.6
Tertiary Education	42	40.0
Adult Education	4	3.8
House Size		
Less than 5	29	27.6
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
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.

Result revealed the education background of the respondents as majority 40.0% had tertiary education, 27.6% had secondary education, while 16.7% had no formal education, and 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 had educational background, It could be inferred that farmer in the study area are literate who could read and write. The result also Indicated that other occupation of the respondents with most 36.2% were trading,



28.6% were 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.

Result of analysis in table 2 revealed that arable crop farmers used the following ICTs radio (99.0%), mobile phone (97.21%), internet (82.9%), Whatsapp (82.9), Facebook\* (\*banned on the territory of the Russian Federation for extremist activities) 82.9%, Instagram\* (\*banned on the territory of the Russian Federation for extremist activities) 61.0%, Twitter 54.3%, Telegram 28.6%, BBM 15.21%, radio and mobile phone are some of the most ICTs that are available in almost all the house of farmers. The findings in support with Ezeh (2013), Rebekka and Saravanan (2015) and Toluwase Apata (2017) that farmers had access and used mobile phone, radio, and internet. Farmers used mobile phone to communicate with family members' friend fellow farmers and extension agents.

Table 2 – Sources of ICTs Available To the Respondents

Sources of ICTs	Available	Not available
Whatsapp	87(82.9)	18(17.1)
Facebook*	87(82.9)	18(17.1)
Instagram*	64(61.0)	41(39.0)
Twitter	57(54.3)	48(45.7)
BBM	16(15.2)	89(84.8)
Telegram	30(28.6)	75(71.4)
2go	3(2.9)	102(97.1)
Eskimi	6(5.7)	99(94.3)
Wechat	36(34.3)	69(65.7)
Mobile phone	102(97.2)	3(2.9)
Radio	104(99.0)	1(1.0)
Internet	87(82.9)	17(16.2)

Source: Field Survey, 2021.

\* Banned on the territory of the Russian Federation for extremist activities.

Result of the Analysis in Table 3 revealed the perceived benefit of ICTs by extension agents among respondents were majorly strongly agreed perceived benefits: ICTs cannot deliver personalize information (56.2%), farmers can get remunerative price to their produce through ICT based market intelligence (54.3%), weather forecasting through ICTs assist farmers in timely decision (53.5%), using ICT to communicate to the farmers by the extension agent could affect the face to face interaction presently enjoy by the farmers (53.3%), existing infrastructure of ICT is not enough to meet the needs of the farming community in rural areas where Farmers reside (50.5%), ICTs cannot meet location specific needs of the farmer (50.5%), ICT tools cannot totally solve agricultural problem (49.5%), ICT is a valuable tools, but it will never influence farmers own decision making (48.6%), ICTs can provide possible solution to the present day agricultural situation in agricultural information dissemination (47.6%), illiteracy will not deter farmers in availing ICT service (44.8%). This study is in support of the finding of Khondoka (2015) and Raghuprasad et al (2017) who reported that farmer had highly perceived benefits toward the ICT.

Also Result revealed the agreed perceived benefit of ICTs by extension agents among the respondents that majorly illiteracy will not deter farmers in availing ICT service (54.5%), ICTs cannot meet location specific needs of the farmer (48.6%), existing infrastructure of ICT is not enough to meet the needs of the farming community in rural areas where Farmers reside (48.6%), ICTs is a valuable tools, but it will never influence farmers own decision making(48.6%), ICTs tools cannot totally solve agricultural problem (48.6%), weather forecasting through ICTs assist farmers in timely decision (46.7%), using ICT to communicate to the farmers by the extension agent could affect the face to face interaction presently enjoy by the farmers (45.7%), farmers can get remunerative price to their produce through ICT based market intelligence(43.8%), ICTs cannot deliver personalize information (41.9%), ICTs can provide possible solution to the present day agricultural situation in agricultural information dissemination (40.0%).



Result further revealed the disagreed perceived benefit of ICTs by extension agents among the respondents that ICTs can provide possible solution to the present day agricultural situation in agricultural information dissemination (7.6%), ICTs is a valuable tools, but it will never influence farmers own decision making (2.9%), %, ICTs tools cannot totally solve agricultural problem (1.9%), ICTs cannot deliver personalize information (1.9%), farmers can get remunerative price to their produce through ICT based market intelligence (1.9%), existing infrastructure of ICT is not enough to meet the needs of the farming community in rural areas where Farmers reside(1.0%), using ICT to communicate to the farmers by the extension agent could affect the face to face interaction presently enjoy by the farmers (1.0%), illiteracy will not deter farmers in availing ICT service (1.0%), ICTs cannot meet location specific needs of the farmer (1.0%),

Result revealed the strongly disagreed perceived benefit of ICTs by extension agents among the respondents that ICTs can provide possible solution to the present day agricultural situation in agricultural information dissemination (4.8%), and ICTs cannot deliver personalize information (3.4%).

Table 3 – Perceived benefit of ICTs use by extension agents among respondents in the study area

Perceived benefit	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
ICTs can provide possible solutions to the present day agricultural situation in agricultural information dissemination.	50(47.6)	42(40.0)	8(7.6)	5(4.8)
ICTs cannot meet location specific needs of the farmer	53(50.5)	51(48.6)	1(1.0)	0 (0.0)
Illiteracy will not deter farmers in availing ICT services	47(44.8)	57(54.5)	1(1.0)	0 (0.0)
Farmers can get remunerative prices to their Produce through ICT based market intelligence	57(54.3)	46(43.8)	2(1.9)	0 (0.0)
Existing infrastructure of ICTs is not enough to meet the needs of the farming community In rural areas where famers reside	53(50.5)	51(48.6)	1(1.0)	0 (0.0)
Using ICT to communicate to the farmers by the Extension agent could affect the face to face interaction presently enjoy the farmers	56(53.3)	48(45.7)	1(1.0)	0 (0.0)
ICT is a valuable tool, but it will never influence farmer own decision making	51(48.6)	51(48.6)	3(2.9)	0 (0.0)
ICT tools cannot totally solve agricultural problems	52(49.5)	51(48.6)	2(1.9)	0 (0.0)
Weather forecasting through ICTs assists farmer in timely decision	56(53.5)	49(46.7)	0 (0.0)	0 (0.0)
ICTs cannot deliver personalized information	59(56.2)	44(41.9)	2(1.9)	5(3.4)

Source: Field Survey, 2021.

Table 4 – Chi-square showing relationship between socio economic characteristics of respondents and perceived benefits of ICTs use

Variable	Chi-Square	P-Value	Decision
Age	17.104	0.146	NS
Gender	2.388	0.496	NS
Marital Status	19.250	0.023	S
Education	63.657	0.000	S
Household Size	16.056	0.066	S
Religion	38.715	0.000	S
Farming Experience	10.149	0.339	NS
Other Occupation	23.555	0.005	S
Land Acquisition	30.093	0.000	S

Note: Significant < 0.05, Not-Significant > 0.05.

Table 4 – PPMC showing relationship between Sources of ICTs and perceived benefits of ICTs used

Variable	R-Value	P-Value	Decision
Sources of ICT Use And perceived benefits of ICTS used	0.739	0.000	S

This hypothesis is subjected to chi-square and the result was presented in the table 4 above. The result shows that marital status, educational level, religion, other occupation, and land acquisition has significant relationship with the respondent at 0.05 level of significant, this implies that that marital status, educational level, religion, other occupation and land acquisition were significant to the perceived benefits of ICTs use in the study area.



The implication of these is that marital status, educational level, religion, other occupational and land acquisitions are major economic status that enhances the use of ICTs in the study area.

From the table 4 above revealed there is significant relationship between sources of ICTs and perceived benefits of ICTs used [ $r=0.739, p=0.000$ ] in which the null hypothesis is accepted and the alternative hypothesis is rejected, this implies that there is correlation between sources of ICTs and perceived benefits of ICTs used among arable crop farmer

### CONCLUSION

The empirical finding of the study revealed that the majority of the respondents had their age bracket of 31-40 years, and more of them were males, and also married. The major sources of ICTs available to the respondents were radio, mobile phone and internet. Results revealed perceived benefit of ICTs by extension agents among respondents as majority strongly agreed perceived benefits were farmers can get remunerative price to their produce through ICT based market intelligence, weather forecasting through ICTs assist farmers in timely decision, using ICT to communicate to the farmers by the extension agent could affect the face to face interaction presently enjoy by the farmers, existing infrastructure of ICT is not enough to meet the needs of the farming community in rural areas where Farmers reside. There is significant relationship between socio-economic characteristic of the respondents and perceived benefits of ICTs use which implies that marital status, educational level, religion, other occupation and land acquisition were significant to the perceived benefits of ICTs use in the study area, also there is significant relationship between sources of ICTs and perceived benefits of ICTs use. It is therefore recommended that information exchange on agricultural related activities should be encouraged through the use ICTs so as to strengthening the perceived benefits of use of ICTs by extension agents among arable crop farmers.

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