



# PERCEPTION OF AWARENESS OF INFORMATION AND COMMUNICATION TECHNOLOGIES AMONG YAM FARMERS IN IKOM AGRICULTURAL ZONE, CROSS RIVER STATE, NIGERIA.

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## ABSTRACT

The main purpose of this study was to analyze the awareness of information and communication technologies (ICTs) among yam farmers in Ikom Agricultural Zone, Cross River State, Nigeria. The specific objectives were to; identify the types of ICTs available to yam farmers, ascertain the level of awareness of ICTs among yam farmers and ascertain the effects of ICTs on yam production in the study area. Questionnaires were used to obtain data from respondents for the study. Data were analyzed using descriptive statistics such as frequency, percentage, mean and ranks. Result of types of ICTs available among the yam farmers showed that radio was  $\bar{X}=3.70$ , Mobile phones were  $\bar{X}=3.50$  while television had  $\bar{X}=3.11$  and were the most available ICTs accessed by yam farmers in the study area. Findings on the level of awareness indicated that Radio ( $\bar{X}=1.78$ ) ranked 1<sup>st</sup>, television ( $\bar{X}=1.70$ ) ranked 2<sup>nd</sup> while, mobile phone ( $\bar{X}=1.66$ ) ranked 3<sup>rd</sup> and were the ICTs that the farmers had greater awareness. Results on the perceived effects of ICTs on yam production revealed that ICTs reduce cost of interaction among yam farmers, enhanced decision-making among farmers and also strengthen partnership with research and extension. However, serious constraints to the use of ICT facilities by farmers were identified such as; poor finance, erratic power supply and cost of use of ICT tools. The result of this study showed that yam farmers in Ikom Agricultural Zone utilized conventional ICTs tools more than contemporary tools in yam production. The study therefore concluded that, there is a commendable level of awareness of information and communication technologies among yam farmers in Ikom Agricultural Zone of Cross River State, Nigeria.

**KEYWORDS:** Perception, Awareness, Information and Communication Technologies, Yam farmers.

## INTRODUCTION

Nigerian rural farmers lack improved technologies because of lack of awareness of information and communication technologies for agricultural production. Small scale farmers who dominate the landscape of developing countries need to improve on farming activities through acquisition of adequate and accurate information. Inability of farmers to access vital messages with no adequate feedback has been a great challenge in agricultural production in Ikom Agricultural environment (Effiong, 2012a; Effiong, Effiong and Udo, 2015).

Agricultural Extension Services in the area still rely on the use of interpersonal channels of communication, farmers still depend on traditional tools for the delivery of agricultural information. This situation has significantly limited access to improved agricultural technology that would have increased productivity (Effiong, 2013a).

Also, in marketing, farmers do not have choice in selling their products, they can only sell farm produce through traders who travel between villages and markets or transport to nearest sales points. This is caused by communities remoteness and poor communication with markets; (King, 2012; Effiong and Aboh, 2018). Traders may take advantage of farmers' ignorance of market prices by offering low prices due to lack of information on current price regime, which limits bargaining powers. Well informed farmers manage to bargain higher farm gate price on farm products compared to uniformed farmers in rural farm settlements in Abia State, Nigeria (Effiong, Ijioma and Effiong, 2016); Obinne (1994; Effiong, 2012b; Effiong and Asikong, 2013). Despite many years of work on technology generated by state and Federal Government of Nigeria, Obiokoro (2005); Effiong (2013); Effiong, Ijioma and Effiong (2016) opined that there seems to exist limited awareness of communication advancement among yam farmers in

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Nigeria in particular and Ikom in general. There are evidences that farmers are still lagging behind in information on yam farming techniques, improved yam varieties, access to credits, incidences of pests and diseases, and poor quality farm inputs. If information on yam production techniques are adequately acquired by farmers there will be increase in production which may translate into increased income and improve their standards of living (Effiong, 2013b; Okwusi and Aboh, 2007). In other words, sustainable yam production cannot be achieved without adequate application of ICTs. It is in the light of the above, that this study was carried out to access the perception of awareness of ICTs among yam farmers in Ikom agricultural zone, Cross River State, Nigeria. According to Abumere and Soyibo (2001); Effiong and Asikong (2013); Aboh and Effiong (2019); Effiong and Aboh (2019), information has gained greater recognition in the development of Agricultural production in Ikom, Cross River State, in particular and Nigeria in general.

King (2012); Effiong and Aboh (2019); Effiong (2013a), stated that information is a necessary resource with which problems are solved. ICT awareness has provided medium for rural dwellers in several African countries to adequately have access to agricultural information despite the persistent problems of access, connectivity, and costs. Omotayo (2005) and Effiong (2013b) observed that agricultural extension depends largely on information exchange between research, extension and farmers. Frontline extension workers should be well-positioned to make use of ICT to access expert knowledge on yam production, with regards to awareness of information technologies. Effiong (2013b) stated that extension workers were more aware of conventional ICTs than contemporary ICTs in agricultural production in particular and yam production in general. Arokoyo (2003); Effiong, Ijioma and Effiong (2016) noted that radio and television were the major information source used in agricultural extension

delivery in Ikom Agricultural zone in particular, Cross River State and Nigeria in general.

## METHODOLOGY

The study was carried out in Ikom agricultural zone of Cross River State, Nigeria. Ikom agricultural zone is made up of six Local Government Areas namely; Abi, Yakur, Obubra, Etung, Ikom and Boki. The zone shares an international boundary with the Republic of Cameroon to the East, Abia and Ebonyi States in the West and Akwa Ibom State in the South. It covers an approximate land mass of 16,280.02km and lies between latitudes 4°28'N and 5°14'N of the equator and longitudes 7°50'E and 9°28'E of the Greenwich Meridian. The area is approximately 25m above the sea level with annual temperature range of 27°C, to 33°C, rainfall varies between 1500mm-2000mm. The study area is found in the tropical rain forest zone of the country. It is a culturally heterogeneous and multilingual zone with about ten (10) different spoken languages. The main economic activities in the area include: farming, fishing, and trading.

A multi-stage random sampling technique was used for the study. The first stage involved a random selection of two (2) agricultural blocks in the zone (Ikom Agricultural zone) namely; Ikom and Yakurr. The second stage involved random selection of five (5) cells (units) from each of the selected blocks giving a total of ten (10) cells (units). The cells selected in Ikom were; Akparobong, Nkum, Okumi, Okangha-Mpkani, and Akparabong, while those selected in Yakurr were; Ugep, Nko, Mkpani, Agoi, and Idomi. A simple random sampling technique was used to select thirteen (13) farmers from each cell in Ikom blocks making a total of sixty-five (65) yam farmers. Also, simple random sampling technique was used to select thirteen (13) farmers from each cell in Yakurr blocks, making up a total of sixty five (65) yam farmers. A total of 130 yam farmers were used for the study.

**Table 1: Available ICT tools in the study area**

ICT	Frequently	Occasionally	Rare	Never	Mean $\bar{X}$	Rank
Radio	96(76.8%)	20(16%)	64(4.8%)	3(2.4%)	3.70	1 <sup>st</sup>
Television	36(28.8%)	69(55.2%)	18(14.4%)	2(1.6%)	3.11	3 <sup>rd</sup>
Mobile phone	77(61.6%)	32(25.6%)	13(10.4%)	3(2.4%)	3.50	2 <sup>nd</sup>
Internet	4(3.2%)	14(11.2%)	68(54.4%)	39(31.2%)	1.86	8 <sup>th</sup>
Print media	9(7.2%)	78(62.4%)	33(26.4%)	5(4%)	2.73	4 <sup>th</sup>
Personal computer	11(8.8%)	22(17.6%)	69(55.2%)	23(18.4%)	2.17	6 <sup>th</sup>
Video player	5(4%)	7(5.6%)	104(83.2%)	9(7.2%)	1.23	12 <sup>th</sup>
Slide Projector	6(4.8%)	78(62.4%)	32(25.6%)	9(7.2%)	2.70	5 <sup>th</sup>
Email, DVD	3(2.4%)	2(1.6%)	23(18.4%)	97(77.6%)	1.29	11 <sup>th</sup>
Printer	3(3.4%)	7(5.6%)	32(25.6%)	83(66.4%)	1.44	9 <sup>th</sup>
S.M.S platform	7(5.6%)	8(6.4%)	105(84%)	5(4%)	2.14	7 <sup>th</sup>
Photocopier	2(1.6%)	4(3.2%)	24(19.2%)	95(70%)	1.30	10 <sup>th</sup>

Source: Field Survey, 2020

Table 1, shows that different ICT devices were available in the study area. It reveals that radio, mobile phone, television and print media were the most available ICT devices in the area with mean score of ( $\bar{X}=3.70$ ), ( $\bar{X}=3.50$ ) and ( $\bar{X}=3.11$ ) ranked 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> respectively. This implies that these devices were the most common sources of technological information and innovation dissemination in the area. This finding confirms a report by Effiong (2013a) who stated that small scale farmers can obtain agricultural information through radio, television and mobile phones. Print media and slide projector with mean score of ( $\bar{X}=2.73$ ) and ( $\bar{X}=2.70$ ) respectively also indicated that information can be sourced through those sources, but they are not readily available since few respondents had slide projectors. On the other hand, personal computer and S.M.S platforms still serve as a minimal source of disseminating information due to high cost of cell phones. This could be due to high cost of subscription or poor network coverage. Internet, Printer, Email, DVD, Photocopier and video player have the least mean score

of  $\bar{X}=1.86$ ,  $\bar{X}=1.44$ ,  $\bar{X}=1.29$ ,  $\bar{X}=1.30$  and  $\bar{X}=1.23$  respectively. This shows that they are the least available ICT devices by which farmers source information in the area. In all, the result shows that radio was the most readily available device and this agreed with Effiong and Aboh (2018) who stated that radio and television sets are mostly available and relatively inexpensive to set up. It is estimated that more than 50% of all households in developing countries have access to radio, and can use indigenous languages even if the population served are small, this accounts for its usefulness even in difficult times (Effiong, Effiong and Udo 2015).

**Table 2: Level of awareness of ICTs among yam farmers in the study area**

S/N	ICTs	Aware	Not aware	Mean $\bar{X}$	Rank
1	Radio	92(77.6%)	28(22.4%)	1.78	1 <sup>st</sup>
2	Television	88(75%)	37(29.6%)	1.70	2 <sup>nd</sup>
3	Mobile phone	83(70.4%)	42(33.6%)	1.66	3 <sup>rd</sup>
4	Internet	52(4.6%)	73(58.4%)	1.42	6 <sup>th</sup>
5	Print media	77(61.6%)	48(38.4%)	1.62	4 <sup>th</sup>
6	Personal computer	60(48%)	65(52.4%)	1.48	5 <sup>th</sup>
7	Video player	57(45.6%)	68(54.4%)	1.40	7 <sup>th</sup>
8	Slide Projector	50(40%)	75(60%)	1.12	12 <sup>th</sup>
9	Email, DVD	45(36%)	80(64%)	1.36	8 <sup>th</sup>
10	Printer	37(29.6%)	88(70.4%)	1.29	9 <sup>th</sup>
11	S.M.S	27(21.6%)	98(78.4%)	1.22	10 <sup>th</sup>
12	Photocopier	21(10.8%)	104(83.2%)	1.15	11 <sup>th</sup>

Source: Field Survey, 2020

Table 2, shows the distribution of respondents based on the level of awareness of ICTs among yam farmers in the study area. The results reveal that Radio ( $\bar{X}=1.78$ ), Television ( $\bar{X}=1.70$ ), Mobile phone ( $\bar{X}=1.66$ ) and Print media ( $\bar{X}=1.62$ ) ranked 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> respectively. These were the ICTs farmers had greater awareness and usage in Ikom Agricultural Zone, as a major source of agricultural information for yam production. This result agreed with the finding of Effiong (2012a), who asserts that radio and television have been the major ICTs used in agricultural extension delivery in Akwa Ibom State.

Nevertheless, the proportion of farmers that were aware of these ICTs were commendable. This can be attributed to the high popularity of Global system for mobile (GSM) communication in Nigeria (Effiong, 2013a). Also, a small proportion of the yam farmers in Ikom Agricultural Zone were still not aware of the availability of ICTs in the study area. The farmers agreed not to be aware of ICT tools such as; personal computers ( $\bar{X}=1.48$ ), internet ( $\bar{X}=1.42$ ), video player ( $\bar{X}=1.40$ ), Email, DVD ( $\bar{X}=1.36$ ), printer ( $\bar{X}=1.29$ ), S.M.S ( $\bar{X}=1.22$ ) and photocopier ( $\bar{X}=1.15$ ). The fact that farmers

do not have access to information shows that most rural areas do not have access to major ICT facilities and are not likely to be aware of major agricultural findings. These findings confirm the statement by Effiong and Asikong (2013) that the problem of underdevelopment is

attributed to inability of large portion of the world population to assess and effectively utilize technologies for the betterment of their production vis-à-vis yam production activities in Ikom Zone.

**Table 3: Perceived effect of ICT among yam farmers in the study area**

S/N	Variables	High	Medium	Low	Mean $\bar{X}$	Rank
1	Increase knowledge on yam production	97(77.6%)	16(12.8%)	12(9.6%)	2.68	5 <sup>th</sup>
2	Improved access to agricultural markets	88(70.4%)	22(17.6%)	15(12%)	2.58	7 <sup>th</sup>
3	Increase information availability in yam production	77(61.6%)	28(22.4%)	20(16%)	2.48	10 <sup>th</sup>
4	Improved access to credit institutions/loans	60(48%)	35(28%)	30(24%)	2.24	11 <sup>th</sup>
5	Reduce cost of interaction among yam farmers	30(24%)	70(56%)	25(20%)	3.88	1 <sup>st</sup>
6	Enhance capacity building among yam farmers	88(70.4%)	27(21.6%)	10(8%)	2.62	6 <sup>th</sup>
7	Strengthening partnership with research and extension	100(80%)	20(16%)	5(4%)	2.76	3 <sup>rd</sup>
8	Enhance decision-making among yam farmers.	98(78.4%)	17(13.6%)	10(8%)	3.50	2 <sup>nd</sup>
9	Improve access to agricultural inputs	98(78.4%)	20(16%)	7(5.6%)	2.73	4 <sup>th</sup>
10	Enhance accuracy of information/Timeliness	79(63.2%)	30(24%)	16(12.8%)	2.50	9 <sup>th</sup>
11	Enhance timely feedback from farmers to researchers	86(68.8%)	22(17.6%)	17(13.6%)	2.55	8 <sup>th</sup>

**Sources:** Field Survey, 2020

Table 3, shows the perceived effect of ICTs on yam production activities in the study area. The respondents showed positive response to the effects of the use of ICTs. From the table, the respondents showed increased productivity in the following areas: reducing cost of interaction among farmers ( $\bar{X}$ =3.88), enhancing decision-making among farmers ( $\bar{X}$ =3.50), strengthening partnership with research and extension ( $\bar{X}$ =2.76), improving access to agricultural input ( $\bar{X}$ =2.73), increasing knowledge on yam production ( $\bar{X}$ =2.68), enhancing capacity building among farmers ( $\bar{X}$ =2.62), improving access to agricultural market ( $\bar{X}$ =2.58), enhancing timely feedback from farmers to researcher ( $\bar{X}$ =2.55), enhancing accuracy of information/timeliness ( $\bar{X}$ =2.50), increasing information availability in yam production ( $\bar{X}$ =2.48) and improving access to credit institution/loans ( $\bar{X}$ =2.24) and ranked 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> respectively. This finding is

in agreement with the study of Effiong et al., (2016); Effiong and Aboh (2014); Effiong and Aboh (2019); Aboh and Effiong (2019); Effiong and Aboh (2019) who stated that Information and Communication Technologies are the major sources of information necessary for the determinant of adoption of improved rubber production technologies among farmers in Akwa Ibom State, Nigeria.

#### **CONCLUSION:**

The study concludes that radio, mobile phones, television, print media and computer were the major Information and Communication Technologies used among respondents in the study area. There is high perception of positive effects of Information and Communication Technologies on agricultural practice among yam farmers in Ikom Agricultural zone of Cross River State, Nigeria. The use of Information and

Communication Technologies among farmers in the study area should be enhanced through non-governmental organizations (NGOs), community efforts, well to do individuals, oil companies and government agencies by making available all the necessary ICTs tools such as personal computers and Internet services in the rural areas of Ikom agricultural zones for use by yam farmers at all levels of production process.

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