

# Frequency of use of Information and Communication Technologies (ICTs) Among Women Farmers in Agricultural Development Programme Zones in Oyo State, Nigeria

Adebisi GL<sup>1\*</sup>, Oyeboode LA<sup>2</sup> and Ibrahim AO<sup>3</sup>

<sup>1</sup>Department of Agricultural Extension and Management, Federal College of Animal Health and Production Technology Moor plantation, Ibadan, Oyo State

<sup>2</sup>Department of Agriculture, College of Agriculture Food Science and Technology, Wesley University Ondo, Ondo State

<sup>3</sup>Department of Forestry Technology, Federal College of Wildlife Management, New Bussa, Niger State

## \*Corresponding author

Adebisi GL, Department of Agricultural Extension and Management, Federal College of Animal Health and Production Technology Moor plantation, Ibadan, Oyo State, E-mail: adebisigbadebo2014@gmail.com

Submitted: 01 Mar 2019; Accepted: 16 Mar 2019; Published: 29 Apr 2019

## Abstract

The potential of ICTs in retrieving vast amount of agricultural information at relatively low cost is invaluable, hence the study assessed the frequency of use of ICTs among women farmers in Agricultural Development Zones in Oyo State. A total of 120 respondents were sampled. Data were retrieved using interview schedule and were analysed using descriptive and inferential statistics. Statistics reveal respondents average age, average household size and average monthly income as  $\bar{x}=45.8$ ,  $\bar{x}=10.6$  and  $\bar{x} = ₦7,800.34$  respectively, majority (86.7%) were married, 58.3 % representing respondents with primary education. Mobile phone was the most available ( $\bar{x}=0.98$ ) and the most frequently used ( $\bar{x}=1.83$ ) ICT by the respondents among all the ICTs available. Provision of information on fertilizer sources and application ( $\bar{x}=1.66$ ) was the benefit derived most from the use of ICTs while poor ICTs infrastructure ( $\bar{x}=1.55$ ) and difficulty in the utilization of ICTs gadgets ( $\bar{x}=1.62$ ) ranked highest as constraints to the utilization of ICTs. Significant relationship existed between respondents average monthly income ( $r=0.492$ ,  $p=0.000$ ), educational level ( $\chi^2=4.726$ ,  $p=0.021$ ) constraints to the utilization of ICTs ( $r=0.423$   $p=0.000$ ) and utilization of ICTs. Scaling up the ICTs infrastructure base around farming clusters and capacity building on enhancing the utilization of mobile phones for agricultural information retrieval is advocated for women farmers.

**Keywords:** Frequency use of ICTs, women farmer and Agricultural Development Programme Zones

## Background to the study

Women farmers involved in several income-generating activities such as food processing, marketing, gathering of non-timber forest products and craft making among other activities to help feed their families and better their well being. They also constitute the farming population and even responsible for farm work. According to the United Nations Report on status of the world's women (2000), women are twice as likely to be involved in agricultural related activities as men [1]. Several studies have indicated that women in agriculture contributed some 60-80% of the labour input in African Agriculture, this is especially so for the production, processing and trade in food commodities [2-4]. Women farmers in their own right growing several crops and keeping livestock, they also spare time to help on their husband's farms particularly at the peak periods of planting and harvesting. The roles that women farmer's play and their position in meeting the challenges of agricultural production and rural development are quite dominant and prominent.

Despite the significant contribution of women farmers to food production in both rural and urban area, they were not considered productive; they were marginalized and have limited access to important production resources like fertile land, capital in the form of credit, extension services and technology. This brings to bear the need for appropriate use of ICTs through which women farmers can have access to information they need to improve their activities and boost their productivity. All over the world, the frequency use of ICTs have transformed societies and improve livelihood of people particularly the rural people through the provision of information. Information is regarded as one of the resources needed for agricultural development. According to Chapman and Slaymaker (2002), information can be defined as the analyzed data, often presented in a form that is specially designed for a given decision making task and transmitted to the receiver or decision maker [5]. Therefore, women farmers are needed to be exposed to information and innovation for improvement in agricultural productivity.

## Objectives of the Study

The general objective of the study is to assess the frequency of use of

ICTs among women farmers in Oyo State while specific objectives of the study were to:

1. Describe the socio-economic characteristic of the respondents.
2. Determine ICTs available for use in the study area.
3. Identify the frequency of use of ICTs available to the respondents in the study area.
4. Determine the benefits the respondents derive from their use of ICTs.
5. Identify constraints to the use of ICTs by the respondents in the study area.

### Methodology

The study was conducted in Oyo State. The climate is equatorial, notable with dry and wet seasons and relatively high humidity, average daily temperature ranges between 25°C (77.0°F) and 35°C (95.0°F) almost throughout the year. It is located between latitude 7°45'N and longitude 4°15'E which covers a total area of 28.454 square kilometers. The area is comprised of different ICTs with majority located in urban centre. The population of the study comprises of women farmers and two stage sampling procedures were used to determine the sample size. The first stage involved the purposive selection of all Agricultural development zone in Oyo State which were Ibadan/Ibarapa ADP Zone, Saki ADP Zone, Oyo ADP Zone, Ogbomosho ADP Zone while the second stage involved the selection of registered women farmers using proportionate sampling technique which resulted to 120 women farmers.

### Registered Women Farmers, ADP Zones, and 15% of Women in each Zones.

ADP Zones Farmers	Registered Women Women Farmer selected	15% of Registered
Ibadan/Ibarapa	300	45
Saki	150	23
Oyo	196	29
Ogbomosho	150	23
Total		120

### Data Analysis

Data were analyzed with the use of descriptive statistics such as frequency, percentage and inferential statistics such as Chi-square and Pearson Product Moment Correlation (PPMC) at 5% level of significance.

### Result and Discussion

#### Respondents socioeconomic characteristics

The result of analysis in Table 1 below shows that 2.5% of the respondents are between ages of 20 to 30 years and 67 to 70 years respectively, 10.0% of them are between ages of 31 and 40 years, 13.3% of them are between ages of 51 and 60 years while 71.7% of them are between ages of 41 and 50 years. The implication of this result is that majority (71.7%) of the respondents are in their productive ages. This finding is similar to the research finding of Akinbile (2007) that reported that most of the female farmers are more than 40 years and that only a few farmers are older than 50 years of age [6]. On the respondent's religious affiliations, the result showed that 47.5% of the respondents were Christians, 46.7% of the respondents were Muslim and 5.8% of them practice traditional religion. This means that the Christianity is popular than any other religion among the respondents. As shown in Table 1, majority

(86.7%) of the respondents were married, 3.3% of them were divorced while 10.0% of them were widowed. The outcome of this research agreed with finding of Banmeke (2003) that reported that majority of women farmers were married. Available data reveals that 8.3% of the respondents have between 1 and 4 persons in their families, 60.9% of them have between 5 and 8 persons in the families while 30.8% of the respondents have between 9 and 12 persons in their families [7]. This implies that women farmers have larger families to cater for. Also, 16.7% of the respondents involved in crop cultivation, 20.0% of them involved in animal husbandry while 63.3% of them involved in both crop and animal husbandry. In terms of income earning, the study revealed that 13.3% of them were earning below N5000, 17.5% of the respondents were earning between N5000 and N7000, 25.0% of them were earning between N7001 and N9000 while 44.2% of them were earning above N9000. Respondents level of education indicated that 33.3% of the respondents had no formal education, 58.3% of them had primary education, and 1.7% of them had secondary education while 6.7% of the respondents had tertiary education. The implication is that educational level of the women are very low. Findings also show that 6.7% of them engaged in civil service besides farming, 80.0% of them engaged in trading, 10.8% involved in hair dressing while 2.5% of them were employed in private business besides farming. Farming as a business is not a major activities of women farmers in the study area.

**Table 1: Distribution of Respondents by Socio-economic characteristics**

Variables	Frequency	Percentage	Mean
<b>Age (years)</b>			
20-30	3	2.5	45.8
31-40	12	10.0	
41-50	86	71.7	
51-60	16	13.3	
61-70	3	2.5	
<b>Religion</b>			
Islam	56	46.7	
Christianity	57	47.5	
Traditional	7	5.8	
<b>Marital status</b>			
Married	104	86.7	
Divorced	4	3.3	
Widowed	12	10.0	
<b>Household size</b>			
1-4	10	8.3	10.6
5-8	73	60.9	
9-12	37	30.8	
<b>Type of Agriculture involved</b>			
Crop cultivation	20	16.7	
Animal husbandry	24	20.0	
Both crop and Animal husbandry	76	63.3	
<b>Income/Month (Amount in N)</b>			
< 5,000	16	13.3	
5000-7000	21	17.5	

7001-9000	30	25.0	7,800.34
>9000	53	44.2	
<b>Other occupation</b>			
Civil service	8	6.7	
Trading	96	80.0	
Hairdressing	13	10.8	
Private employed	3	25	
<b>Education Level</b>			
No formal education	40	33.3	
Primary education	70	58.3	
Secondary education	2	1.7	
Tertiary education	8	6.7	

### Availability of ICTs among the respondents

Table 2 shows that 97.5% of the respondents indicated the availability of radio, 98.3% of them indicated the availability of mobile phone, 85.0% of them indicated the availability of television. Also, Extension bulletin poster (55.0%), newspaper (23.3%), computer and CD-ROMs (3.3%) respectively, internet (1.7%) were the ICTs available among the respondents in the study area. The implication of this findings is that mobile phone is the most popular ICTs among the respondents in the study area.

**Table 2: Distributions of respondents according to the availability of ICTs**

ICTs tools	Frequency	Percentage	Mean
Radio	117	97.5	0.97
Television	102	85.0	0.85
Mobile phone	118	98.3	0.98
Extension bulletins/posters	66	55.0	0.45
Computer	4	3.3	0.02
Internet	2	1.7	0.01
Newspaper	28	23.3	0.19
CD-ROM	4	3.3	0.02

### Frequency of use of ICTs

Available data from table 3 shows that 75.0% of the respondents always use radio, mobile phone was 85.0% always use, television was 70.8% occasionally use, extension bulletin was 91.6% never use, computers and CD-ROMs were 96.7% never use respectively, while internet was 98.3% never use. The implication of this result showed that mobile phone was only new ICTs used among rural women farmer's besides from radio and television which are old ICTs.

**Table 3: Distribution of respondents according to the frequency of use of ICTs**

ICTs Tools	Always	Occasionally	Never	Mean Scored	Rank
Radio	90(75.0)	28(23.3)	2(1.7)	1.73	2 <sup>nd</sup>
Television	15(12.5)	85(70.8)	20(16.7)	0.96	3 <sup>rd</sup>
Mobile phone	102(85.0)	16(13.3)	2(1.7)	1.83	1 <sup>st</sup>
Extension bulletin\ poster	2(1.7)	8(6.7)	110(91.6)	0.10	4 <sup>th</sup>

Computer	-	4(3.3)	116(96.7)	0.03	6 <sup>th</sup>
Internet	-	2(1.7)	118(98.3)	0.02	8 <sup>th</sup>
Newspaper	2(1.7)	8(6.7)	110(91.6)	0.10	4 <sup>th</sup>
CD- ROM	-	4(3.3)	116(96.7)	0.03	6 <sup>th</sup>

### Respondents benefits of ICTs use

Table 4 shows that majority of the respondents (73.3%), (62.5%) and most of the respondents (58.3%), (55.0%), (50.0%) benefited highly from information on fertilizer sources and application, information on market prices and location, reduce travelling time and costs, childcare and nutrition, provides information on public health. This implies that respondents in the study area derive benefits from the use of ICTs whether it's highly or slightly when compared it with no benefits attributed with the use of ICTs in the result obtained.

**Table 4: Distribution of respondents according to the benefit derived from the use of ICTs**

Benefits	High Benefit	Slight Benefit	No Benefit	Mean Score	Rank
Provide information on market price and Location	75(62.5)	35(29.2)	10(8.3)	1.54	2 <sup>nd</sup>
Help in Pests, disease and control	52(43.3)	30(25.0)	38(31.77)	1.12	6 <sup>th</sup>
Provide information on new agricultural techniques\ practices	38(31.7)	52(43.3)	30(25.0)	1.07	8 <sup>th</sup>
Provide information on fertilizer sources and application	88(73.3)	23(19.2)	9(7.5)	1.66	1 <sup>st</sup>
Information sources on soil management	52(43.3)	26(21.7)	42(35.0)	1.08	7 <sup>th</sup>
Help in child care and nutrition	66(55.0)	40(33.3)	14(11.7)	1.43	4 <sup>th</sup>
Reduce travelling time and costs	70(58.3)	41(34.2)	9(7.5)	1.51	3 <sup>rd</sup>
Management information	34(28.3)	30(25.0)	56(46.7)	0.82	9 <sup>th</sup>
Provide information on public health	60(50.0)	45(37.5)	15(12.5)	1.38	5 <sup>th</sup>
Government regulation	34(28.3)	30(25.0)	56(46.7)	0.82	9 <sup>th</sup>

### Respondents constraints in ICTs use

Table 5 reveals that majority of the women farmers 70.0%, 66.7%, 65.0%, 60.0% indicated that they experienced serious constraints on high cost of ICTs gadgets, poor ICTs infrastructure, inability to read and comprehend English Language, high cost of electricity while most of the respondents 35.8%, 32.5%, 27.5%, 25.0% indicated no constraints in the use of ICTs in terms of inability to understand the language of presentation, faulty equipment, inappropriate program schedule, loss of signals from sources during program and lack of local content.

**Table 5: Distribution of respondents by constraints to use of ICTs**

Constraints	Serious constraints	Mild constraints	Not a Mean	constraint
High cost of ICTs gadgets	84(70.0)	26(21.7)	10(8.3)	1.62
High cost of electricity	72(60.0)	30(25.0)	18(15.0)	1.45
Difficulty in operating ICTs gadgets	63(52.5)	50(41.7)	7(5.8)	1.47
Faulty equipment	41(34.2)	40(33.3)	39(32.5)	1.02
Loss of signals from source	52(43.3)	38(31.7)	30(25.0)	1.18
during program Inappropriate programme schedule	40(33.3)	47(39.2)	33(27.5)	1.06

Shortage of time allotted to Agricultural programme	32(26.7)	60(50.0)	28(23.3)	1.03
Inability to understand the language of presentation	47(39.2)	30(25.0)	43(35.8)	1.03
Lack of local content	28(23.3)	62(51.7)	30(25.0)	0.98
Inability to read and comprehend	78(65.0)	26(21.7)	16(13.3)	1.52
English language Poor ICTs infrastructure	80(66.7)	26(21.7)	14(11.6)	1.55

### Relationship between respondents socioeconomic characteristics and frequency of use of ICTs

The result of correlation analysis and chi-square in table 6 shows that there was significant relationship between the women farmers income and the use of ICTs ( $r=0.492$ ;  $p=0.000$ ) which implies that income determines the use of ICTs that is the higher the income the greater the use of it. Respondents with greater than income will have more access to the use of ICTs compared with the respondents with the lower income. Also, chi-square results shows that there was significant relationship between the educational level of the respondents and the use of ICTs ( $\chi^2= 4.726$ ;  $p=0.021$ ).

The implication of this result shows that educational levels of respondents determine the use of ICTs. Respondents that are well educated would have a better understanding of the use of ICTs.

**Table 6: Result of correlation analysis and chi-square result of socioeconomic characteristics of the respondents and the frequency of use of ICTs**

Variables	$\chi^2$	DF	r-value	p- value	Decision
Age			0.045	0.211	NS
Religion	2.486	2		0.248	NS
Marital status	3.026	2		0.227	NS
Household size			0.066	0.376	NS
Type of Agriculture Involved	2.061	2		0.303	NS
Income			0.492	0.000	S
Other Occupation	3.446	3		0.134	NS
Educational level	4.726	3		0.021	S

### Result of correlation analysis of the relationship between the constraints and frequency of use of ICTs

The result of the correlation analysis from table 7 shows that there was significant relationship between the respondents constraints and the use of ICTs ( $r=0.423$ ;  $p=0.000$ ). This implies that the constraints the respondents were facing in the use of ICTs does not discourage them to continue using ICTs, this is probably because of the advantages the respondents were getting from the use of ICTs, however, the more the constraints the more the use of ICTs by the respondents.

**Table 7: Result of correlation analysis of respondents constraints and the use of ICTs**

Variable	r-value	p-value	Decision
Constraints.	0.423	0.000	S
Index			

### Conclusion

This study attempted to assess the use of ICTs among women farmers in Oyo state and it was revealed that majority of the respondents are in their productive years, married, had household size between 5 and 8 persons in their families, engaged in both crop production and animal husbandry. The educational level attained by the respondents was primary education and other occupations respondents engaged with besides farming was trading. The most available ICTs in the study area among the respondents were radio and mobile phone which were always used. Information on market prices and location, fertilizer sources and application were the high benefits the respondents derived from the use of ICTs, however, high cost of ICTs gadgets and poor ICTs infrastructure were revealed as the major constraints to the use of ICTs in the study area among the respondents. Significant relationship exists between the respondent's income, educational level, constraints and the use of ICTs.

### Recommendations

Based on the findings of the study, the following recommendations were made;

- Women farmers should be educated since most of them have low level of education
- There should be an improvement in the provision of ICTs infrastructure in the study area by the government at all level.
- State ADPs should train women farmers on the use of ICTs tools
- Government agencies NGOs and other stakeholders in extension communication should expose the women farmers to the new ICTs tools and their use.

### References

1. United Nation (UN) (2000) The World Women 2000. Trend and Statistics. United Nation, New York.
2. FAO (2001) Research and Extension: A Gender Perspective. Women in Development Service (SDWW), Women and population Division, Rome, Italy.
3. United Nation (2005) The Millennium Development Goal Report, United Nation, New York 8
4. World Bank (2003) Nigeria Women in Agriculture in Sharing Experience. Example of Participating Approaches: The World Bank Group. The World Bank Participating Sourcebook, Washington D.C <http://www.worldbank.org/WBI/publications/html>
5. Chapman R, Slaymaker T (2002) ICT and Rural Development: Review of Literature, Current Interventions and Opportunities for Action, Overseas Development Institute (OID) Working Paper 192.
6. Akinbile, LA (2007) Socio-Economic and Health Related Constraints of Oil Palm Processors in Osun State, Nigeria. The Nigeria journal of Rural Extension and Development 2: 1-8.
7. Banmeke TO (2003) Accessibility and utilization of Agricultural information in the Economic Empowerment of Women Farmers in South-Western Nigeria. An unpublished Ph. D Thesis in the Department of Agricultural Extension, university of Ibadan, Ibadan.

**Copyright:** ©2019 Adebisi GL, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.