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Effectiveness of agricultural extension workers in the use of information and communication technology for rural farmers in North-East zone, Nigeria

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Abstract
The purpose of this research was to assess effectiveness of agricultural extension workers in the use of information and communication technology for rural farmers in north east zone, Nigeria, the specific objectives were to determine the effectiveness of Agricultural extension workers in the use of ICT in farm visit for rural farmers, to determine the effectiveness of Agricultural extension Workers in the use of ICT on the farm lectures for farmers, to determine the effectiveness of Agricultural extension workers in the use of ICT in conducting research for rural farmers and to determine the effectiveness of Agricultural extension workers in the Use of ICT in training session conducted for rural farmers , four research questions were formulated to guide the study , the target population of this study composed Agricultural extension workers in Gombe, Bauchi and Adamawa state of Nigeria with a population of 363 extension workers and all farmers in the study area, a total sample size of 1488 respondents (both rural farmers and extention workers) were used for the study, the sample was obtained through purposive sampling and multistage sampling, purposive sampling was used to obtain the sample size of all 363 Agricultural extension workers, while For farmers, a sample size of 1125 farmers were randomly selected using multistage sampling which is the sampling technique adopted based on stages. The data collected were analyzed using mean and Z- test. The mean was used to answer research questions 1 to 4, using the true class limit of real numbers of the assigned value of the respond categories which were used for taking decision while z test was used to test the four null hypotheses at 0.05 level of significance.
The findings of this Study revealed that out of the seven suggested items by the researcher on effectiveness of agricultural extension workers in the use of ICT in farm visit for rural farmers, four items were accepted while three items were rejected which indicates effectiveness extension workers in the use of ICT in farm visit for rural on the effectiveness of Agricultural Extension Workers on the farm lectures for farmers out of the six items suggested two were accepted while four items were rejected which implies ineffectiveness of the extension workers on that aspect likewise on the use of ICT in conducting research for rural farmers all the items were accepted which means Agricultural Extension Workers are very effective on the use of ICT in conducting research for rural farmers likewise on effectiveness of agricultural extension workers on the effectiveness of agricultural extension workers in the use of ICT in training session for rural farmers three were accepted and three were rejected out of the six items.

Keywords: Agricultural, farmers, information, ICT

Introduction
Information and communication technologies (ICTs) are new technologies that cannot be ignored especially for development in all sectors including agriculture. ICT has become one of the main driving forces that can bring about development and change in almost all the profession. It was in the light of this that Chafe (2006) [4] noted that, the great transformation in the lives of the people especially in the developing countries depends on advances ICTs.

The rapid development of ICTs continues to have major influence on the livelihood of people across the world. Social research has shown that, countries with better access to ICT and who apply ICT in a widespread inclusive manner are able to seize the advantage of globalization (Awe, 2012) [3]. As noted by Ajayi (2008) [2], "the tremendous changes are quite glaring in every facet of our lives and touches simplest of domestic services to corporate and limitless industrial applications. ICTs such as Internet could create and meet demands which satisfies human and corporate needs at all times and levels (Lampe, Ellison, & Steinfield, 2008) [7].

Infact, ICTs are what rural dwellers need to climb to the heights developed continent had reached. The recent development in ICT has broken national and international barriers and turned the world into a global village, making information available to everyone, everywhere and at any time it is needed (Eke, 2013) [5].

According to Oskoue (2010) [8] defined ICTs as those technologies that facilitate communication and the processing and transmission of information by electronic means for the benefits of its users. Eke. (2013) [5] stated that, ICTs covered a wide range of equipment and services.

In agricultural extension, the ICTs used include: online radio, YouTube and mobile phones, short message services (SMS), world wide web (www), search engines, packet digital assistants, cameras, video, e-mail, computer, contact data bases and systems, CD-Rom, DVD.

Agriculture is an important sector of the economy which provides food and employment opportunity to the increase in population, the sector faces major challenges of enhancing production in a situation of dwindling natural resources necessary for production. The growing demand for agricultural products require serious task by Agricultural extension workers in providing the necessary information to farmers so as to improve the livelihoods of farmers. ICT is expected to play an important role in addressing these challenges and enhancing food security and rural livelihoods if properly and effectively utilized by all stake holders in the area of Agricultural extension.

No much research has been conducted on Agricultural extension workers use of ICT in relation to their performance in the service especially in Nigeria, but it's found in other part of the world where ICT is used by various Agricultural agencies and in extension services. In Nigeria where research are available on ICT the emphasis was only on training instead of their field performance, its therefore necessary to determine the Effectiveness of Agricultural Extension Workers in the use of Information and Communication Technology for Farmers in the North East Zone of Nigeria

Statement of the Problems

Decline in the Agricultural productivity and lack of application of modern farming skills and techniques among Agricultural extension workers (AEW) may be attributed to inability of farmers as well as Agricultural extension workers to identify, operate, manipulate, maintain and apply ICT facilities (Goodwin, & Rhoades 2013) [6] this means that Agricultural extension workers are not receiving proper attention as regard to ICT for the acquisition of competency and skills in Agricultural production. It is also observed that Agricultural extension workers lack the needed skills to make use of ICT facilities for optimum productivity and performance. Therefore, if this situation is allowed to continue Agricultural productivity would continue to suffer and the nation cannot be able to achieve its objective of attaining self-sufficient in food production.

Many extension workers in Nigeria need application of ICT for practical Agriculture. As pointed out by Shah, Kwak, Holbert (2001) [9]. Many farmers do not have the means to access and adequately demonstrate information on Agricultural skills in their farms due to many factors attributed to ICT and other materials. However application and the role play by ICT in extension services have not yet been assessed. This study is therefore, aims at determining the Effectiveness of Agricultural Extension Workers in the use of Information and Communication Technology for Rural Farmers in the North East Zone of Nigeria.

Purpose of the Study

The main purpose of this study is to determine the Effectiveness of Agricultural Extension Workers in the use of Information and Communication Technology for Rural Farmers in the North East Zone of Nigeria. The specific objectives are to determine the

1. Effectiveness of Agricultural Extension Workers in the Use of ICT in farm visit for rural farmers
2. Effectiveness of Agricultural Extension Workers in the Use of ICT on the farm lectures for farmers
3. Effectiveness of Agricultural Extension Workers in the Use of ICT in conducting research for rural farmers
4. Effectiveness of Agricultural Extension Workers in the Use of ICT in training session conducted for rural farmers

Research Questions

To achieve the objectives of the study, the following research questions were formulated

1. How effective are Agricultural Extension Workers in the Use of ICT in farm visit for rural farmers?
2. How effective are Agricultural Extension Workers in the Use of ICT on the farm lectures for rural farmers?
3. How effective are Agricultural Extension Workers in the Use of ICT in conducting research for rural farmers?
4. How effective are Agricultural Extension Workers in the Use of ICT in training session conducted for rural farmers?

Research Hypotheses

Ho_1: There is no significant difference between the mean rating of Agricultural extension workers and farmers on effectiveness of Agricultural Extension Workers in the Use of ICT in farm visit for rural farmers

Ho_2: There is no significant difference between the mean rating of Agricultural extension workers and farmers on effectiveness of Agricultural Extension Workers in the Use of ICT on the farm lectures for rural farmers

Ho_3: There is no significant difference between the mean rating of Agricultural extension workers and farmers on effectiveness of Agricultural Extension Workers in the use of ICT in conducting research for rural farmers.

Ho_4: There is no significant difference between the mean rating of Agricultural extension workers and farmers on effectiveness of Agricultural Extension Workers in the use of ICT in training session conducted for rural farmers.

Significance of the Study

The result of this study will be of importance to Agricultural extension workers by providing them with information on the

use of ICT in their profession, it will also enable them identify potential predictors related to the application of ICT that may result in higher productivity in Agriculture.

The study will also provide information to farmers on the application of ICT facilities in a manner that will improve their reasoning and thinking ability without having negative effect on their farming activities. Universities will also benefit from the study by providing empirical evidence that could serve as a guide to administrators in Universities especially in determining the availability and adequacy of ICT facilities to be provided to Agricultural extension students.

Policy makers will also benefit from the study which is expected to serve as feedback to various agencies and policy making bodies like Federal ministry of Agriculture in their effort to help in improving Agricultural productivity.

Scope of the study

This study will be delimited to determine the Effectiveness of Agricultural Extension Workers in the use of Information and Communication Technology for Rural Farmers in the North East Zone of Nigeria, the respondents will be Agricultural extension workers and farmers in Gombe, Bauchi and Adamawa state of Nigeria

Methodology

Research Design

The research design will be survey study which is a study that deals with gatherings information about a larger number of people or object by studying a representative sample of the entire group (Yalams & Ndomi, 2000) [10].

Area of the Study

The area of research study is Gombe, Bauchi and Adamawa state of Nigeria.

Population of the study

The target population of this study composed Agricultural extension workers in Gombe, Bauchi and Adamawa state of Nigeria with an estimate population of 363 extension workers and all farmers in the study area

Sample and Sampling Techniques

A total sample size of 1488 respondents (both rural farmers and Extention Workers) were used for the study, the sample was obtained through purposive sampling and multistage sampling, purposive sampling was used to obtain the sample size of all 363 Agricultural extension workers, and this is due to the fact that the population of extension workers is manageable. For farmers, a sample size of 1125 farmers were randomly selected using multistage sampling which is the sampling technique adopted based on stages, stage 1 require selection of 3 out of 6 state in the north east zone of Nigeria namely Gombe, Bauchi and Adamawa, stage 2 require random selection of 26 local government areas (LGAs) out of 52 in Gombe, Bauchi and Adamawa state, stage 3 require random selection of 225 wards out of 554 wards in Gombe, Bauchi and Adamawa, stage 4 require random selection of 5 rural farmers from each of the 225 ward, making a sample size of 1125 rural farmers

Instrument for Data Collection

The instrument for collecting data for the study was structured questionnaire titled Questionnaire for Effectiveness of Extension Workers in the Use of ICT (QEEWICT)) which will be develop by the researcher.

Validation of the Instrument

Instrument for this study will be subjected to content and face validity by three experts from the faculty of Agriculture Department of Agricultural Extention Ahmadu Bello University Zaria (ABU, Zaria) they are requested to check for clarity, relevancy, and adequacy in relation to specific objectives and make necessary recommendation for correction on the items. Based on the observation of the experts the instrument will be modified to produce a valid copy for the study

Reliability of the Instrument

The reliability of the instrument will be established by trial testing using twenty Agricultural extension workers in Abubakar Tafawa Balewa University Bauchi (ATBU Bauchi). Split halves method of determining reliability will be employed, the group will be divided in to odd number and even number group and the scores obtained from each group will be correlated using Spearman Rank Order Correlation Coefficient and obtained the reliability coefficient of the halve test (which is the r - value), the reliability of the whole test will then computed using Spearman Brown Step up (prophecy) formula

Method for Data Collection

The questionnaire was administered to 1488 respondents (1125 farmers and 5 extension workers) by the researcher with the help of two research assistants, the respondents were given some time (two hours) to fill the questionnaire while the researcher and the research assistant collected the filled instrument for analysis.

Method of Data Analysis

Data collected was analyzed using mean and Z- test. The mean was used to answer research questions 1 to 4, using the true class limit of real numbers of the assigned value of the respond categories which were used for taking decision while z test was used to test the four null hypotheses at 0.05 level of significance.

Decision Rule

The data analyzed was taken based on the mean responses for answering the research questions. The true class limit of real numbers to peg a mean response under a response category any mean value equal or greater than 3.00 points was accepted otherwise rejected

The cut-off value is greater or less than 1.96.Any z-calculated value equal to or greater than 1.96 was rejected.

For the null hypotheses the z-computed was compared with critical value of z before taking a decision, when z was less than the critical z at 0.05 level of significance, the null hypothesis will be accepted but if the calculated z is greater or equal to the critical z- ratio, then the null hypothesis will rejected.

Data Presentation and Analysis

The data collected for this Study were statistically analyzed and presented based on the research questions and hypotheses that guided the study.

Research Questions 1

How effective are Agricultural Extension Workers in the Use of ICT in farm visit for rural farmers?

Table 1: Mean responses of Effectiveness of Agricultural Extension Workers in the Use of ICT in farm visit for rural farmers

S/N	Items	X	SD	X	SD	X	Remark
		Average					
1.	Use of ICT in scheduling farm visit	2.60	0.92	2.42	0.92	3.81	EF
2.	Use of ICT in determining the duration Of farm visits	1.54	0.72	1.00	0.093	2.04	IE
3.	Use of ICT in communicating with farmers during the farm visit	1.00	0.83	1.23	0.99	1.62	IE
4.	Use of ICT in inviting farmers for farm visit	3.24	0.947	3.21	0.892	4.85	VE
5.	Use of ICT in taking attendance during farm visit	1.21	0.58	1.36	0.591	1.89	IE
6.	Use of video coverage during farm visit	3.21	1.825	3.25	0.87	4.84	VE
7.	Use of ICT in taking pictures during the Farm visit	3.43	1.89	3.21	0.99.	3.32	ME
Grand Total		2.32		2.24		2.28	Rejected

Very effective…… (VE)= 5 POINTS
Effective…….. (EF)= 4 POINTS
Ineffective…… (IE)= 3POINTS
Moderately effective……(ME)= 2 POINTS
Ineffective……(IE)= 1 POINT

X_1=Mean responses of Effectiveness of Agricultural Extension Workers in the Use of ICT in farm visit for rural farmers
SD=Standard deviations
X_2=Mean responses of Farmers on the Effectiveness of Agricultural Extension Workers in the use of ICT in farm visit for rural farmers
Table 1 Shows that out of the seven items presented to the respondents(Both extension workers and farmers)four items were effective and these are: use of ICT in scheduling farm visit, use of ICT in inviting farmers for farm visit, use of video coverage during farm visit, use of ICT in taking pictures during the farm visit while three items were ineffective these includes: use of determining the duration of farm visits, use of ICT in communicating with farmers during the farm visit and use of ICT in taking attendance during farm visit respectively.

Research Questions 2

1- What is the effectiveness of Agricultural Extension Workers in the use of ICT on the farm lectures for farmers

Table 2: Mean responses of Effectiveness of Agricultural Extension Workers on the farm lectures for farmers

S/N	Items	X	SD	X	SD	X	Remark
		Average					
1.	Use of ICT in information dissemination during farm lectures	2.73	0.92	2.63	0.976	2.68	ME
2.	Use of ICT in arousing farmers interest during farm lectures	1.72	0.72	1.84	0.79	2.64	ME
3.	Use of ICT in demonstration for farmers during the farm lectures	1.32	0.693	1.62	0.84	2.13	IE
4.	Use of ICT in problem solving during the Farm lectures	1.22	0.432	1.22	0.099	1.83	IE
5.	Use of ICT in evaluating farmers during the farm lectures	1.67	0.086	1.17	0.082	2.26	ME
6.	Use of ICT in question and answers Session during the farm lectures	1.71	0.921	1.17	0.084	2.29	IE
Grand Total		1.73		1.608		1.67	Rejected

Table 2 Present six items to the respondents on the effectiveness of Agricultural Extension Workers on the farm lectures for farmers out of which two were considered as effective and they include: Use of ICT in information dissemination during farm lectures and Use of ICT in arousing farmers interest during farm lectures while four items were regarded ineffective and these are: Use of ICT in demonstration for farmers during the farm lectures, Use of ICT in problem solving during the Farm lectures, Use of ICT in evaluating farmers during the farm lectures, and Use of ICT in question and answers Session during the farm lectures.

Research Questions 3

What is the effectiveness of Agricultural Extension Workers in the use of ICT in conducting Research for rural Farmers?

Table 3: Mean responses of Effectiveness of Agricultural Extension Workers on the Use of ICT in conducting Research for rural Farmers?

S/N	Items	X	SD	X	SD	X	Remark
		Average					
1.	Use of ICT in identification	2.43	0.75	2.21	0.92	3.54	VE
2.	Use of ICT in data collection	1.72	0.27	1.82	0.71	2.63	ME
3.	Use of ICT in data analysis	2.14	0.87	1.93	0.67	3.10	ME
4.	Use of ICT in interpretation of Data	2.31	0.94	1.21	0.71	2.92	ME
5.	Use of ICT in literature review	2.51	0.093	2.27	0.72	3.12	ME
6.	Use of ICT in keeping research Record	2.40	0.63	1.21	0.31	3.005	ME
7.	Use of ICT in dissemination of Research recommendations to Farmers	2.86	0.089	2.93	1.031	4.33	ME
Grand Total		2.34		1.94		2.14	IE

Table 3 shows that out of the seven items presented to the respondents on the effectiveness of agricultural extension workers in the Use of ICT in conducting research for rural farmers all the items were regarded as effective and these are: Use of ICT in identification of research problem, Use of ICT in data collection, Use of ICT in data analysis, Use of ICT in interpretation of data, Use of ICT in literature review, Use of ICT in keeping research record, Use of ICT in dissemination of research recommendations to farmers.

Research Questions 4
What is the effectiveness of Agricultural Extension Workers in the use of ICT in Training Session for rural farmers?

Table 4: Mean responses of Effectiveness of Agricultural Extension Workers in the Use of ICT in Training session for rural farmers

S/N	Items	X	SD	X	SD	X	Remark
		Average					
1.	Use of ICT in scheduling Training Session	2.21	0.84	2.10	0.64	3.26	ME
2.	Use of ICT in information dissemination During training session	2.12	0.072	1.72	0.072	1.92	IE
3.	Use of ICT in registration for members during training session	2.32	0 .62	1.21	0.64	1.77	IE
4.	Use of ICT in making assessment training session	2.21	0.47	2.205	0.71	2.20	IE
5.	Use of ICT in inviting resource persons for training session	3.21	0.53	3.22	1.45	3.22	IE
6.	Use of ICT in issuance of certificate for training session	1.31	0.52	1.21	0.045	1.26	VIE
Grand Total		1.75		1.95		2.73	

Table 4 Shows that out of the six items presented to the respondents three were accepted *viz*: Use of ICT in scheduling Training Session, Use of ICT in inviting resource persons for training session and Use of ICT in inviting resource persons for training session and three items were rejected these are as follows: Use of ICT in registration for members during training session Use of ICT in making assessment during training session and Use of ICT in issuance of certificate for training session.

Hypothesis HO1

Ho1: There is no significant difference between the mean responses of Agricultural extension workers and farmers on effectiveness of Agricultural Extension Workers in the use of ICT during farm visit for rural farmers

Table 5: Z-test of the mean ratings of the respondents on effectiveness of Agricultural Extension Workers in the use of ICT during farm visit for rural farmers

Items	n	X	SD	Z-cal	Z-crit	Remark
AEW	363	2.32	1.42	- 0.80	1.96	uphold
Farmers	1125	2.24	1.39			

AEW: Agricultural Extension Workers
X: Mean
SD: Standard deviation
n:Sample
n1: 363 , n2:1125
Z-calculated, Z-critical

Table 4 reveals that the value of the calculated z of 0.80 is less than the z-critical value of 1.96 at 0.5 level of significance, therefore the null hypothesis (Ho1) is upheld which implies that the groups shared similar opinions on effectiveness of Agricultural Extension Workers in the use of ICT in farm visit for rural farmers

Hypothesis HO2

Ho2: There is no significant difference between the mean ratings of Agricultural extension workers and farmers on effectiveness of Agricultural Extension Workers in the use of ICT during farm visit for rural farmers

Table 6: Z-test of the mean ratings of the respondents on effectiveness of Agricultural Extension Workers in the use of ICT during farm visit for rural farmers

Items	n	X	SD	Z-cal	Z-crit	Remark
AEW	363	1.73	1.42	- 0.42	1.96	uphold
Farmers	1125	1.61	1.39			

Table 6 reveals that the value of the calculated z of 0.42 which is less than the z-critical value of 1.96 at 0.5 level of significance, therefore the null hypothesis (Ho1) is upheld which implies that the groups shared similar opinions on effectiveness of Agricultural Extension Workers in the use of ICT during farm visit for rural farmers

Hypothesis HO3

Ho3: There is no significant difference between the mean ratings of Agricultural extension workers and farmers on effectiveness of Agricultural Extension Workers in the use of ICT in conducting research for rural farmer

Table 7: Z-test of the mean ratings of the respondents on effectiveness of Agricultural Extension Workers in the use of ICT in conducting research for rural farmer

Items	n	X	SD	Z-cal	Z-crit	Remark
AEW	363	2.34	1.42	- 0.72	1.96	uphold
Farmers	1125	1.94	1.39			

Table 7 reveals that the value of the calculated z of -0.72 which is less than the z-critical value of 1.96 at 0.5 level of significance, therefore the null hypothesis (Ho3) is upheld which implies that the groups shared similar opinions on effectiveness of Agricultural Extension Workers in the use of ICT in conducting research for rural farmer

Hypothesis HO4

Ho4: There is no significant difference between the mean ratings of Agricultural extension workers and farmers in the Use of ICT for Training session for rural farmers

Table 8: Represent the data which was used to test hypothesis 4

Items	n	X	SD	Z-cal	Z-crit	Remark
AEW	363	1.75	1.42	- 0.82	1.96	uphold
Farmers	1125	1.95	1.39			

Table 7 reveals that the value of the calculated z of -0.72 which is less than the z-critical value of 1.96 at 0.5 level of significance, therefore the null hypothesis (Ho4) is upheld which implies that the groups shared similar opinions on effectiveness of Agricultural Extension Workers in the Use of ICT for Training session for rural farmers

Discussion of Findings

The findings of this Study were discussed under four sub headings in order of research questions and hypotheses. The findings of this Study revealed that out of the seven suggested items by the researcher on effectiveness of agricultural extension workers in the use of ICT in farm visit for rural farmers, four items were accepted and these are: use of ICT in scheduling farm visit, use of ICT in inviting farmers for farm visit, use of video coverage during farm visit, use of ICT in taking pictures during the farm visit while three items were

rejected these includes: use of ICT in determining the duration of farm visits' use of ICT in communicating with farmers during the farm visit and use of ICT in taking attendance during farm visit respectively the above findings is in line with the findings of. Who opined that use of ICT in extension delivery even with the launch and explosion of the global system of mobile communication (GSM) is very limited as most ADPS even at the headquarters do not have functional lines

The findings of this Study showed that out of the six items suggested to the respondents on the effectiveness of Agricultural Extension Workers on the farm lectures for farmers out of which two were accepted and they include: Use of ICT in information dissemination during farm lectures and Use of ICT in arousing farmers interest during farm lectures while four items were rejected and these are: Use of ICT in demonstration for farmers during the farm lectures, Use of ICT in problem solving during the Farm lectures, Use of ICT in evaluating farmers during the farm lectures, and Use of ICT in question and answers Session during the farm lectures.

The findings of this Study also revealed that out of the seven items presented to the respondents on the effectiveness of agricultural extension workers in the use of ICT in conducting research for rural farmers all the items were accepted and these are: use of ICT in identification of research problem, use of ICT in data collection, use of ICT in data analysis, use of ICT in interpretation of data, use of ICT in literature review, use of ICT in keeping research record, use of ICT in dissemination of research recommendations to farmers.

The findings on the effectiveness of agricultural extension workers in the use of ICT in training session for rural farmers also revealed that out of the six items presented to the respondents three were accepted *viz*: use of ICT in scheduling Training Session, use of ICT in inviting resource persons for training session and use of ICT in inviting resource

persons for training session and three items were rejected these are as follows: Use of ICT in registration for members during training session use of ICT in making assessment during training session and Use of ICT in issuance of certificate for training session.

On the hypotheses HO1 tested it revealed that reveals the value of the calculated z of 0.80 is less than the z-critical value of 1.96 at 0.5 level of significance, therefore the null hypothesis (Ho1) is upheld which implies that the groups shared similar opinions on effectiveness of Agricultural Extension Workers in the use of ICT in farm visit for rural farmers, hypothesis 2.HO2 reveals that the value of the calculated z of 0.42 which is less than the z-critical value of 1.96 at 0.5 level of significance, therefore the null hypothesis is upheld which implies that the groups shared similar opinions on effectiveness of Agricultural Extension Workers in the use of ICT during farm visit for rural farmers, hypothesis 3. (Ho3) reveals that the value of the calculated z of -0.72 which is less than the z-critical value of 1.96 at 0.5 level of significance, therefore the null hypothesis is upheld which implies that the groups shared similar opinions on effectiveness of Agricultural Extension Workers in the use of ICT in conducting research for rural farmer likewise hypothesis 4 reveals that the value of the calculated z of -0.72 which is less than the z-critical value of 1.96 at 0.5 level of significance, therefore the null hypothesis is upheld which implies that the groups shared similar opinions on effectiveness of Agricultural Extension Workers in the Use of ICT for Training session for rural farmers which implies in effeteness of Extension Workers in the aspect.

Conclusion

The findings of this Study revealed that out of the seven suggested items by the researcher on effectiveness of agricultural extension workers in the use of ICT in farm visit for rural farmers, four items were accepted while three items were rejected which indicates effectiveness extension workers in the use of ICT in farm visit for rural on the effectiveness of Agricultural Extension Workers on the farm lectures for farmers out of the six items suggested two were accepted while four items were rejected which implies ineffectiveness of the extension workers on that aspect likewise on the use of ICT in conducting research for rural farmers all the items were accepted which means Agricultural Extension Workers are very effective on the use of ICT in conducting research for rural farmers likewise on effectiveness of agricultural extension workers on the effectiveness of agricultural extension workers in the use of ICT in training session for rural farmers three were accepted and three were rejected out of the six items.

Recommendations

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

1. Agricultural extension workers should improve their effectiveness in the use of ICT in farm visit for rural farmers on the following items: use of ICT in determining the duration of farm visits' use of ICT in communicating with farmers during the farm visit and use of ICT in taking attendance during farm visit respectively.
2. Agricultural Extension Workers should improve their effectiveness on the farm lectures for farmers on the use of ICT in demonstration for farmers during the farm lectures, Use of ICT in problem solving during the Farm lectures, Use of ICT in evaluating farmers during the farm lectures, and Use of ICT in question and answers Session during the farm lectures respectively.
3. Agricultural extension workers should maintain their effectiveness in the use of ICT in conducting research for rural farmers on the suggested items.
4. Agricultural extension workers should improve on the effectiveness in the use of ICT in training session for rural farmers in the use of ICT in registration for members during training session, use of ICT in making assessment during training session and use of ICT in issuance of certificate for training session.

References

1. Abdussalami AS. Research method in education: Past, present, and future. Ibadan, Nigeria: Stiring-Horden Publishers (Nig) Limited; c2005.
2. Ajayi A. Effective use of information and communication technology for teaching in Nigerian colleges of education. Asian Journal of Information Technology. 2008;7(5):1-8. Available from: http://www.medwelljournals.com/fulltext/?doi=ajit.2008.1.8
3. Awe J. Public-private partnership in ICT for development in Nigeria. Journal of Advanced Multidisciplinary Research and Review. 2012;3(4):23-

36.
4. Chafe AI. Capacity building and computer acquisition training programme. Gusau, Nigeria: Federal College of Education; c2006.
5. Eke L. The ICT sector in Nigeria in 2013. International Journal of Advanced Multidisciplinary Research and Review. 2013;3(4):26-48.
6. Goodwin J, Rhoades E. Agricultural legislation: The presence of California Proposition 2 on YouTube. In: Proceedings of the Annual National Agricultural Education Research Conference; c2013 Nov 27-29; Louisville, KY.
7. Lampe C, Ellison N, Steinfield C. Changes in use and perception of the Internet. In: Proceedings of the 2008 Conference on Computer-Supported Cooperative Work; c2008; San Diego, CA. Available from: https://www.msu.edu/~nellison/LampeEllisonSteinfield 2008.pdf
8. Oskouei D. Social interaction in virtual communities: The significance of technology. International Journal of Web Based Communities. 2010;1(4):464-474.
9. Shah DV, Kwak N, Holbert RL. Connecting and disconnecting with civic life: Patterns of internet use and the production of social capital. Political Communication. 2001;18(2):141-162.
10. Yalams SM, Ndomi BM. Research report writing and supervision: A guide to supervisors and students in education, engineering, science, and technology. Bauchi, Nigeria: League of Researchers in Nigeria; c2000.