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ANALYSIS OF USE OF INTERNET FOR EXTENSION COMMUNICATION BY EXTENTION AGENTS IN KATSINA STATE, NIGERIA

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Abstract

The study examined the use of internet for extension communication by agricultural extension agents in Katsina State, Nigeria. A two-stage sampling technique was used to collect primary data through the aid of a well- structured questionnaire from 108 extension agents in the study area. Descriptive statistics were used to analyze the data. Result showed that majority of the extension agents (73.1%) had access to internet facilities while most of them (57.4%) had effective internet services. Majority of the extension agents (94.4%), (85.2%) and (81.5%) did not have access to internet in their offices, cyber cafes and modems respectively. The finding also showed that majority (60.2%) of the respondents use internet facilities for the purpose of accessing information for personal development. The frequency of internet usage showed that the extension workers that used Social network for knowledge update and to seek information were in the majority with a mean score of 1.68 while online public access catalogue was the least used internet facilities in the study area with a mean score of 0.48. Lack of access to internet network connectivity in rural areas, inadequate internet facilities and difficulty in subscription with mean scores of 2.08,1.8 and 1.80 respectively were the major constraints to internet usage in the study area. The study concluded that internet usage among the extension agents in the study area is very low. The study recommends that government should formulate policies that will stimulate the enabling working environment to enhance internet usage by the extension agent.

Keywords: *Extension Communication, Extension Agents, Internet Use and Analysis*

Introduction

Development of agricultural sector has been recognized as significant to the well-being and development of the rural dwellers. It is a key driver to economic growth and sustainable development of any country. The poor performance of the agricultural sector in developing countries, especially Nigeria has been linked to the upsurge of poverty and under performance of economic sector(Adetunji, 2013). To achieve poverty reduction, therefore, priority must be given to rural farming household whose main means of livelihood depends on agriculture. Agriculture is, therefore, critical both for economic growth and poverty reduction (Mustapha, Biwi and Manu, 2013). Omotosho, Ogunlade and Muhammad, (2012) opined that agricultural extension officers are the direct link bridging the communication gap between the agricultural researchers and the farmers, and in order to perform this role effectively and efficiently, agricultural extension

personnel must have steady access to up-to-date agricultural information. This can be done through the effective use of Information and Communication Technology (ICT). Information and Communication Technology (ICT) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, Internet, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. The importance of ICTs in the overall development of the world as a global village cannot be over emphasized. The development of ICT has encouraged the usage and accessibility of information by many people at the same time to make timely decisions (Adekoye, 2006).

In agriculture, ICT constitutes part of the medium through which information is delivered to farmers and also contributes to research for new innovation to be disseminated to the farmers. The development process in the world today heavily relies on the use of the ICTs by all sectors of the economy. Among the ICTs is the Internet usage which has been described as interactive and providing an opportunity for networking between individuals, groups and organizations. The Internet is an electronic computer network that connects millions of smaller networks to form a global network.

The use of ICT in agricultural extension and rural development is significant, especially now that its use has witnessed increase in almost all facets of rural life in several African countries including Nigeria. However, the persisting problems of poor connectivity, literacy, and accessibility have continued to hinder expansive utilization of these facilities for agricultural information dissemination (Umar,Musa, Olayemi and Suleiman, 2015).Agricultural extension depends largely on information exchange between farmers and a broad range of other actors particularly the front line extension workers that are the direct link between farmers and other actors in the agricultural knowledge and information system (Omotayo, 2005)

Despite the increase in information occasioned by ICT, the agricultural sector is still bedeviled by dearth of information. This is evident in the slow pace of technology transfer by the extension agents to the rural farmers who are the end users of technology. Rural farmers, especially at the grassroots, still record poor harvest and low quality of farm produce. Some of the major problems encountered by farmers are occasioned by insufficient information by the appropriate agency, poor awareness of available information, or inability of most farmers to effectively utilize and apply the information to boost their farming operations. The resultant effect of these problems is low agricultural productivity, poor marketing and pricing of agricultural products, and this aggravates poverty and hunger among rural farming households.

Agricultural Extension workers are confronted with many challenges that deprive them of keying into digital information era. It is on the strength of the foregoing that the researchers resolved to cause a research into the use of internet for extension communication by extension agents in Katsina State, Nigeria with the following specific objectives: to ascertain the level of access to internet services by the extension agents; ascertain the purpose for the use of the Internet by extension agents; determine the frequency of usage of the Internet services by the respondents; and to identify the constraints faced by the respondents in the use of the Internet.

Materials and Methods

This study was conducted in Katsina State. Katsina State is located in the North West Geo-Political Zone of Nigeria. Its capital town is Katsina. Katsina State is bounded in the East by Kano and Jigawa States, in the West by Zamfara State, in the South by Kaduna State and in the North by the Niger Republic. The projected population of the state was put at77,116,590 in 2019 from the 2006 figure

of 5,792,578 at a growth rate of 3.2 percent perannum (NPC, 2006).Katsina State occupies 24,192 square kilometers, located between latitudes 12°59'N $7^0$36'E and longitudes 12.983^{0}N 7.600°E. Katsina state can be classified into two climatic zones; tropical continental and semi-arid continental (Adamu, 2000). The southern part of the state (from Funtua to Dutsin-ma) is located in the former zone with total annual rainfall figures ranging from 800mm around Dutsin-Ma to 1000mm around Funtua. The north of Katsina state (from around Kankia to the extreme north-east) has total rainfall figures ranging from 600-700mm annually. Generally, climatic conditions in the state vary considerably according to months and seasons. Thus, the state experiences a cool dry (harmattan) season from December to February; a hot dry season from March to May; a warm wet season from June to September; and a less marked season after rains during the month of October to November, characterized by decreasing rainfall and gradual lowering of temperature(Adamu,2000). The indigenes are Hausa and Fulani. Major crops grown in the state include groundnuts, cotton, millet and guinea corn.

Results and Discussion

Result in Table 1 revealed that the highest level of access to internet facilities among the extension agents in the study area was on mobile phone with the mean score of 2.23, followed by the use of modem with the mean score of 1.27, use of cyber cafés ranked third with the mean score of 1.26 while the least level of access to internet facilities among the respondents was on the use of office (1.20). This implies that majority of the extension agents in the study area use mobile phone to access internet facilities. This negates the findings of Ezeh, 2013 who reported that majority 85.0% of the extension agents in South-East Nigeria accessed ICT facilities from cybercafé/tele-centres.

Table 1: Distribution of Extension Agents by Level of access to Internet Facilities

Place of Access	Always	Occasionally	Rarely	Mean	Ranking
Mobile Phone	59(54.6)	15(13.9)	34(31.5)	2.23	1st
Modem	10(9.3)	9(8.3)	89(82.4)	1.27	2nd
Cyber cafes	3(2.8)	22(20.4)	83(76.9)	1.26	3rd
Office	6(5.6)	10(9.3)	92(85.2)	1.20	4th

Source: Field Survey, 2016; Figures in Parentheses are in Percentages

Findings on the analysis of the purpose for the use of internet facilities by extension agents in Table 2shows that majority (60.2%) of the extension agents use internet for the purpose of accessing information for personal development while 39.8% of them do not use internet for the purpose of accessing information for personal development. Also only few 47.2% of the extension agents use internet for the purpose of teaching the farmers while most 52.8% of them do not use the internet for the purpose of teaching the farmer. It was observed that 49.1% of the respondents use internet to solve farmers' problems while 50.9% of them do not use the internet for solving farmers' problems.

Results in Table 2 also shows that few of the extension agents (42.6%), (26.9%) and (22.2%) use the internet to search for research institutes, innovation in agriculture and people respectively while majorities of them (73.1%), (57.4%) and (77.8%) do not use the internet to search for research institutes, innovation in agriculture and people respectively. About 38.9% and 32.4% of the respondents use the internet for personal and official communication while majority 77.8%

and 61.1% of them do not use the internet for personal and official communication respectively. Also 38.0% use the internet to search for agricultural organizations while majority 62.0% of them do not use internet to search agricultural organization. The Table also shows that 27.8% of the extension agents used internet to offer professional advice to farmer while majority of them do not offer professional advice on the use of internet. However, 39.8% of the extension agents use the internet for receiving and disseminating information to colleagues and farmers, while most 60.2% of them did not use the internet to receiving and disseminating information to their colleagues and farmers.

The Table also shows that 36.1% of the extension agents use internet to receive information from research institutes and farmers while most 63.9% of them do not use the internet to receive information from research institutes and farmers. However, online chatting gained prominent among the extension workers as a good number of them 41.7% engaged in charting, while 58.3% of the extension agents do not engaged in online charting. Also few 19.4% of the extension agents use the internet for recreational purpose viz-a-viz to obtain news and information, while majority 80.6% of them do not use internet for recreational purpose.

Table 2: Distribution of Extension Agents by Purpose of Internet Usage

Purpose	Yes	No
Personal Development	65(60.2)	43(39.8)
Farmer Teaching	51(47.2)	57(52.8)
Farmer Problems	53(49.1)	55(50.9)
Search for Research Institutes	29(26.9)	79(73.1)
Search Innovation in Agriculture	46(42.6)	62(57.4)
Search for People	24(22.2)	84(77.8)
Personal Communication	42(38.9)	66(61.1)
Official Communication	35(32.4)	73(67.6)
Agricultural Organization	41(38.0)	67(62.0)
Professional Advice to Farmer	30(27.8)	78(72.2)
Receiving and Disseminating Information	43(39.8)	65(60.2)
Information From Research Institutes and Farmers	39(36.1)	69(63.9)
Information on Farm Input	45(41.7)	63(58.3)
Recent Farm Information	41(38.0)	67(62.0)
Chatting with Friends, Farmers and Colleagues	45(41.7)	63(58.3)
Recreational	21(19.4)	87(80.6)

Source: Field Survey, 2016 Figures in Parentheses are in Percentages

Table 3 showed the distribution of the extension agents on the frequency of internet usage. From the table, the extension workers that used Social network for knowledge update and to seek information were in the majority with a mean score of 1.68.This means that a very good majority of the extension workers in the study area use Social network in the discharge of their duties. This was followed by the use of Search engines with a mean score of 1.55. Getting information from recreational center from friends and through interaction was popular in the study area. The table shows that extension workers with a mean score of 1.33 used the internet as recreational to obtained information and news that will be helpful to them. Those that used Websites ranks fourth with a mean score of 1.55. Online chatting gained prominence among the extension workers as a good number of them with mean score of 1.20 engaged in charting using social media such as facebook, whatsaap, and twitter among others. The use of the E-mail was also popular

among the respondents. The table shows that extension agents with a mean score (1.00) was versatile in the use of electronic mail as means of communication. The respondents were found to be frequently asked questions. Those who were found in this category were with the mean score of 0.78. Extension agents in the study area were also found to be using Internet Telephony. Those who were found in this category were found to have a mean score of 0.56. Furthermore, Professional Blog is rarely used as a means of information dissemination in the study area. The mean score of those who were using Professional Blog is 0.53. Lastly, online public access catalogue was the least used internet facilities in the study area. The mean score of extension agents using public access catalogue is 0.48.Comparing their individual means to grand mean (1.04), it shows that the frequency of internet usage among the extension workers in the study area is low because it is only in social network, search engines, recreational, websites and online chatting that internet usage was high in the discharge of their duties. Their internet usage was very low in other internet facilities. This could be attributed to low internet accessibility in the rural areas. This finding is similar to that of Chukwunonso, *et. al* (2012) who reported that lack of Internet access in most of the rural areas in Adamawa State.

Table 3: Distribution of the Respondents based on their Frequency of Internet Usage

Internet Services	Daily	Twice/ Week	Weekly	Monthly	Never	Mean score	Ranking
Social network site	40(37.0)	3(2.8)	2(1.9)	8(7.4)	55(50.9)	1.68	1st
Search engines	27(25.0)	13(12.0)	5(4.3)	10(9.3)	53(49.1)	1.55	2nd
Recreational	25(23.1)	10(9.3)	2(1.9)	10(9.3)	61(56.5)	1.33	3rd
Websites	24(22.2)	8(7.4)	7(6.5)	4(3.7)	65(60.2)	1.28	4th
Chatting on the net	28(25.9)	2(1.9)	3(2.8)	6(5.6)	69(63.9)	1.20	5th
E-mail	15(13.9)	7(6.5)	9(8.3)	9(8.3)	68(63.0)	1.00	6th
Frequently Asked Questions (FAQs)	4(3.7)	8(7.4)	17(15.4)	10(9.3)	69(63.9)	0.78	7th
Internet Telephony (Skype)	9(8.3)	3(2.8)	4(3.7)	8(7.4)	84(77.8)	0.56	8th
Professional Blog	5(4.6)	5(4.6)	7(6.5)	8(7.4)	83(76.9)	0.53	9th
Online Public Access Catalogue (OPAC)	4(3.7)	4(3.7)	9(8.3)	6(5.6)	85(78.7)	0.48	10th

Source: Field Survey, 2016; Figures in Parentheses are in Percentages

Table 4 below revealed that lack of access to internet network connectivity in rural areas was identified to be the topmost problem with mean score of 2.08. This implies that the extension agents will have to be travelling to towns and cities where they can access internet facilities. This will not only waste their time but also their meager income. Inadequate Internet facilities was ranked second, with a mean score of 1.8. This implies that the extension workers were in dare need of internet facilities and this must have affected their productivity and efficiency. Difficulty in Subscription ranked third with a mean score of 1.80. Internet subscription depends on network receptivity and this imposes limitation on the online process and the activities of the extension

workers in the study area. The next constraints in the ranking, is the slow speed of the internet server. This has a mean score of 1.78 and ranked fourth, internet server in the study areas were not performing well this may be due to the fact that they are very few as well as little or no proximity to the internet mast. Irregular power supply ranked fifth with a mean score of 1.76. Power supply in the study area is very challenging and hence hinders both commercial operator of internet service through cyber café and also frequent usage of individuals through hotspot. The alternative means to this is the individual ownership of power generating set which for economic reason could not be feasible by the respondents. Downloading of the Web Pages also was identified as constraints and this was ranked sixth with the mean score of 1.70. For the reasons aforementioned it is obvious that they can contribute to the download process. Search for Information on the latest research outcome was ranked seventh with a mean score of 1.59. In some cases, to supplement and authenticate the information received through other means such as radio and other communication methods. The extension agent has to come to farmers with the message of assurance and confident for the message to stand the test of time. Deficiency in internet skill was ranked last with the mean score of 1.49. The extension agents need down-to-earth training facilities that will update their knowledge and improve their skill on how to use internet to enhance their productivity.

Table 4:Distribution of respondents according to constraints to Internet Usage

Constraints	Highly Severe	Severe	Not severe	Mean score	Ranking
Irregular power supply	23(21.3)	36(33.3)	49(45.4)	1.76	5th
High cost of Subscription	27(25.0)	37(29.6)	49(45.4)	1.80	3rd
Inadequate Internet facilities	35(32.4)	17(15.7)	56(51.9)	1.81	2nd
Lack of skill in Internet usage	8(7.4)	37(34.3)	63(58.3)	1.49	8th
Slow internet server	33(30.6)	18(16.7)	57(52.8)	1.78	4th
Lack of internet access in rural areas	52(48.1)	13(12.0)	43(39.8)	2.08	1st
Long time to view/download Web Pages	21(19.4)	34(31.5)	53(49.1)	1.70	6th
Difficulty in finding Information	13(12.0)	38(35.2)	57(52.8)	1.59	7th

Source: Field Survey, 2016; Figures in Parentheses are in Percentages

Conclusion and Recommendation

Based on the findings of the study, it was concluded that internet technology usage and application among extension agents in the study area is at low level. Moreover, findings reveal that accessing information for personal development is the major purpose for using internet technology in the study area. Nevertheless, lack of internet access to network connectivity in rural areas, inadequate internet facilities, difficulty in subscription, slow internet server, irregular power supply and long time to view/download web pages are constraints to the use of internet

services. In accordance with the findings of this study the following were advanced as recommendations that can lead to improvement in the status-quo if adopted:

i. Government should formulate the policy that will enhance enabling working environment for the extension agent and such will enhance the capacity building and will enable them to access internet facility at the grass root level.
ii. The State ADPs should organize workshops, conferences and seminars to train the extension agents in the use of internet technology which will improve efficiency in their work.
iii. The states' ADPs under study should incorporate or strengthen the use of internet for information dissemination to farmers. Extension organizations should design websites to enable them have link with others.
iv. Extension agents should be encouraged to access and utilize internet services by supporting them with financial and material resources. This can be actualized by providing them with credit grant or the equipment by government, private sector, non-governmental organizations and other well-meaning Nigerians.

References

Adamu, I.A. (2000). The Survey of Katsina State in: Nigeria, A people United a Future Assured.InMamman et al. (Eds.), Federal *Ministry of Information*. Vol. 2: Pp. 291-302.

Adekoye, A.E. (2006). Use of ICTs among people in Oyo State, Nigeria. *Research Journal of Applied Sciences*.*1* (4), Pp. 101-105.

Adetunji, T. A. (2013). Internet Use Pattern and Application for Knowledge Generation and Dissemination by Agricultural Researchers in South West Nigeria. A Dissertation submitted to the Postgraduate School, University of Ibadan, Ibadan, Nigeria, in partial fulfillment of the requirements for the Award of the Degree of Doctor of Philosophy in Agricultural Extension.

Chukwunonso, F., Abubakar, M., and Obidi, N. (2012). The Adoption of Information and Communication Technology (ICT) in Agriculture in Adamawa State, Nigeria. *African Journal of Agricultural Research and Development*. *5* (3), Pp. 79-85.

Ezeh, A. N. (2013). Access and Application of Information and Communication Technology (ICT) Among Farming Households of South East Nigeria. *Agriculture and Biology Journal of North America*. *4*(6),Pp. 605-616.

Mustapha, Y., Biwi, E.R., and Manu, I. (2013). InOmotesho, O.A., Adewumi, M.O., Ogunlade, I., Fawole, B.O., Babatunde, R.O., Ayinde, O.E., and Muhammad-lawal, A. (Eds.),Agricultural Development: A Panacea to Sustainable Development and Livelihoods in Nigeria (A Review). Nigerian Agriculture and Economic Development: The Way Forward. *Proceeding of the Farm Management Association of Nigeria (FAMAN)*, Pp.12-16.

(NPC) (2006). Analysis of Nigerian 2006 census results. National Population Commission (NPC), Abuja, Nigeria

Omotayo, O. M. (2005). ICT and Agricultural Extension: emerging issues in transferring agricultural technology in Developing Countries. In: Adedoyin S.F (Ed) *Agricultural Extension in Nigeria, AESON*, Pp.145-58.

Omotosho, K.F., Ogunlade, I.O., and Muhammad, L. (2012). Assessment of Access to Information and Communication Technology among Agricultural Extension Officers in Kwara State, Nigeria. *Asian Journal of Agriculture and Rural Development*. *2* (2), Pp. 220-225.

Umar, S. and Musa, M. W. (2015). Determinants of the use of Indigenous Coping Strategies against Climate Change among Smallholder Farmers in Katsina State, Nigeria. *Journal of Agriculture and Ecology Research International*. 3(1), Pp. 24-32.