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ASSESSMENT OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs) USE AMONG EXTENSION AGENTS IN IMO STATE, NIGERIA

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ABSTRACT

This study assessed the use of Information and Communication Technologies among extension agents in Imo State. Data were collected from 41 respondent randomly selected with the use of questionnaire and analyzed using frequency count, percentages, means and Pearson Product Moment Correlation for hypothesis testing. Majority (70.7%), (56.1%), and (53.7%) of Extension agents were male, between 41 and 50 years and above 10 years working experience respectively. GSM (mean =3.80), radio (mean =3.71) and television (mean = 3.37) were used by extension agents. There is significant relationship between extension agents' access and use of ICTs (r=0.663>P.0.05), there was no significant relationship between extension agents socioeconomic characteristics and ICTs use and between ICTs use and competence. The major constraints faced by extension agents are work conditions (m=4.00) and lack of support from government (m=3.83). The study concludes that any effort in improving ICT use for extension delivery should first address the issue of extension workers awareness, competence and access. It is recommended that Agricultural Development Programme (ADP) should provide training for extension agents on the ICTs they scarcely use due to their lack of knowledge of its use.

Keywords: Extension agents; ICT awareness and use

INTRODUCTION

Winrock (2003) defines Information and Communication Technologies (ICTs) as the combination of hardware, software, and the means of production that enable the exchange, processing and management of Information and Knowledge. According to Noor Sharifah (2006), ICT includes a number of components including skills of accessing, recording, arranging, manipulating and presenting data or information using tools and software. It also includes Communication Technology (CT) which consists of telecommunication tools used to disseminate and access information. Literacy technology based on information in printed form such as book, journal and newspaper is also considered as ICT. Besides these two, intermediate technology based on analog data or information such as electromagnetic waves such as radio, television and telephones

(including Mobile phone) are also considered as ICTs. Adesope (2005) said that Usenet are discussion group classified by any of the best number of topics, each new site is locally run and is organized by news administered collectively.

There is a correlation between agricultural information availability and the functional components of agricultural system i.e. production, supply, credit, marketing, research, regulation, and technology adoption, all of which has great promise to increase agricultural production. By improving the linkage between farmers and research, the use of ICTs by agricultural extension agents will facilitate information sourcing and dissemination, check timeliness of farmers' access to agricultural information and serve as an approach towards the transformation of rural and agricultural economy in Nigeria. This can be achieved through the application of ICTs in agriculture and rural development as Munyua (2000) asserted that ICTs have played major role diffusing information to rural communities, and showed even more unexpected potentials. Omotayo (2005) observed that the use of ICTs became necessary in view of user demand for effective and appropriate extension service delivery, dwindling government budgets, advances in telecommunication technology worldwide among others. Asiabaka (2002) opined that the importance of using computers in agriculture extension include time saving, and Record keeping. Norsida (2007) observed that even though the general perception of people towards agriculture is negative, they still believe that agriculture has the ability to offer a big income if it is operated in the right way.

Rural development demands that people can gain access to information they need in the form they can understand. Without addressing this important need, other developing efforts would fail to achieve their potential imparts. We need to get better delivery system which delivers real value to those whom we expect to use them in the form and value understandable to them. (Andrew, 2005). Agricultural extension agents have the mandate to in Nigeria, communicate proven technologies to farmer, whereas, the use of ICT is still very low yet Omotayo (2005) observed that ICTs are not new in agricultural extension and rural development. This study accessed ICTs use among agricultural extension agents in Owerri Zone of Imo State, Nigeria Agricultural Development Programme.

MATERIALS AND METHODS

Study Area

The study was conducted in Imo State, Nigeria. Imo state lies within Latitude 4^0 45^1N and 7^0 15^1N, and longitude $6^0 50^1$E and $7^0 25^1$E with an area of about 5,100km^2. The state is bounded in the East, West, North and South by Abia state, Anambra state, Ebonyi state and Rivers state respectively. The state has two dominant seasons-rainy and dry seasons. Rainy season is between April and October while the dry season starts from November to early March, though early rain starts March. The state is made up of twenty-seven (27) Local Government Areas. The major farming tasks practiced by the farm operators in the study area are crop science and animal husbandry while fishery and agro-forestry practices are carried out at micro level. The major crops grown are cassava, yam and maize.

Data Collection and Analysis

The State Agricultural Development Programme (ADP) consist of three zones namely Owerri, Orlu and Okigwe zones. Owerri zone was purposively selected for the study because of the higher number of extension genets. There are 18 extension block on Local Government Area (LGA) basis with 17 extension agents and 139 circles on cell/village basis with 24 extension agents. All the extension agents (that is, 41) in the zone were sampled for the study. Primary data were collected through the aid of a structured questionnaire valuated by expert judgment. The reliability of the instrument was determined using a test – retest method. The independent variables such as gender, age, marital status, education working experience were measured using frequency counts and percentage. ICT use was measured in a 4 – point rating scale of use very frequently coded 4 use frequently coded 3, rarely use coded 2, and never used coded 1. Extension agents access to ICTs was measured in a 4 point rating of have access always coded 4 have access occasionally coded 3, rarely have accesss coded 2, and no access coded 1. A mean score of 2.50 and above was taken to mean that a particular ICT was regularly used, and respondent have access to it respectively. Pearson product movement correlation (PPMC) was used for hypotheses testing.

RESULTS AND DISCUSSION

Socio – Economic Characteristics of Extension Agents

Table 1 reveals that majority (70.7%) of the extension agents were males. This valuates the finding of Bhatt (1998) that there are move males than female extension workers in extension organizations. The extension agents had a mean age of 43 years with most (56.10%) between age bracket of 41 and 50 years which implies that the Extension agents are still in their active ages. This result corroborates the finding of Patrick (2000) that majorly of extension workers are between 41 and 45 years. Majority (85.4%) of the extension agents were married, an indication that marriage is a recognized institution in the study area, also the study revealed that majority (82.9%) were diploma /OND holders this is expected on OND in agriculture is the minimum qualification for employment of extension agents in ADPs in Nigeria. Most (53.7%) of the Extension agents have working experience of above 10 years, also a mean working experience on 10 years and indication that they a well experienced in the extension work. Due to their years in service, the extension agents are likely to appreciate ICTs for extension which may make the work more interesting to them.

Table 1: Distribution of the socio-economic characteristics of Extension agents

Variables	Frequency	Percentage	Mean
Gender			
Male	29	70.7	
Female	12	29.3	
Age (years)			
31-40	13	31.7	
41-50	23	56.1	43
Above 50	5	12.2	
Marital Status			
Married	35	85.4	
Single	3	7.3	
Separated	3	7.3	
Education			
NCE/OND	34	82.4	
HND/BSC	7	17.1	
Working Experience			
6-10	19	46.3	
Above 10	22	53.7	10

Source: Field Survey 2010.

Extension Agents Access to ICTs

Table 2 reveals that GSM (mean = 3.98), radio (mean = 3.90), television (mean = 3.66) video CD (mean = 3.07), video (mean = 2.88), educational slide (mean = 2.70) and multiply projector (mean = 2.64) are the ICTs the Extension agents have regular access to for extension work, whereas they have no access to other ICTs, especially computer (m=2.04) and internet (m=2.09). This result however corroborates muddy and Suttan (1999) that limited access to computers and internet are the basic problems faced by agents in Africa is the further observed that ratio of 1:900 for Africans outside South Africa have access to internet compared to 1:38 in the rest of the world.

The implication is that even when extension agents have the interest and zeal to communicate proven technologies to farmers, they will be by lack of access to the necessary ICTs.

Extension Agents level of ICTs Use

Table 2 revealed that GSM (mean = 3.80) radio (mean = 3.71) and television (mean = 3.37) were the most regularly used ICTs for extension work, followed by video CD (mean = 2.83), video (mean = 2.66). it implies that hence this research is compelled to corroborate the findings of Hedjazi (2006) that the extension to which extension specialist use print materials was higher than their use of ICTS.

Table 2: Mean distribution of the extension agents by their ICTs access and use

ICTs	Access		Use	
	Mean	SD	Mean	SD
Television	3.66*	0.758	3.37*	0.698
Radio	3.90*	0.807	3.71*	0.512
Internet	2.09	0.432	1.85	0.654
GSM	3.98*	0824	3.80*	0.459
Computer	2.04	0.422	1.88	0.557
Video	2.88*	0.596	25.12	0.480
Video CD	3.07*	0.634	2.44	0.480
Multiply Projector	2.64*	0.547	2.49	0.506
Educational Slides	2.70*	0.560	1.88	0.600
Electronic Charts/Posters	2.04	0.735	1.51	0.597
Fax machine	1.63	0.338	1.41	0.597
Chat room	1.53	0.316	1.39	0.737
Use Net	1.50	0.310	1.39	0.582
Search engine	1.51	0.312	1.51	0.312

Source: Field Survey, 2010 * Have Access *Use

Extension Agents' ICTs Competences and Awareness

The results (Table 3) shows that majority (82.9%) of the Extension agents are not aware of use net this might be as a result of it's level of availability. Also majority (95.1) of extension agents were aware of computers between awareness and competence, computer, majority (65.8%) are not competent in the use of computer, most (48.7) are not competent in the use of multi play projector, though majority (90.2%) are away it can be used for extension work. All (100.0%) of the Extension agents are aware and competent in the use of television, radio, GSM, video and video CD. This is expected as these ICTs also find non – agricultural uses in the homes by Extension agents. Apart from these used in homes, most (51.2%) are competent in use of educational slides.

Table 3: Distribution of Extension agents by Awareness and competence in ICTs use

ICTs	Awareness			Competence		
	Frequency*	Percentage[(A)*]		Frequency*	Percentage [(B)]	
Television	41	100.0	(00.0)	41	100.0	(00.0)
Radio	41	100.0	(00.0)	41	100.0	(00.0)
Internet	39	95.1	(4.9)	12	29.3	(65.8)
GSM	41	100.0	(0.00)	41	100.0	(00.0)
Computer	39	95.1	(4.9)	19	46.3	
Video	41	100.0	(00.0)	41	100.0	(00.0)
Video CD	41	100.0	(00.0)	41	100.0	(00.0)
Projector	37	90.2	(9.8)	17	41.5	(48.7)
Educational slide	36	87.8	(12.2)	21	51.2	(36.6)
Electronic chart / posters	31	75.6	(24.4)	16	39.0	(36.6)
Fax machine	28	68.3	(37.9)	18	43.9	(24.4)
Chat room	19	46.6	(53.7)	07	17.1	(36.6)
Use net	07	17.1	(82.9)	05	12.1	(05.0)
Search Engine	18	43.9	(56.1)	11	26.8	(17.1)

Sources: few survey 2010 * Multiple responses A* percentage deficiency in awareness and B* percentage deficiency in competence.

Constraints to ICT use by Extension Agents

Table 4 shows some of the constraints against the use of ICTs in extension delivery services. Findings in Table 6 shows that work condition (e.g Unavailability of telephones, computer, electricity supply) (mean = 4.00), lack of support from government (mean = 3.83, financial constraints (mean = 3.71), job in-satisfaction (mean = 3.71). This finding is similar to the findings of Mundy and Sultan (1999) reported that limited and very high cost of telephone services either by landlines or GSM are some of the major constraints to ICTs use in Agricultural extension in developing countries.

Table 4: distribution of Extension Agents' based on the Constraints to ICTs use

Constraints	Mean	Standard deviation
Work conditions	4.00*	0.00
Lack of support from government	3.83*	0.49
Financial constraints	3.71*	0.46
Job satisfaction	3.71*	0.51
Mismanagements of funds and facilities	3.49*	0.71
Cost of acquisition	3.24*	0.66
Level of awareness	2.20	0.84
Technical know how	1.80	0.67

Source: field Survey 2010 *Serious constraints

CONCLUSION

This study concludes that the regular ICTs used for extension delivery in Owerri zone of Imo State ADP are radio, TV, GSM, video and CDs, while internet, computer, multimedia projector, educational slides, fax machine, electronic chat/ poster, search engines, chat room and use net are not used. ICTs competences of extension agents are in these that also have personal and home use. Any effort in improving ICT use for extension delivery should first address the issue of extension workers awareness, competences and access. The Ministry of Agriculture and Imo State Agricultural Development Progrmme (IMADP) should organize regular training for extension workers on ICT competence. Extension agents should be encouraged to use ICTs in the forth nightly training in order to improve their competence.

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