AVAILABILITY AND USE OF MODERN INFORMATION AND COMMUNICATION TECHNOLOGIES AMONG FARMERS IN ORUMBA SOUTH LGA OF ANAMBRA STATE, NIGERIA

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ABSTRACT

The study ascertained the availability and use of telecommunication/computer information and communication technologies among farmers in Orumba South L.G.A of Anambra State, Nigeria. The objectives of the study were to describe the demographic characteristics of the farmers in the study area, identify Information and Communication Technologies (ICTs) in telecommunication/computer available to the farmers and ascertain the use of ICTs to contact and non-contact farmers in the study area. Data for the study were generated from structured questionnaire. A sample size of 114 farmers made up of 36 contact and 78 non-contact farmers were selected using stratified random sampling technique. Data analysis were by the use of descriptive (frequencies, percentages and mean) and inferential (t-test) statistical tools. The result showed that majority (54.39%) of the farmers are within the active and innovative age category. Majority (87.72%) are married and have one form of education or another. Their farm holdings are small-scaled and majority (99%) of the farmers are experienced while 68.42% are non-contact farmer. Availability of telephone /GSM rating is 57% while computer is 52.6%. Both contact and non-contact farmers make more use of telephone/GSM than other items. The test of the hypothesis showed that calculated t-value of 2.64 is greater than the tabulated t-value of 1.96 at 0.05 level of significance and 112 degree of freedom. Thus the null hypothesis that there is no significant difference in the mean responses of the contact and non-contact farmers in the use of ICT facilities in the study area is rejected. Therefore, the contact farmers differed significantly from the non-contact farmers in their mean responses with respect to the use of ICT facilities for extension purposes. It was recommended that both contact and non-contact farmers should be exposed to the use of other telecommunication/computer other than telephone/GSM and computer.

Key words: modern information and communication technologies

INTRODUCTION

Extension and Rural Development Programmes form key development strategy for countries like Nigeria with a large and broad unsophisticated agricultural base. Reports show that Nigeria has tried several strategies with a verdict of failure on them (Ibezim *et al.,* 2008). The extension system has been weakened and ineffective due to inadequate funding, ineffective motivation of agricultural researchers and extension personnel, lack of linkage among research, extension agents and farmers, irregular provision of farm inputs etc (Nwosu, 2008). Adedoyin (2004) opined that it is widely known and recognized that sustained high level of agricultural production and food self-sufficiency cannot be attained without effective extension services. For rural and agricultural transformation to take place, an effective strategy of transferring improved

technological innovations to the ruralites must be put in place. The problems expressed above are being addressed by tapping on the challenges which are provided through the Information Communication Technology.

Wikipedia (2000) observed that attempts to revive agriculture have been largely unsuccessful due to poor media coverage of agricultural activities and pseudo-legislative backing of agricultural reform programmes. Knowledge and information can enable farmers improve their environment and agricultural activities and create sustainable income and employment opportunities. The mass media constitute a source of knowledge and perhaps have proved to be the best in disseminating agricultural information to the farmers and the general public because of the advantage of reaching a very wide audience (Obinne, 1994). Hornik (1988) called it a low-cost loudspeaker because it brings the voice of the message source to the reach of a large and scattered audience simultaneously and at a relatively low cost. Wikipedia (2000) observed that agricultural news is a surprisingly neglected topic in the media when compared with other issues such as politics, business, sports and adverts. In the national dailies, he observed that most of the agricultural reports address one type of controversy or the other and sometimes issue relating to market forces.

The Training and Visit (T and V) system of agricultural extension was expected to facilitate the dissemination of agricultural information in Nigeria but as Obinne (1994) noted was faced with the challenge of inadequate funding, while Wikipedia (2000) implicated low ratio of extension worker to farmers and lack of effective and efficient communication between researchers, extension agents and the farmers. It is against this backdrop that the study focused on the availability and use of telecommunication/computer information and communication technologies among farmers in Oruba South Local Government Area of Anambra State, Nigeria.

Objectives of the study were to:
- describe the demographic characteristics of the farmers in the study area
- identify information and communication technologies in telecommunication/computer (computer, telephone/global system and mobile, e-mail, intercom, fax, internet and satellite dish) available to the farmers
- ascertain the use of available ICTs to contact and non-contact farmers in the study area.

Hypothesis
The mean responses of contact and non-contact farmers on use of ICT facilities in Orumba South Local Government Area do not differ significantly.

METHODOLOGY
The study was carried out in Orumba South Local Government Area of Anambra State. The area was selected for the study because the people are predominantly farmers. The sampling technique employed in selecting the farmers was stratified random sampling. The list of all the registered farmers was obtained from the Agricultural Development Programme (ADP) in the LGA formed the sample frame.

The registered farmers were 151 made up of 48 contact and 103 non-contact farmers. The 48 contact farmers were made up of 36 males and 12 females while the 103 non-contact farmers were made up of 48 males and 55 females. In selecting the sample for the contact farmers, 75% of the entire contact farmers were used. This gave 36 farmers of which 75% of these numbers were males while 25% were females. Thus out of the 36 farmers, 27 males and 9 female were randomly selected. For the non-contact farmers, 75% was also employed in the selection. This

amounted to 78 farmers of which 60% were female and 32% males respectively. Thus, a total of 59 males and 55 females were used. In all, 114 farmers formed the sample size of the study. Data for the study were collected with pretested structured questionnaire. The data generated were analyzed using descriptive (frequency distribution, percentages and means) and inferential statistics (t-test).

RESULTS AND DISCUSSION
Demographic characteristics of the farmers
Table 1: Distribution of farmers according to demographic characteristics

VARIABLES	FREQUENCY	PERCENTAGES
Age:		
20-29	18	15.79
30-39	22	19.30
40-49	40	35.09
50-59	28	24.56
60-69	6	5.26
Total	114	100.00
Gender:		
Male	59	51.75
Female	55	48.25
Total	114	100.00
Level of Education:		
No formal education	12	10.52
Primary education	55	48.25
Secondary education	31	27.19
Tertiary education	16	14.04
Total	114	100.00
Farm size(hec):		
0.5-1.0	68	59.65
1.1-2.0	37	32.46
2.1-3.0	9	7.89
3.1-4.0	0	0.00
Total	114	100.00
Farming experience (years):		
1-5	5	4.39
6-10	9	7.89
11-15	11	9.65
16-20	30	26.32
21-25	31	27.19
26-30	28	24.56
Total	114	100.00
Contact and non-contact farmers:		
Contact farmers	36	31.58
Non-contact farmer	78	68.42
Total	114	100.00

Source: Field Survey, 2008

Table 1 presented data on selected demographic characteristics of respondents. Result indicates that 54.39 of the respondents fell within 30-49 years. This implies that respondents are within

active and innovative age category. This quality is expected to influence their quest for innovative source of information (Aderinto *et al.,* 2007). Result further indicates that majority (59%) of the respondents are males that dominated extension outfit. It is also observed that majority (87.72%) of the respondents are married. Family responsibilities may influence the use of ICTs by the respondents that are married. Majority (89.48%) of the respondents acquired one form of education or another while 10.52% have no formal education. The level of education attained by most of the respondents (primary and secondary) is not significant as to guarantee any noticeable impact in their adoption of ICTs (Orikpe, 2008). Okojie (2002) observed that the more educated a farmer is the better he is placed to appreciate the potentials of ICTs. Farm size plays an important role in farm success because it reflects the availability of capital, access to credit and even management ability. Table 1 shows that majority (59.65%) of the respondents are small holders of between 0.5 to 1.0 hectares of farm land. This is in line with Onumadu (2009) classification of farmers' holding into small, 0.5-3.0 hectare, medium 3.5-4.0 hectares and large 4.5 hectares and above. The smallness of their farm holding might motivate them to seek for ICTs in order to increase their farm output.

Most of the respondents are experienced as about 99% of them have over five years farming experience. Nwaru (2004) observed that the number of years a farmer spent in farming business may give an indication of the practical knowledge he has acquired. In other words, the experience gained through this long period of time might enable respondents to make profitable decisions and put him in a much better position to accept innovations.

Majority (68.42%) of the farmers are non-contact farmers while 31.58% are contact farmers. This indicates that the number of contact farmers in the area is not sufficient to bring about noticeable change in agricultural information dissemination. Thus, World Bank (2000) recommended that extension should forge new links and create network for sharing knowledge and experience, hence the need for application of information and communication technologies in information dissemination to farmers

Table 2: Responses on availability of ICT facilities to farmers in Orumba South L.G.A

ICT Facilities	Yes (%)	No (%)
Computer	60 (52.6)	54 (47.4)
Telephone/GSM	65 (57.0)	49 (43.0)
E-mail	3 (2.6)	111 (97.4)
Intercom	-(-)	114 (100)
Fax	-(-)	114 (100)
Internet	2 (1.8)	112 (98.2)
Satellite dish	12 (10.5)	102 (89.5)

Source: field Survey, 2008; Figures in parentheses are percentages

Table 2 presents the frequency and percentage of the information and communication technology facilities available to farmers in Orumba South Local Government Area. Telephone/GSM percentage rating is 57.0 and computer 52.6 are the facilities accepted by farmers as being available in the area. By low parentage scores of other items, they were considered by the farmers as not being available in the study area. This is corroborated by Chadwick (2003) who observed that agricultural development in Nigeria and other developing countries have been hampered by low level of information exchange arising from inadequate ICT facilities.

Table 3: Mean Rating and Standard Deviations of use of ICT Facilities by Contact and non-contact farmers in Orumba South LGA

ICT Facilities	CONTACT		NON-CONTACT	
	Mean	SD	Mean	SD
Computer	1.61	0.77	1.02	0.16
Telephone/GSM	2.39	1.23	2.05	0.16
E-mail	1.00	0.00	1.00	0.99
Intercom	1.00	0.00	1.00	0.00
Fax	1.00	0.00	1.00	0.00
Internet	1.25	0.55	1.14	0.39
Satellite dish	1.31	0.56	1.12	0.32
Pooled mean and SD	**1.37**	**0.50**	**1.19**	**0.38**

Source: Field Survey, 2008

Table 3 presents the mean and standard deviation on the use of telecommunication/computer technology by the contact and non-contact farmers. All the items revealed low mean scores and therefore are not adequately used. However, there is within mean variation (increase) for telephone/GSM for both contact and non-contact farmers. This indicated that both categories of farmers make more use of telephone/GSM than other item. This contradicted Seepersad (2003) report that cell phone have not been used in an organized way by agricultural organizations.
According to Orikpe (2008) disseminating important agricultural information to farmers is an integral part of agricultural development strategy for years and if farmers do not make effective use of these telecommunication/computer facilities for extension purposes, they may not receive the information disseminated through them and may not be able to send the necessary feedback.
Hypothesis: The mean responses of contact and non-contact farmers on use of ICT facilities in Orumba South LGA do not differ significantly.

Table 4: T-test for Difference in the mean Response of Contact and Non-contact Farmers on use of ICTs

Groups	mean	SD	N	df	t-cal	t-tab	Inference
Contact	1.54	0.54	36				
				112	2.64	1.96	Reject null hypothesis
Non-contact	1.25	0.38	78				

Source: Field Survey, 2008

Table 4 shows that calculated t-value of 2.64 is greater than the tabulated t-value of 1.96 at 0.05 level of significance and 112 degree of freedom. The null hypothesis of no significant difference in the mean responses of the contact and non-contact farmers in the use of ICT facilities in Orumba South LGA was therefore rejected. Hence the contact farmers differed significantly from the non-contact farmers in their mean responses with respect to the use of ICT facilities for extension purposes. The table shows a grand mean of 1.54 in favour of the contact farmers as against 1.25 for the non-contact farmers. This might stem from the fact that the contact farmers are often more in contact with extension agents. More so, their selection as contact farmers is often based on their leadership qualities, capabilities and eagerness to learn. It has to be pointed

out that even when the ICTs are available, their use depend on the capability of the users. This finding supports Munyua (2000) who observed that communication between extension officers and contact farmers has been greatly enhanced by the presence of cellular telephones.

CONCLUSION
Based on the empirical evidence of this study, the following conclusion could be drawn:

- Majority of the respondents fall within active and innovative age category. Majority are male while majority too are married. Many acquired one form of education while farm size holdings range from small, medium and large scales. Most of the farmers are experienced in farming while majority are non-contact farmers.
- Telephone/GSM and computer are ICT facilities available to farmers in the study area and both contact and non-contact farmers make use of them.
- There is no significant difference in the mean responses of the contact and non-contact farmers in the use of ICT facilities in Orumba South LGA was rejected.

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