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### Using Information and Communication Technology in Promoting Access to Information Needs of Poultry Farmers in Nigeria: A Case Study of Michael Okpara University of Agriculture, Umudike

**Cajetan O. Onyeneke PhD.**  
[cajetanonyeneke@gmail.com](mailto:cajetanonyeneke@gmail.com),  
[cajeonyeneke@imsu.edu.ng](mailto:cajeonyeneke@imsu.edu.ng)  
e-resources Librarian  
Imo State University, Owerri

**Blessing Solomon-Uwakwe PhD.**  
[ihechisol@yahoo.com](mailto:ihechisol@yahoo.com)  
Readers Services Librarian  
Imo State University, Owerri.

#### **Abstract**

*This paper discusses how Information and Communication Technologies (ICTs) can enhance access to agricultural information needs for poultry farming in Nigeria. Specifically, the study assesses the roles played by the library of Michael Okpara University of Agriculture, Umudike, Umuahia, Nigeria in meeting the information needs of poultry farmers with the aid of ICTs. Various techniques were adopted in data collection for this study. Primary data was collected through interviews and questionnaire. Interview was used to collect data from farmers in the communities surrounding the University. A total of 26 randomly selected poultry farmers were sampled and interviewed. Questionnaire was used to collect data from the University library staff. Observation technique was used to collect data at the tele-centre. For the data analysis, simple descriptive statistics such as frequencies, percentages and mean scores were used. Findings of the study show that computers / internet, radio, television, and mobile phones have potentials of meeting the information needs of poultry farmers in Nigeria if they are used effectively. Findings show further that radio and television adverts and jingles are most suitable for all categories of poultry farmers in their information sourcing. Mobile phones and television are the most preferred communication channels amongst the farmers. Some ICT applications such as short messaging services and calls were also used by the farmers. The researcher recommends: (i) provision of adequate ICT facilities to create more platforms for poultry farmers to source and satisfy their information needs; (ii) the tele-centre at the University should be expanded and more facilities provided to accommodate more farmers, iii) the University should increase their internet bandwidth for better and improved internet connectivity.*

**Keywords:** Information and Communication Technology, Access, Information Needs, Poultry

## 1.1 Introduction

In Africa, agriculture provides a livelihood for about seventy-five percent of the people who live in the rural areas. Ironically, the rural areas in Africa have the largest concentration of poverty and food insecurity. One of the causes of the low incomes in the rural Africa is low agricultural productivity. Lack of adequate information and non application of technology in agriculture have been variously given as part of the reasons for this low productivity in African agriculture.

There are noticeable transformations and developments brought about by the emergence of Information and Communication Technology (ICT) in virtually every sphere of life in Nigeria, and the agriculture sector is not left out. According to Fawole (2006), ICTs play important role in bringing about sustainable agricultural development when used in the appropriate manner. He insists that it can help in the gathering, storage, retrieval and dissemination of wide range of information needed by farmers. It can also bring new information services to rural farmers where they will have much greater control over current information gateways.

Also, Ozowa (1995) maintains that it is not debatable that agriculture is the main stay of most African economies, and it plays pivotal role in the overall development of the continent. The relationship between agriculture and development in the sub-Saharan Africa cannot be over-emphasized. The Nigerian economy was previously almost dependent on agriculture for many years before oil was discovered. Recently, the Nigerian agricultural sector has witnessed tremendous transformations with the introduction of ICTs in its operations and services. The use of ICT stands out as the most recent strategy to revolutionizing agricultural activities in Nigeria.

## 1.2 Objectives of the Study

The general objective of this study is to determine the influence of ICTs in meeting the information needs of poultry farmers in Nigeria using Michael Okpara University of Agriculture, Umudike, Umuahia, Nigeria as a case study. The specific objectives are to:

1. Examine the poultry farmers' exposure to different Information and Communication Technologies.
2. Determine the relationship between demographic characteristics of the poultry farmers and use of ICTs in accessing information.
3. Identify the ICT channels used by the poultry farmers in accessing information.
4. Explore the level of satisfaction of the poultry farmers in relation to meeting their information needs.
5. Identify the challenges faced by the poultry farmers in the use of ICTs for information search.

## 2.1 Review of Related Literature

Information and Communication Technologies can support productive activities of agriculture and if deployed effectively could become transformational factors. Nwagwu and Soremi (2015) posit that in increasing access and exchange of information, ICTs offer the potential to increase efficiency, productivity, competitiveness and growth in various aspects of agricultural sector. According to Mtega and Msungu (2013), ICTs facilitate the accessibility of agricultural information services and thus is a channel necessary for building local capabilities, integrating new and traditional knowledge and increases profit from agriculture. Asenso-Okyere and Mekonnen (2012) maintain that the role of ICTs in supporting agricultural production system has been identified to play vital role in the transfer of technology and in sharing

modern agricultural practices with the farmers. However, Jain, Alka and Usha (2010) have found out that many farmers are not completely utilizing the full potential of the ICT.

A major task in agricultural development is the transfer of improved technologies to farmers. The utilization of ICTs in sourcing information about poultry farming in Nigeria is a vital necessity. According to Olaniyi (2013), one of the ways to bring about improvement in poultry production in Nigeria is the provision of right information through appropriate channel that is accessible to farmers whom such information is meant for. The poultry business in Nigeria can leverage on the potentials of availability of ICTs for optimum poultry production. For this to take place there is need to determine the extent to which poultry farmers have access and utilize ICTs for development. Ezech (2013) amplifies Nigerian government's recognition of the importance of ICT in agricultural activities. He emphasizes that government established liberalization and privatization policies to encourage private sector participation and attraction of foreign investment, which consequently reduces the price of computers and other ICT equipments thereby making them more accessible.

### 3.1 Research Methodology

The survey research design was adopted for this study. This involved a systematic collection of information from selected poultry farmers and staff of Michael Okpara University of Agriculture, Umudike(MOUAU). Umudike and members of the University Community constituted the population of this study. A total of twenty-six (26) randomly selected poultry farmers and twenty (20) staff of the University library constituted the sample for this study. The researchers adopted various techniques in data collection. Interviews and questionnaire were used for primary data collection.

Interview was used to collect data from the poultry farmers while questionnaire was used to collect data from the University library staff. Also observation technique was used to collect data in this study. Data collected from the interviews conducted and the questionnaire distributed were analyzed using simple descriptive statistics involving frequencies and percentages.

### 4.1 Results and Discussion of Findings

The level of ICT awareness among poultry farmers was examined. This was done by asking the respondents to orally respond to the question seeking to ascertain their awareness and exposure to different categories of ICT. Their responses are shown in table 1.

**Table 1: Awareness and exposure to ICT facilities**

ICT Facility	Frequency	Percentage %
Radio	26	100.0
Television	24	92.3
Mobile phones	23	88.4
Computers/Internet	14	53.8

N=26

**Source: Field survey data.**

Table 1 shows a very high percentage of the respondents (100%) admitting of awareness and exposure to radio set. In the same vein, majority of the respondents (92.3%) reported awareness and exposure to television set just as 23 (88.4%) respondents were aware and have been using mobile phones for information search. A relatively half the number of the respondents reported being aware and exposed to computers and internet for their information search.

The relationship between demographic characteristics of the poultry farmers and their use of ICTs in accessing information was determined. The researchers gathered data from the respondents regarding their age, gender, education, social status and length of farming experience. The data is shown in table 2.

**Table 2: Demographic characteristics of the farmers**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
	7	27.0
41 – 50 Years	10	38.4
51 and Above	9	34.6
<b>Total</b>	<b>26</b>	<b>100</b>
<b>Gender</b>		
Male	24	92.3
Female	2	7.7
<b>Total</b>	<b>26</b>	<b>100</b>
<b>Education</b>		
Non-Formal Education	4	15.4
Formal	22	84.6
Informal Education	-	-
<b>Total</b>	<b>26</b>	<b>100</b>
<b>Membership of Associations/Organizations</b>		
Farmers' club	6	23.0
Cooperative societies	21	80.7
FADAMA project	18	69.2
<b>Total</b>	<b>45</b>	<b>152.9</b>
<b>Years of farming experience</b>		
1 – 5 years	2	7.7
6 – 10 years	14	53.9
Above 10 years	10	38.4
<b>Total</b>	<b>26</b>	<b>100</b>

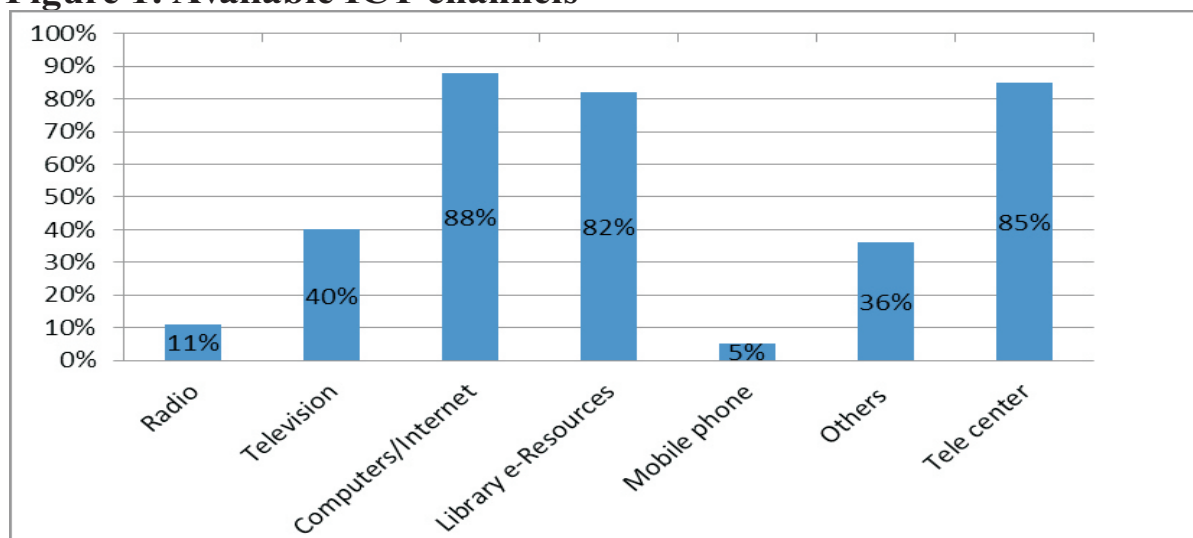
*Source: Field Survey Data 2016*

Table 2 shows that age distribution of the sample was skewed towards the youthful age group of 40 years and above indicating a relatively high proportion of middle aged farmers in the community. Majority (92.3%) of the sample are male also indicating high number of energetic and vibrant farmers. About their education, a high proportion (84.6%) of them had some form of formal education ranging from post-primary to tertiary level of education. This suggests that the respondents are literate. The table also shows that the farmers belong to associations and groups that are engaged in promoting the interest of farmers in the community. Majority (80.7%) are members of farmers cooperative

society, 18 (69.2%) are involved in the government FADAMA project, while only 6 (23%) belong to farmers' club. This implies that majority of the farmers are engaged in activities aimed at getting better chance of improving their farming practices and productivity.

There was attempt at identifying the ICT channels used by the farmers in meeting their information needs. The researchers distributed questionnaire to library staff of Michael Okpara University of Agriculture, Umudike, Umuahia to gather data on availability and usability of ICT facilities in the University by the farmers. Findings on this are shown in figure 1.

**Figure 1: Available ICT channels**



Source: Field survey data 2016

Figure 1, shows that among the ICT channels available and used by the farmers, computer/internet was ranked the highest with 88%. Following it is tele-centre with 85%. Another highly ranked channel is library e-resources (82%). Radio and mobile phones ranked very low with 11% and 5% respectively. This indicates that these two channels are scarcely provided in the library. Television is another channel provided at the

library which is moderately used by the farmers as indicated by 40% respondents. However, there are some other channels mentioned by the respondents which do not fall within the parameters of ICT.

There are challenges associated with the use of ICTs in accessing information. Some of these challenges are peculiar to developing countries, which Nigeria belongs to. The researchers sought to find out these

**Table 3: Challenges relating to use of ICTs**

Challenges	Frequency	Percentage %
Irregular power supply	18	90
Low internet bandwidth	19	95
Few agricultural programmes aired on radio/television	12	60
Poor radio/television signals	8	40
High tariff by GSM services providers	13	65
Inadequate computer terminals	16	80
High cost of acquiring the gadgets	7	35

N=20

Source: Field Survey Data 2016



As shown in table 3, low internet bandwidth and irregular power supply remain the two highest impediments to using ICTs in accessing information by the farmers. This was the perception of the majority of the respondents (95% for low bandwidth and 90% for irregular power supply.) Another impediment factor is inadequate computer terminals as indicated by 80% of the

respondents. Other challenges identified are high tariff rate of the GSM service providers (65%) and few agricultural programmes aired on radio and television (60%). The researchers explored the level of satisfaction among the farmers in relation to meeting their information needs through ICTs. The finding is shown in table 4.

**Table 4: Level of satisfaction amongst the farmers**

Level of satisfaction	Frequency	Percentage %
Highly satisfied	2	7.7
Moderately satisfied	3	11.5
Satisfied	6	23.1
Not satisfied	15	57.7
<b>Total</b>	<b>26</b>	<b>100</b>

*Source: Field Survey Data 2016*

The satisfaction level of the poultry farmers in terms of meeting their information needs with ICTs as shown in table 4 reveals that more than half of the total respondents (57.7%) are not satisfied. They are not satisfied with the available ICTs and as such are not able to meet their agricultural information needs. On the other hand, 23.1% of the farmers feel satisfied while 11.5% are moderately satisfied. The finding also shows that only 7.7% of the farmers are highly satisfied in meeting their agricultural information needs with available ICTs.

**5.1 Discussion of Findings**

This study focused on investigating the use of ICTs in promoting access to information needs of poultry farmers in Nigeria. In the study, there is observed high percentage rate of exposure to ICTs by the poultry farmers. This exposure however, did not translate into them having greater access to agricultural information needs.

Considering the demographic

characteristics of the poultry farmers, the percentage gender distribution shows that males (92.3%) are more involved in poultry farming than women. They mostly fall within the age bracket of 40 and above. This observation is not surprising as farming is more or less a tedious work requiring enormous strength and energy, which is more abundant among the male folks. In the educational background of the farmers, majority of them (84.6%) are educated with some of them having degree certificates. Suffice it to say that high proportion of the farmers is literate and will not have difficulties in using ICTs in accessing their information needs. Based on the interaction with the respondents during data collection, it was observed that majority of them belong to various farmers' association or group. Some are even involved in government sponsored programmes aimed at assisting farmers improve on their outputs. Example of such programme is FADAMA project.

In the area of ICT channels used by the

farmers in searching for information, computers/internet and telecentre remained the mostly used channels. There is also the use of e-resources of the university library by the farmers. Radio, mobile phones, and television are not given adequate attention as veritable channels of information dissemination in the library. This is against earlier observation that the farmers are more aware and exposed to these communication channels. The implication is that the farmers rely more on their personal efforts and arrangements in using these technologies for their agricultural information needs. On the other hand, the university library provides computers with internet connectivity as well as maintains a telecentre for the use of the farmers.

The use of ICTs in accessing information cannot go without some challenges. The findings of this study show that some peculiar challenges in the use of these ICTs abound. There is the issue low internet bandwidth making it difficult for farmers to access information at times. Another challenge, which even compounds the one mentioned earlier, is irregular power supply. The technologies used for communication cannot function without constant power supply. Therefore, the epileptic nature of power supply in Nigeria is a major issue in the use of these ICTs. There are some other observed challenges in this study relating to use of ICTs. They include inadequate computer terminals in the library for users, few agricultural programmes aired on radio and television stations and high tariff rate imposed by the GSM service providers.

From the result of the study, as shown in table 4, majority of the farmers (57.7%) are not satisfied with the information and communication technology services provided in the university. Their dissatisfaction may not be unconnected with the observation that most of the facilities they use for their information search are self-provided, such as mobile phones, radio and television. Even though

they use the university library facilities and the telecentre, most of them equally have their personal laptop and ipad with internet connectivity which they find usually handy for their information search.

### **Conclusion and Recommendations**

Poultry farmers in Nigeria need up-to-date agricultural information for their farming business. With the paradigm shift in information communication and search, ICT has become major factor in information communication and dissemination even in the rural communities. Poultry farmers in Nigeria stand the chance of benefitting immensely from ICT especially in accessing information to upgrade their equipment and knowledge about global best practices in the poultry farming.

The modernization role of mobile and communication technologies has emphasized the need to seek for innovative ways of utilizing the technologies, which are getting more sophisticated, cheaper and common. Based on the findings of this study, the following recommendations are apt:

1. For effective dissemination of agricultural information, the university should consider improving on the ICT facilities in the library. More computers should be provided to accommodate the poultry farmers who are not members of the university community but visit the library for their information needs.
2. There is the need to improve on the standard of the telecenter and expand it in line with what is obtainable in more advanced countries. Doing this will attract accommodate more farmers to the center.
3. Government should consider improving on the public power supply in the country. However, alternative power supply, such as generators and inverters can be installed to ensure un-interrupted power

supply. The internet servers, the computer terminals, and other technologies require constant power to function and deliver maximum service. This underscores the need for constant power supply at the telecenter and library.

4. The university should increase the internet bandwidth on campus for more robust internet connectivity.
5. The internet and mobile phone service providers should ensure wider coverage of their services. There should also be legal framework for regulating the exorbitant tariffs imposed by the internet and mobile phone service providers so that more poultry farmers can afford the services.
6. The radio and television stations should consider producing and airing more agricultural programmes, even in vernacular, to attract more farmer using radio and television to satisfy their information needs.

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