

DETERMINANTS OF FACTORS AFFECTING THE USE OF ICTS AMONG URBAN AND RURAL FARMERS IN ABIA STATE

Odoemelam, L. E. and Olojede, J.

Department of Agricultural Economics, Rural Sociology and Extension,

Michael Okpara University of Agriculture, Umudike.

Lovinasteve@yahoo.ca.

ABSTRACT

This study investigated the determinants of factors affecting the use of ICTS among urban and rural farmers in Abia State. The State has 3 agricultural zones namely Aba, Umuahia and Ohafia. In each of the agricultural zones, 1 Local Government Area was chosen. From these LGAs, one urban area and one rural community also were randomly selected. For Aba Zone, Aba urban and Mgboko-amiri community, Umuahia zone, Umuahia urban and Umudike and for Ohafia zone, Ohafia urban and Akanu-ukwu community. Multi-stage sampling procedure was used in determining the sample size. From each town and community, 30 respondents were purposively selected, making the sample size to be 180 respondents. Data were collected through well structured questionnaire to obtain detailed information from the respondents on factors affecting the use of ICTs among them, and subsequently analyzed with both simple descriptive and inferential statistics like frequency distribution and Probit regression model. The research findings indicated that majority of the respondents were between the age of 31-45 years of age with (57%) of the respondents being female and (43%) being male. About 41% of the respondents had no formal education while 59% had various levels of educational qualification. Respondents access to ICTs, shows that about 20% of the urban farmers had access to television while 18% of the rural farmers had access to television (communication centre), for radio 21% for urban and 36% for rural farmers. About 19.0% of the urban and 3% of the rural farmers had access to GSM. On major factors affecting the use of ICTs about 17.0% of the urban respondents and 14.5% of the rural complained about mobility, followed by poor power supply, 19.3% for urban while 16.3% for rural farmers and lastly 14.7% of the urban farmers and 16.3% of the rural complained about lack of access to internet facilities. On determinants of the use of ICTs, using probit regression, the results indicated that education, income, sex and technical skill was positive and significantly related to use of ICT (Y) at 1% level, while cosmopolitaness, permission and time was negative but significantly related to T at 1% level. Based on these findings, the paper recommends that proper empowerment of the farmers becomes necessary as this will help to reduce the barriers that limits the utilization of ICTs.

Keywords: Abia State, farmers, ICTs

INTRODUCTION

Information is a critical resource for socio-economic development as it enables people to make informed choice towards improving their livelihood Matovero, (2006). The importance of information for transforming agriculture has been demonstrated in some of the rapidly growing economics such as China, Xu (2001) and others such as Malawi

and Tanzania Mchombu (2003). Major benefits accruing from using current agricultural information are the improvement in farming techniques including the use of manure or fertilizer; knowledge about controlling crop and animal disease and irrigation etc.

Aguolu (1997) observed that the availability of information does not necessarily mean it is

accessible. The author noted that the wealth of information in existence in the world today is tremendous. The sheer volume of it, in a myriad formats as well as obstacles of illiteracy, and lack of awareness of the need for information, distance, and poverty make complete access impossible. Muyepa (2002) observed that lack of access to agricultural information was a cause of low agricultural productivity in Malawi, contributing to deepening poverty. In the same way, Semwanga (2005) reported that lack of access to information on existing technologies as one of the causes of low urban and rural agricultural production and consequently, food insecurity in Kampala city. The urban population in Abia is growing rapidly due to economic melt-down, political, social, cultural and environmental factors. Rural and urban migration is growing rapidly, as a result, life in urban areas has become expensive while empowerment in the formal sector has gone down Focken, (2005). The response of urban dwellers to food security was to engage in extensive urban farming Boland, (2002). The level of production of the rural farmers has also gone down due to this rural urban migration. The challenge of this set of farmers is to source for current and relevant information on farming operations because the extension services charged by the government to provide such services has not been efficient Unanma, (2004). As lack of food increases and life for urban dwellers become complex, urban agriculture is viewed as alternative survival strategies. Although urban agriculture in Abia has been practiced in the city since the early 70s. It only increased rapidly during the era of kidnapping and rape in the state. Many rural dwellers left their various communities for them. Many of the residents practice agricultural activities ranging from horticultural crops (fruits, vegetables and flowers); root tubers (cassava, yam, sweet potato); legumes and cereals; livestock farming (poultry; pigs and goats). In the same vein, it has also affected the production of the rural dwellers, because most of those young men/women who are the major labour force

in the communities were forced to leave their homes in order to avoid being kidnapped. It is against the background that the researchers seek to ascertain the determinants of the use of ICTs among urban and rural farmers in Abia State. The specific objectives of the study are to:

1. Identify the socio-economic characteristics of the respondents,
2. identify their sources of agricultural information,
3. identify available ICTs and respondents' access to them,
4. ascertain factors affecting the use of ICTs by the respondents and
5. ascertain the determinants of the use of ICTs among the respondents.

METHODOLOGY

The study was conducted in Abia State, which has 3 agricultural zones namely Aba, Umuahia and Ohafia. In each of the agricultural zones, 1 Local Government Area was purposively chosen. They are the LGAs that have the attributes required for the study. From these LGAs, one urban and one rural community were randomly selected. For Aba zone, Aba urban and Obingwa, Umuahia zone, Umuahia urban and Ikwuano and for Ohafia zone, Ohafia urban and Akanu-ukwu. Multi-stage sampling procedure was used in determining the sample size. From each town and community, 30 respondents were purposively selected to arrive at a final sample size of 180 respondents.

Data were collected through well structured questionnaire to obtain detailed information from the respondents on factors affecting the use of ICTs among them. This enabled the farmers (urban and rural) to express their views, experience, opinion, attitudes and reactions about access and use of ICTs in their farming activities. Data were analyzed with both simple descriptive and inferential statistics like frequency distribution and probit regression model. The explicit form is expressed below:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7 + e)$$

Where Y = Dependent variable (use of ICTs)

X₁ X₆ (Independent variables)
 Where,
 X₁ = Sex dummy variable; Male 1; female 0.
 X₂ = Age, measured in years
 X₃ = Education, number of years of formal schooling
 X₄ = Marital status, married 1; single 0
 X₅ = Income, measured in Naira from major occupation
 X₆ = Cosmopolitaness (degree of outside orientation) measured in number of times an individual travelled outside his environment. Dummy variable (1-3 times not regular; 4 8 times regular).

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Respondents

Table 1, shows selected socio-economic characteristics of the respondents. A total of 180 farmers (urban/rural) were interviewed. The result indicated that (26%) of the respondents were between the age of 18 30 years, about (42%) were between the age of 31 45 years while (32.0%) were between 45 years and above. The results also indicated that (43%) of the respondents were male while (57%) of the respondents were female supporting the views of Akukunda, et.al, (2003) that most of the women especially of

the low and middle income classes remain at home and engage in urban farming to ensure availability of food in the household and to others and to supplement household income while their husbands go to city to work in formal or informal jobs.

Table 1 further indicated that (41%) of the respondents had no formal education, (30%) of them had primary education, (28%) had secondary education while only (2%) of the respondents had a higher degree certificate. This is an indication for active information seeking and use to transform agriculture, and at the same time improve food production and security. For the rural farmers, 54.4% of the respondents had no formal education while 45.6% of them had varying degrees of educational level the implication is that lack of skills and literacy will limit their use of ICTs.

According to Hornik (1999), basic education whether obtained in school or out of school makes a lot of contribution to productivity because according to him, better educated farmers are easier to deal with and have greater access to external information sources and are easily adopters of innovation.

Table 1: Distribution of respondents by personal characteristics

Variables	Urban Farmers (N=90)		Rural Farmers (N=90)		Total, (N=180)	
	Freq.	Per.	Freq.	Per.	Freq.	Per.
Age						
18 - 30	26	29.0	21	23.0	47	26.1
31 - 45	44	48.9	32	36.0	76	42.2
45 and above	20	22.2	37	41.0	57	32.0
Sex						
Male	37	41.0	31	34.4	78	43.3
Female	53	59.0	49	54.4	102	56.7
Marital Status						
Married	58	64.0	71	78.9	129	71.7
Single	32	36.0	19	21.1	51	28.3

Variables	Urban Farmers (N=90)		Rural Farmers (N=90)		Total, (N=180)	
	Freq.	Per.	Freq.	Per.	Freq.	Per.
Educational Level						
Non formal	24	26.7	49	54.4	73	40.6
Primary	36	40.0	18	20.0	54	30.0
Secondary	27	30	23	25.6	50	27.8
Tertiary	3	33	-	-	3	1.7

Source: Fields Data, 2009

Respondents' Sources of Agricultural Information

Table 2, shows the different sources for which both rural and urban farmers received agricultural information. For urban farmers, radio (28.3%), posters (25.8%) and television (17.6%) were their sources of information while social network, extension agents and radio scores highest for rural farmers. The respondents overwhelmingly stressed that because the extension staff and trainers appeared once in a while and talked

to the farmers verbally, the farmers tend to forget what they were taught hence the need to increase the use of ICTs for rural farmers. However, views from most of the respondents interviewed in the rural areas indicated that the most reliable sources of information were fellow farmers, friends, relatives, neighbors, and opinion leaders. This finding is supported by KIT, (2005) who cited that range of ICTs and application available today still remain in the domain of few and this will affect utilization.

Table 2: Distribution of Respondents on their Sources of Agricultural Information

Variables	Urban farmers (N=90)		Rural farmers (N=90)	
	Freq	Per.	Freq.	Per.
Social network	18	11.3	42	32.0
Radio	45	28.3	29	22.1
Television	28	17.6	17	13.0
Computer	15	9.4	-	-
Extension agents	12	7.5	32	24.4
Poster	41	25.8	11	8.4

***** Multiple responses**

Source: Filed Data, 2009

Respondents' Access to ICTs

Mchombu (2003) regards information and knowledge as the new factors of production playing critical roles like the traditional

factors of production such as land, labour and capital. Aina (1995) observed that farmers lack access to such information and that

Table 3: Distribution of Respondents according to available ICTS and their access to them

Variables*	Urban farmers (N=90)		Rural farmers (N=90)	
	Freq	Per.	Freq.	Per.
Television	76	19.6	36	17.8
Radio	81	21	72	36
Internet	16	4.1	-	-
Chat	1	0.26	-	-
Print	56	14.5	42	21
Mobile phone	69	19.0	6	3
DVDs	51	13.2	28	13.9
Audio visual tools	37	9.6	18	8.1

Source: Field Data, 2009

Multiple responses

agricultural extension officers are unable to disseminate relevant information to farmers due to their inadequate number. If transforming agricultural productivity and the economy of the nation is visible, the need to increase access to ICTs becomes very important. Table 3 shows available ICTs and the respondents access to them. About (20%) of the urban farmers had access to television while (17.8%) of the rural farmers had access to television too. For radio, (21%) of the urban farmers had access to radio while (35%) of the rural farmers had access to radio as well. On internet facilities, only about (4.1%) of the urban farmers had access to internet while none of the rural farmers had access to internet. According to one of the

urban farmers, “the use of internet are being increasingly important for information sharing and disseminating agricultural information and knowledge, marketing of goods and services and for trading purposes.” Access to GSM was (19.0%) for urban farmers and (3%) for rural farmers. One of the urban farmers also concluded that mobile phone has enabled a large constituency of agricultural producers to access market and market information. The result on table 3, indicated that the respondents had access to ICTs except internet and chat for rural farmers. The implication of this result is that the challenge of improved technologies not filtering down to farmers could be addressed through increased use of ICTs.

Table 4: Distribution of Respondents on Factors Affecting the Use of ICTs

Variables	Urban farmers (N=90)		Rural farmers (N=90)	
	Freq	Per.	Freq.	Per.
Education	48	11.6	65	11.8
Income	55	13.3	75	13.6
Mobility	70	17.0	80	14.5
Time	45	10.9	75	13.6
Cultural constraints	62	15.0	70	12.9

Variables	Urban farmers (N=90)		Rural farmers (N=90)	
	Freq	Per.	Freq.	Per.
Poor power supply	80	19.3	90	16.3
No signal (for television)	24	6.0	-	-
Lack of technical skill	39	9.4	81	14.7
No access to internet	61	14.7	90	16.3

Source: Field Data, 2009

* **Multiple responses**

Factors Affecting the Use of ICTs among the Respondents

According to Moore (2002) availability of ICTs is not a guarantee that it will be used. Table 4 shows factors affecting the use of ICTs among the respondents. From the results, education, 11.6% for urban and 11.8% for rural farmers indicated that lack of education restricts their access and use of ICTs. Osuji and Akintola, (1983) indicated that education could and does create awareness and need for seeking more useful sources of information on relevant improved technologies for increasing productivity.

Other factors include income, mobility, time, cultural constraints etc (see table 5). As Hafkin and Taggert (2001) have explained, women are rarely involved in the needs assessment of ICTs for development and secondly attitudes that high-end information technology 'is not for women' who are still being treated as passive recipients of information and not as active information users and communicators. Most of the farmers were women and these cultural constraints will limit their use of ICTs. This will gradually affect agricultural transformation adversely.

Table 5: Profit Regression Table, Showing Determinants of the Use of ICTs by the Respondents

Variables	Coefficient	T-ratio
Intercept	-1.224	-1.502***
Sex	0.453	1.564*
Interest	0.340	-0.706
Education	0.025	2.0312**
Income	0.022	0.749
Cosmopolitaness	-3.503	-4.898***
Technical skills	0.862	-11.706***
Time	0.123	3.141***
Permission	-2.393	-8.125***

Pearson Goodness of fit chi-square = 2.265 E + 19

Note *** Significant at 1%
 ** Significant at 5%
 * Significant at 10%

Determinants of the Use of ICTs among the Respondents Using Probit Regression

The Pearson Goodness of fit chi-square was

significant in the zones which implies that all the variables included in the model were best fit. From the results presented in Table 5, sex

(-0.446) has negative relationship with use of ICTs (Y). This is against a-prior expectation, because according to Cockburn and Ormod, (1993) on average women have less access to and use of ICTs, as a result of cultural and religious constraints. Women are overloaded with household activities and thus the conflicting demands on their time are much greater than for men and thus limiting the time available to women for watching television, listening to radio reading newspaper and also access the internet. The implication of this is that agricultural transformation will be limited, because most of these farming activities are carried out by women. According to some of the respondents in the rural communities “many of them especially women didn't receive adequate information for enterprise development, when extension agents visited our community, our men had better access to that training opportunity than women due to disparities in education, and literacy, together with lower mobility.

Education (0.025) had a positive and statistical significant relationship with Y in the zones. The implication is that as their level of education increases, their use of ICTs will also increase. **Cosmpoliteness** had inverse relationship (-3.503) with Y. Agbamu (2006) defined cosmpoliteness as the number of visits to places beyond the radius 8 10 kilometres of persons own village during a given period. The result indicated that the degree of outside orientation does not influence the rate of use of ICTs among the respondents.

Technical skill (0.862) had positive and statistical significant relationship with (Y) which means that the use of ICTs depend on the ability of the individual to operate it efficiently.

Time (0.123) had positive and significant relationship with Y. this means that the more the respondents had time, the more they access and use many ICTs that are affordable by them.

Permission (-2.393) had inverse relationship with Y. this means that consent from spouse or religious leaders does not limit the use of ICTs. In many homes in Abia State rural communities, some husbands does not allow their wives to use their ICTs and this will limit their access to agricultural broadcast.

CONCLUSION

The study indicated that majority of the respondents were between the age of 31 45 years, with (57%) of the respondents being female while (43%) were male. Level of education indicated that only about (41%) of the respondents had no formal education. Their level of access to ICTs were fairly adequate but a lot of constraints reduce their utilization of those ICTs.

On determinants of factors affecting the use of ICTs, education; cosmpoliteness, technical skill, time and permission all had statistical and significant relationships with Y.

RECOMMENDATIONS

Based on the results of the study, the following recommendations were made:

1. Since most of the farmers were women; there is need to involve them in the needs assessment of ICTs for development.
2. There is also the need to set up communication centres in especially in the rural areas where extension agents who have the technical skill to operate those machines, should help to teach the farmers on how to operate them effectively.
3. State and individuals are urged to promote the existence of a diversity of sources of information as a means of encouraging greater public access to information.

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