

## DETERMINANTS OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) USE IN THE MARKETING ACTIVITIES OF POULTRY FARMS IN EPE LOCAL GOVERNMENT AREA OF LAGOS STATE, NIGERIA

NDANITSA, M.A., UMAR, I.S., OLALEYE, R.S., ABUBAKAR, S. B, MOHAMMED, U.S, SADIQ, S, TYABO, I. AND OLAWUMI, A.P

### ABSTRACT

The study focuses on the determinants of the rate of adoption of ICT in poultry business in the study area. The objective of the study was to determine the rate of ICT compliance in marketing of poultry products. A random sampling technique was used to select a total of 60 respondents from the study area (15 wards in Epe L.G.A of Lagos State). Data were obtained through administration of structured questionnaires and interview schedule. Data were analyzed using descriptive statistics and Tobit regression model. The result of the analysis reveals that poultry farmers in the area have been using ICT compliance in running their business. The result of the analysis also shows that education has a positive correlation with the rate of adoption of ICT, while age has a negative correlation. Findings from the study also revealed that print media and mobile telephones are the instrument of ICT compliance. It was however, evident that certain infrastructural facilities like power supply are inefficient. It was recommended that increased awareness on the use of ICT should be provided to poultry farmers through extension education.

### INTRODUCTION

#### Background to the Study

Poultry is a collective term for all avian species (domesticated birds) nutritionally and economically useful to man (Okoli, 2006). The most important poultry species remains the domestic fowl commonly called chickens, not only because of its universal availability but also because it provides important highly relished human foods. The other domestic avian species classed under poultry include, Turkey, Duck, Guinea Fowl, Goose and Pigeon.

According to Ostrander (2008), poultry farming (Production and Marketing) is a commercial raising of chickens, turkeys, ducks and geese for their meat and eggs. Ostrander (2008), further explained that poultry industry expanded during the World War II because of shortage of beef and pork, which require longer time to develop. Despite the increase in the sub-sector, Gona (2009) stressed that Nigeria is among the least consumers of animal protein in the World. More so, Ndanitsa (2005) reported that Nigeria is endowed with abundant human and material resources but cannot sufficiently feed her people (food insecurity). This has been proven by the decreasing percentage contribution of agriculture to the Gross Domestic Product (G.D.P.) of the country (Youdeovei, 1995). Many scholars believe that there is a gap between research and farmers who are involved in production and marketing of produce. Idachaba (2000) observed that a wide gap still exist between the potential of released improved seed varieties and animal breeds and farmers' yields. However, there is evidence that the media contribute to agricultural development (Koutsouris, 2006). This is because communication is critical to finding solution to problems of food production through facilitating research - farmer linkage through ICT usage. ICT is commonly used to embrace, a multitude of media including telephone, television, video, telex voice information systems and fax as well as those requiring the use of the personal computers fitted with a modern or supply technologies that facilitate communication, processing and transmission of information by electronic means

ranging from radio and television to telephone (fixed or mobile) and the internet (Warren, 2001; CTA, 2003; Omotayo, 2005).

ICT is known to be cost effective and enjoys the advantage of economies of scale reaching larger targeted audience. Myhr and Nordstrom (2008) observed that mobile phones have had tremendous diffusion rate in Africa and has brought access to telecommunication to new groups to help increase their bargaining power and control over external events. For instance, according to Mumero (2007) in Tanzania, the arrival of mobile phones, under the five mile project of the Agric-Marketing Systems Development Programme (AMSDP), has virtually transformed agricultural business through the way producers access vital market information. ICTs also make extension systems and structures more efficient through better management of information and scarce resources (Kiplang'at, 1999). ICT has become a very important feature in contemporary times because it transforms all human activities dependent on information including rural development and food security (Arokoyo, 2005).

The concept of Agricultural Marketing Network (AGMARKNET) is primarily based on the use of Information And Communication Technology (ICT) model or system to provide access to information at reasonable cost to farmers. Considering the dwindling or ineffectiveness of the extension service due to poor funding by the government or other relevant authorities, ICT cannot be timelier than now. In addition, AGMARKNET is a web system technology which has to do with the networking of agricultural produce goods, research and technological development of markets through a portal system. This will facilitate the development of e-commerce model in the country. This has been achieved in countries like India, China, United States of America, Britain, France etc.

Arokoyo (2003) reported that ICTs are important for networking among and between the key stakeholders in the Research - Extension - Farmer - Inputs - Linkage - Systems (REFILS). The information on market prices provides





farmers with a 10-20 percent increase in profit (Krogt, 2008). In view of the rapidly growing population and low protein intake especially in rural areas, challenges to increase meat production in Nigeria has actually led to increase in poultry production. Furthermore, there has to be sustainability of the poultry industry and this requires modern information technology, improved poultry research and its market structures. Of all this, market infrastructure remains the most important as it is the link between production centers and final consumers. Poor marketing strategies, inadequate market infrastructure information and inaccessibility of information about market situation and new innovations are however reducing the economic potential of poultry production in Nigeria. Sonaiya (1999) noted that development, documentation and dissemination of information and appropriate methods of data collection, collation, storage and application on the farm are essential. Here, ICT become relevant as it is able to provide necessary contributions to obtain and process information. The purpose of the study was to examine the use of ICT in marketing of poultry products while the specific objective was to determine the rate of ICT compliance in the marketing activities of poultry farms.

#### METHODOLOGY

The study was conducted at Epe locality, which is the headquarters of Epe Local Government Area of Lagos State, Nigeria. Epe LGA has a population figure of 111,464 people (NPC 2005). The main occupation of the people is fishing and poultry farming.

**Sampling Techniques:** A random sampling technique was used in selecting 60 respondents from 15 wards within the Local Government Area (LGA).

**Data Collection Method:** Primary data were collected through the use of structural questionnaires and interviews schedule.

**Data Analysis and Measurement of Variables:** To determine, the rate of ICT compliance by poultry farmers, respondents were asked questions on some socio-economic characteristics and level of capital investments in the enterprise. Descriptive statistics and Tobit regression model were used to determine, the explanatory variables that are significant in the adoption of ICT, by the poultry farmers.

**Model Specification:**

$$Y = F(X_1, X_2, X_3, X_4, X_5, X_6).$$

Where Y = Rate of ICT compliance: obtained from the data collected from the field, and measured in term of ICT.

$X_1$  = Age of Respondent: Measured in years, in which people have been found to be amendable to new innovation.

$X_2$  = Marital Status of the Respondent: Married or single, divorced or widowed. It was expected to have additional family labour in the poultry enterprise.

$X_3$  = Educational level of the poultry farmer, measured in years. Its effects are mostly felt in the acquisition of new concept used in marketing activities of the poultry farming.

$X_4$  = Years of poultry farming experience measured in years. This can refer to knowledge and skill gained overtime.

$X_5$  = Capital Investment: Measured in Naira (N). Poultry enterprises is relatively expensive.

$X_6$  = Annual Profit of the respondent: Also measured in Naira (N). This show that an increase in poultry control turn over has bridge the gab between other enterprises.

#### RESULTS AND DISCUSSION

Table 1 shows the result obtained from the regression. The four functional forms were estimate tested and the double log - equation was found to provide the best fit. It has an  $R^2$  value of 0.986. This means that the socio-economic factors namely age of the poultry farmer ( $X_1$ ), Marital status ( $X_2$ ), Educational level ( $X_3$ ), Years of poultry farming experience ( $X_4$ ), Capital Investment ( $X_5$ ) and Annual profit realized ( $X_6$ ) all play a significant role in the adoption of ICT by the farmer as they account for 98.6 per cent of the rate of compliance. However, most of them utilize print media and internet exploration for the ICT compliance in the area, as well as the use of mobile phones.

Also, the coefficient of respondents level of education ( $X_3$ ) was found to be positive and significant at 10 percent. This sign confirms that more educated farmers will have a higher tendency to ICT compliance. On the other hand, age of the respondent ( $X_1$ ) though is significant at 5 percent, it however has a negative sign. It means that the older the farmer the less likely he will be in adopting ICT for his better marketing strategies.

#### CONCLUSION

Based on the findings of the study, the following conclusions are drawn. Most poultry farmers utilize ICT for their marketing strategies to earn higher profits. However, extension education should be extended to most poultry farmers since it has a positive impact on the adoption rate of ICT in the area. Nevertheless, the major problem associated with ICT usage were poor infrastructural facilities and management capacity. Policy makers interested in the usage and encouragement of the use of ICT for poultry business may equally implement policies aimed at ameliorating the identified problems such as regular supply of power and credit facility and to ensure effective utilization of ICT for poultry business in Epe L.G.A of Lagos State.

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**Table 1. Rate of ICT Compliance (Regression Analysis)**

Form of Equation	Regression Coefficients								R <sup>2</sup>	F-Value
	Constant	Terms	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>		
Linear Coeff	-0.633	0.05163	0.0000	0.0005	0.162	0.0000000	-	0.97	380.506	
Stand Erro	0.087	0.011	0.000	0.002	0.017	0.000	0.00000001			
T – Value	-0.726	4.661	1.267	2.574	9.682	0.754	-0.527			
Significance		**		*	**					
		0.000		0.013	0.000					
Exponential Coeff	-0.115	0.002376	0.00000	0.000134	0.00612	0.000000	-0.00001	0.912	91.532	
			9	7	0					
Standard error	0.064	0.08	0.000	0.002	0.012	0.000	0.000			
T – Value	-1.777	2.900	-1.392	0.835	4.949	0.448	-0.487			
Significance		**			**					
		0.005			0.000					
Double Log. Coeff	--2.033	0.304	0.127	0.002	0.547	-	0.000478	0.986	639.753	
Standard error	0.919	0.057	0.449	0.014	0.071	0.000468	0.009			
T – Value	-10.482	5.323	2.870	1.481	7.729	0.0521	1.025			
Significance	88	**	**		**					
	0 000	0.000	0 006		0.000					
Semi log Coeff	-	0.220	0947	0.145	1.291	0.000161	0.004183	0.928	114.571	
	0,07610									



Standard error	1.166	0.349	0.271	0.84	0.432	0.055	0.027
T - Value	-6.524	0.632	3.486	1.734	2.789	0.29	1.568
Significance	88		**		**		
	0.000		0.001		0.004		

Source: Computer Printing analysis, 2010; \* = Significance at 10% ; \*\* = Significance at 5%