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SOCIO-ECONOMIC FACTORS AFFECTING ICT UTILIZATION BY YOUTHS IN FISH FARMING IN KADUNA STATE, NIGERIA

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ABSTRACT: *Background ICT brings forth new development surfacing in agriculture. Youths need to improve their ICT abilities for the promotion of agriculture. This study was carried out in Kaduna state Nigeria. Objective the broad objective of the study was to determine the socio – economic factors that affect the utilization of ICT in fish production by youth in Kaduna State. Methods 100 youths were randomly selected and administered questionnaire. Data were analyzed using descriptive statistics, regression and correlation analysis. Results The results showed that age, education, pond size, quantity of fish produce and training contributed significantly to ability to use ICT in fish production. Some factors were found to be positively related to ICT utilization. Age, education and training made positive contributions at 5% level of probability. Conclusion It was therefore concluded that youth need resources (education and training) in order to utilize ICT in food production. It is recommended youth need empowerment and training to utilize ICT for food production.*

KEYWORDS: Age, Education, Pond Size, Training, Production, Empowerment

INTRODUCTION

The perception of agriculture as dirty, low paying and demanding are beginning to fade with more enlightenment. Despite the wide acceptance of fish farming as an income generating activity, its contribution total domestic fish production in the country has not met the target (Akinyemi, 1998). This is basically due to lack of technological know-how by fish farmers and prospective entrepreneurs. The search for an effective strategy for agricultural development calls for adequate use and application of ICTs, which are considered as among the principal drivers of economic growth and development worldwide (Abubakar and Abdullahi, 2009). Farmers who are hooked up to new technologies fare better (Shah, 2009). Fish farmers need information to enhance agricultural management, research and development (Nkwocha et al, 2009).

ICT's boosts information supply on improved farm technologies and the resultant effect an productivity and income of farmers; the challenge is that most Nigerian farmers are illiterates, hence they have no knowledge of the use of ICT facilities like computer and internet (Omotoyo, 2005). Nkwocha et al (2009) in their study found out that there were more prevalent factors limiting access to ICT in Okigwe zone (predominantly in the rural areas) of Imo state (Nkwocha 2009). Similarly, Shah (2009) reported that, access to broad band internet services is substantially low in rural areas and poor urban neighbourhoods of many developing countries than in the metropolitan urban.

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Information technology in Nigeria has gone along way, but despite its existence, there seems to be limited access and utilization of these technologies. Consequently, therefore, there is a need to examine the social and economic factors that undermine the use of this ICT by farmers. Therefore this study was set out to identify the socio-economic factors that affect the ability of farmers to use ICT in fish production. The study answers the following research questions (1) what are the socio-economic characteristics of the fish farmers. (2) Determine the socio-economic factors that affect utilization of ICT (3) what are the problems with ICT utilization in fish production. What are the problems encountered in fish production.

The broad objective of the study was to determine the socio-economic factors that affect the utilization of ICT in fish production by youth in Kaduna state.

The specific objectives were:

1. To identify the socio-economic characteristics of the youth fish farmer in Kaduna state;
2. Assess the socio-economic variables associated with ability to use ICT by youth fish farmers;
3. Identify the problems encountered by youth in using ICT.

Hypotheses

There is no relationship between socioeconomic characteristics of youth fish farmers and their ability to use ICT.

LITERATURE / THEORETICAL FRAMEWORK

Information is power and power is information, without information there cannot be growth. ICTs are considered as a powerful tool of technologies and resources to generate, disseminate, hoard and manage the information. Knowledge and information are the basic sources of development for economic growth in the poor society (Bhisham et al, 2011). The most topical findings are that the ICTs play an important role to boost economic growth and to reduce poverty. ICT are not magical cure for poverty itself; it could be only when it is used in the proper way and at the right time. Many developing countries remain largely poor because they do not participate actively in modern technologies therefore industrial revolution bypass them (Swiss Agency for Development and Cooperation (SDC), 2004).

Information and communication technologies (ICT) systems are widely-used by individuals and organizations. Their use has many favourable consequences because they support interaction and collaboration, workplace learning (Andriessen, 2003) and work performance (Ciborrra 1996, Jones and Kochtanek 2004, Nunamakar 1997 and Orlikowski 1996). Several studies demonstrate that ICT investments are beneficial for performance and productivity (Hitt and Brynjolfsson, 1996). However, the implementation of an ICT system always entails both organizational and individual changes (Rogers 1983, Van den Ven 1986) and therefore user adoption and establishing the used of ICT systems have proven challenging in organizations (Bullen and Benneth 1990, Burns et al 1991, Grudin 1989, Kwon and Zmud 1987 and Orlikowski 1993). The challenges and problems associated with the implementation and adoption of ICT systems have led scholars and practitioners to seek to understand and manage the processes and phenomena related to the topic.

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Many ICT systems are socially constructed and learning intensive and they often require considerable skills and know-how if they are to be implemented, operated and adopted (Andriessen 2003, Attewell 1992 and West et al 2007). Bagozzi et al (1992) and Bagozzi et al (1992) reported that inadequate learning can restrict the adoption and use of a potentially productive system.

Theory of Acceptance Model (TAM)

This theory aims is to predict and explain ICT usage behaviour, that is what cause potential adopters to accept or reject the use of information technology. Theoretically TAM based on Theory of Reasoned Action (TRA)). In TAM perceived usefulness and perceived ease of use are the fundamental determinants of system use and predict attitudes toward the use of the system that is user's willingness to use the system. Perceived usefulness refers to the degree to which a person believes that using a particular system would enhance his or her job performance and perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort (Davis, 1989)

Literature has distinguished TAM as the most influential theories used in ICT implementation and adoption studies TAM extensions added individual characteristics (gender, motivation, experience, age) organizational characteristics or innovation characteristics (trialability, compatibility, fit to the task) into the model. Users beliefs and attitudes change when they use ICT systems potential.

Two major assumptions underlie the role of ICT: The first is that the proliferation of ICT is causing rapid transformations in all areas of life:

ICT Functions to Unify and Standardize Culture

It is the study or business of developing and using technology to process information and communication. The operations of the licensed telecommunication service provided in the country has created some well-felt macro-economic effects in terms of job creation, faster delivery services, reduced transport costs, greater security and higher national output.

Modernization theory can also be used to explain the underlying background of ICT. Modernization theory maintains that traditional societies will develop as they adopt modern practices. Proponents of modernization theory claim that modern states are wealthier and more powerful and that their citizens are free to enjoy a higher standard of living. Development such as new data technology and the need to update traditional methods in transport, communication and production, make modernization necessary or at least preferable to the status quo.

Modernization theory is used to explain the process of modernization within societies. Modernization theory maintains that traditional societies will develop as they adopt modern practices.

Communication is an area that has grown due to modernization. Communication industries have enabled capitalism to spread throughout the world. Telephony, television broadcasts, news services and online service providers have played a crucial part in globalization.

Bradley (2010) postulated the convergence theory of ICT, Society and Human Being. He reported that

The good ICT society is visualized as capable of:

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- Bridging the digital divide
- Ensuring the freedom of expression
- Reducing poverty
- Facilitating social integration
- Combining "public domains and individual professional private roles (IPR)"
- Fighting illiteracy
- Encouraging e-governance and e-democracy
- Improving quality of life
- Protecting local and global environment for future generations (e- society-visions).

Benefits of ICT to Farmers

One of the best ways to further develop agriculture growth is by mastering ICT skills and knowledge. Among the efforts to develop the agricultural sector attempts have been made to encourage technology adoption among farmers in Malaysia, particularly in terms of activities such as agro-based website surfing. Agro-based websites are very helpful and informative (Gakuru et al, 2009).

Research conducted by Sadat et al (2006) stressed that encouragement to utilize ICT is important due to the fact much of agriculture community in Malaysia and Nigeria still rely on traditional means such as neighbour, family and other farmers in order to get agricultural information. According to Barton (2006) websites promote farmers with the facilities to communicate with other farmers, extension officers and agencies across long distance. In addition websites are the most popular online services for farmers and are cheaper than telephone usage. Farmers are able to access information through ICT at any time and this enables them to create networks with development agencies and other farmers and eventually increase their chances to double their agriculture productivity (Obiechina, 2006). According to Pickernell et al (2004), ICT has certainly had a big impact on agriculture. It provides opportunities for farmers to expand their market and reach new customers through the internet. One example that shows the successful use of ICT in agriculture is "mobile telephony". This has been used to access information on market price, weather and many other aspects. These changes provide advantage to farmers improving their quality of life.

METHODOLOGY

The study was carried out in Kaduna south, Kaduna north Igabi, Chikun, Jaba and Kagarko local government areas of Kaduna state.

Kaduna state occupies the central portion of northern Nigeria and lies between latitude 90^{o} and 140^{o} north of the equator. The state has two distinct seasons the dry and rainy season. The temperature is hot during the dry seasons. The southern part of the state enjoys heavier rainfall than the northern part; lasting between 5 – 6 months and the northern part 4 – 5 months. The rains starts in April and end in October. The state extends from tropical grassland (Savannah) in the south to Sudan Savannah in the north. Kaduna shares borders with Kano, Katsina, Zamfara, Niger, Nasarawa, Plateau, Bauchi and FCT. The land mass is $45{,}567m^2$ with an estimated population of 6,066,562. The state has vast expanse of fertile land growing both food and cash crops.

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Structured questionnaire were administered to 100 youths. Response was elicited on their socioeconomic characteristics, ability to use ICT, and problems associated with ICT utilization. The data was analysed using descriptive statistics, multiple regression and correlation analysis. Sample of convenience was used to select the local government areas and the population of the study. Objectives 1 and 3 were achieved with the use of descriptive statistics. Objective 2 was achieved with the use of Pearson Product Moment Correlation. The hypothesis was tested using the multiple regression analysis.

RESULTS / FINDINGS

Findings I (Socioeconomic Characteristics of Youth Fish Farmers)

The studies revealed that majority of the youth involved in fish farming were male (75) and female 25%. This results agrees with the findings of Sule et al (2009), Ifejika and Ayanda (2005), Ifejika et al (2008) and Aphunu (2011) that majority of the fish farmers in their areas of study were male. The result further indicated that majority of the youth were married (65%). This implies that more hands will be available for the characteristic routine of fish farming activities in terms of labour needs. This finding agrees with the results of Sule et al (2009) and Ifejika et al (2008). About 81% of the respondents are youth with ages ranging from 20 – 39. This result is in disagreement with the result of (Sule et al, 2009) who reported that 29% of the fish farmers in Borgu were within the ages of 30 – 39 years. This age group is agile and responsive group ready to take risk in fish farming for their socio-economic development.

Response on the educational attainment indicates that majority (57.5%) had tertiary education with many graduates and postgraduate degree holders. The high literacy level of the respondents is an added advantage since improved educational level tends to facilitate more curiosity and interest in proven aquaculture technology. This result is similar to the findings of (Sule et al, 2009) that 62% of the fish farmers had tertiary education.

The data in Table 4.1 show that 60% of the respondents had 6 – 10 experience in fish farming. The implication is that the respondents are experienced and have higher likelihood of risk in their occupation. This result is in disagreement with the result of Aphunu (2011) who reported that 18.3% of fish farmers in Isoko Delta state had 6 – 10 years experience in fish farming. Response on the pond size shows that majority of the respondents (77.5%) could stock only about 10,000 fingerings to table size. This implies that majority of the farmers were small scale. The finding is in agreement with Olapade (2005). Majority of the respondents (95%) produced only 50,000 fish. On the major occupation, 35% of had fish farming as their major occupation, while 40% have farming as their major occupation implying that the respondents produce food and fish.

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Table 4. 1: Shows Socioeconomic Characteristics of Respondents

Variable	Percentage
Gender:	
Male	75
Female	25
Age in years :	
20 – 29	48.4
30 – 39	32.3
40 – 49	12.9
50 – 69	6.5
Mean	32.81
Marital Status:	
Single	35
Married	65
Major Occupation :	
Fish farming	35
Farming	40
Others	25
Education:	
Koranic School	7.5
Primary School	10.0
Secondary School	2.5
Tertiary	57.5
Mean	5.25
Training Times (no of times):	
1	66.7
2	26.7
4	6.7
Mean	1.47
Years in fish farming:	
0 – 5	30
6 – 10	60
11 – 15	10
Mean	7.65
Pond size(capacity):	
1 – 10,000	88.5
10,001 – 20,000	2.5
20,001 – 30,000	7.5
30,001 – 40,000	2.5
Quantity of fish produced number:	
0 – 50,000	95
50,001 – 100,000	2.5
250,001 – 300,000	2.5

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Findings II (Relationship between Socio-economic Characteristics of Respondents and Ability to Use ICT)

The result shows that the variables had positive relationship with ability to use ICT. The variables are age, years in fish farming, fish pond size, education, number of training times and quantity of fish produced. This suggests that as the quantity of these variables increase their ability to use ICT also increases. This indicates that the older the respondents are, the more their ability to use ICT, perhaps because of their experience.

Statistical analysis revealed that education number of training and age made their contribution at 5%. This result corroborates the findings of Akinpelu (2013) who reported that educational qualification influenced ICT utilization. It is not surprise because majority of the respondents had tertiary education; they were therefore literates and could utilize ICT ability. Age contributed positively and significantly at 5% to ICT utilization. This implies that with age the youth are expected to acquire more capital to enable them use ICT. The result agrees with the findings of (Olapade, 2005). Who reported positive relationship with training and years of working experience.

Table 4.2: Shows results of Correlation Analysis between ICT Ability and Selected Socioeconomic Characteristics of Youth

Variables	Correlation Coefficient
Age	.21**
Years in fish farming	.336
Fish pond size	.276
Education	.000***
No of training time	.004**
Quantity of fish produced	.925

**Significant at 5%
***Significant at 1%

The results of the regression correlation analysis in table 2 reveal that socio-economic variables contributed 70% in determining the ability of respondent to use ICT. The socioeconomic variables are quantity of fish produced, education, age, years in farming, pond size, number of training. This is in agreement with the findings of Akinbile (2003) who reported that educational level of respondents enhance their comprehension of technical information and make them able to manipulate the information and hence influence their choice and use of ICT facilities, especially complex ones. The more the number of fish ponds the respondents have, the more the propensity to seek for information for increased production and manage and also the use of different ICT facilities.

Objective III

The problems encountered by youth in using ICT are inadequate infrastructure (41.7%) for the use of ICT like internet services and electricity. The second major reason was high cost of ICT services and devices.

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Table 4.3: Shows problems associated with ICT utilization

S/No	Variables	Percentage
1	Inadequate ICT Infrastructure	41.7%
2	High cost of ICT services	58.3%

Discussion of Hypothesis

The results of multiple regression show that some selected variables namely age, fish pond size, age, years in fish farming, number of training contributed to explain the variation in ICT utilization. These variables contributed 70.5 percent in explaining the variation. The variables years in fish farming and number training made their contribution at 5%.

The null hypothesis there is no significant relationship between socioeconomic characteristics of youth and ICT utilization in fish farming is rejected and the alternate hypothesis. There is significant relationship between socioeconomic characteristics of youth and ICT utilization in fish farming is accepted.

Table 4: Shows regression Analysis of Socio-economic Variables Affecting ICT Utilization of Youths

S/No	Variables	T	Sig.
1	Age	.1.150**	.314
2	Years in fish farming	.474	.660
3	Fish pond size	.446	.678
4	Number of training	-.1567**	.192
5	Quantity of fish produced	.459	.670

Implication to Research and Practice

Based on the foregoing the **implication of this to research and practice** following recommendations were made.

1. There is the serious need for our youths to go to school and be educated so that they can use ICT in food production.
2. Our youths need further be trained in ICT in order to be more efficient in ICT utilization which will translate to more food produced in the country.

CONCLUSIONS

The study revealed that some socio-economic variables influenced ICT utilization of youth involved in fish production. These variables are age, education, number of trainings, fish pond size, experience in fish farming and quantity of fish produced. These variables contributed positively to food production. This implies that as these variables increase the ability to use ICT also increases.

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