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Author for correspondence:

Adeyemi Adewale Akinola

E-mail: akinolaadeyemi@yahoo.com

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Agricultural Information: A Catalyst for Productivity and Economic Development

¹Adeyemi Adewale Akinola, ²Nkata U. Kalu, ³Adedoyin Temilade Akinola

¹Mountain Top University, ²National Open University of Nigeria, ³Babcock University, Nigeria

Agricultural information is an important aspect of agricultural practices. It is a bridge that links farmers to access information from customers, receive market update, acquisition of fertilizers and pesticide information, weather forecast for productivity etc. The paper focuses on agricultural information, productivities as it leads to economic development. The study population are registered farmers in Ogun state Nigeria. The proportionate stratified random sampling technique was used in the study. The study sample size totals 387 farmers and 363 copies of questionnaires were retrieved. Regression analysis was used to analyze the hypothesis in order to describe the variables in the study. The findings revealed that agricultural information significantly influenced productivity and economic development ($\beta = .282$, $t = 4.191$, $R^2 = .064$, $p < .05$). The paper concluded that the use of information gadget by farmers for agricultural information should be encouraged. Effort should be made by the agricultural agencies to establish relationship with telecommunication companies in other to enhance productivity.

1. Introduction

Information has been identified as one of the resources required for the improvement of agricultural production. Farmers planting on their farms are now faced with challenges of weather, temperature, soil moisture, and fertilization as well as pests and diseases which affect the growth of their farm products. It can be argued these challenges are due to inadequate access to agricultural information. It has been observed by scholars that information plays an important role in any business organisation, as it is needed in all spheres of human endeavor. Information is also necessary to facilitate decision-making and an essential component of organisational life which engender progress, and are widely recognised for both national and personal development (Ada, & Ghaffarzadeh, 2015).

Agricultural information is necessary for the overall development of a nation. Although the use of information technology can assist farmers in acquiring timely information on agriculture activities such as pricing, transportation, updates on weather forecast, credit facilities, and extension services among others, this is not always the case as some farmers may not be using information technology for the purpose of acquiring agricultural information. This may result to poor farm yield, lack of access to credit facilities, poor knowledge of preservation techniques, inadequate market and transport information, among others.

Farmers faced difficulty in acquiring agricultural information on the new modern technology to improve their farm productions compared to their conventional sources of information. According to Obidike (2011) when rural farmers lack access to knowledge and information that would help them achieve maximum agricultural yield, they are not only grope in the dark, but are driven to the urban centres in search of formal employment, as the only option for survival. To further explain the disadvantages of lack of access to agricultural information, farmers in some parts of the country are sidelined when it comes to producing agricultural product probably due to non-availability and lack of access to timely and up-to-date information that could enable them to achieve optimal yield from their farms.

In view of this, the modern day technology provides farmers with reliable information on areas like seedlings, methods of cultivation and fertilizer application, pest and weed control/eradication, and also livestock production and disease control. In addition, studies have indicated that access to timely and quality information have a significant role to play in the transformation process of any agrarian economy. The lack of access to timely information that would help farmers reach optimal agricultural harvest, would result for them only continue to grope in the dark. Studies further reveal how agricultural information could have impact in rural areas and that farmers would benefit from global information, if information centres, are situated in rural areas, complete with all information and communication gadgets (Yusuf, Shuaib, & Nofiu, 2020).

Furthermore, Mittal and Mehar (2013), maintained that despite the increasing demand for relevant and timely agricultural information in rural areas, there remains a digital divide that has prevented the percolation of benefits to the poor. Information technology can act as a remedy because of its wide reach and low cost of delivering information, it also has the advantage of greater flexibility, since it can enable information dissemination through both voice and text messages. Information technologies are being used for agricultural information to achieve productivity, reduce cost, and better price realization. It is in view of this that the

study seeks to examine the effect of agricultural information on productivity and economic development in our society and most especially in the rural areas.

It has been hypothesized that information and communication technologies (ICTs) can significantly aid in rural development and poverty reduction in developing countries due to an increase in farmers' ability to obtain information through technological devices. The use of technology is expected to meet farmers' information needs, particularly for agricultural information. Where technology is effective, farmers are expected to maximize its resources and availability for higher productivity. It has been observed that information communications and technology industries provide insufficient services to farmers, particularly in rural areas, to support agricultural productivity and development. As a result, farmers are increasingly turning to sources other than their local networks for services. This, among other factors, has resulted in farmers' low level of technology adoption which has resulted in farm production and patronage. The study will therefore, investigate the influence of agricultural information on productivity and economic development among farmers in Nigeria.

2. Research Method

The study used a descriptive survey research design to collect data from a representative sample of the population under study. The study population are registered farmers in Ogun state Nigeria. The proportionate stratified random sampling technique was used in the study. The study sample size totals 387 farmers and 363 copies of questionnaires were retrieved. Regression analysis was used to analyze the hypothesis in order to describe the variables in the study. Data was collected using a questionnaire, collated, and subjected to comprehensive data analysis using the Statistical Package for the Social Science (SPSS) software.

3. Result and Discussion

Presentation of Findings

Table 1: Demographic Information of Respondents

Characteristics	Categories	Frequency	Percentage
Age Range	20-30	52	14.3
	31-40	62	17.1
	41-50	103	28.4
	51 -60	88	24.2
	61 Above	58	16.0
	Total		363
Gender	Male	231	63.6
	Female	132	36.4

	Total	363	100.0
Marital status	Single	43	22.0
	Married	287	44.0
	Widow	33	33.9
	Total	363	100.0
Educational Qualification	Fist living	89	24.5
	SSCE	125	34.4
	BSc	79	21.8
	MSc	6	1.7
	PhD	3	.8
	None	61	16.8
	Total	363	100.0

The result gives detail of the demographic information of the respondents, which include Age, Gender, Marital status, and Educational qualification. The age distribution of the respondents ranged from 20 and above, and 41-50 (103, 28.4%) being the age group with the highest number of respondents while 20-30 (52, 14.3%) being the group with the least number of respondents. It implies that more of the respondents were adult and more responsible.

Finding revealed that male was with the highest number of respondents (231, 63.6%) while female were (132, 36.4%). Result further shows that majority (287, 44.0%) of the respondents were married and SSCE (125, 34.4%) was their highest qualification while PhD being the least qualification with (3, .8%).

Testing of Research Hypothesis

The following research hypothesis was tested at $\alpha = 0.05$ level of significance

Agricultural information does not significantly influence productivity and economic development among farmers in Nigeria.

Table: Agricultural information, productivity and economic development in Nigeria

Model	Unstandardised		Standardise	T	Sig.
	Coefficients		d		
			Coefficients		
	B	Std. Error	Beta		
(Constant)	87.840	6.386		14.723	.000
Agricultural Information	.419	.062	.282	4.191	.000
R = .282^a R² = .064, Adjusted R² = .62, F = 32.383, P = 0.000					
a. Dependent Variable: Productivity and economic development					

The table reveals that agricultural information ($\beta = .282$, $p < .05$) significantly influenced productivity and economic development among farmers in Nigeria. Therefore, the null hypothesis was rejected. 6% of the variation in the dependent variable (Productivity) was accounted for by the independent variable. This is in accordance with the United Republic of Tanzania (URT) (2010), on agricultural information and productivity. They asserts that in the agricultural sector, like in many other sectors, information is becoming a major input whereas knowledge and information plays a fundamental role for farmers to respond to opportunities that could progress their agricultural productivity. However, Information on the price factors such as prices of inputs and output, and non-price factors like information about availability of inputs, quality of seeds, modern techniques, etc. would play the primary role in improving farm productivity (Mittal & Tripathi, 2009). It has also been documented that information technology usage facilitates more competent production, aid in the distribution, marketing of products and services, and also helps to gain an understanding of international markets (Hooper, Kew, Herrington, 2010).

Discussion of Findings

These findings are in line with the study of Aker (2011) who examined the role of ICT in supporting access to information about agricultural technologies and extension services. She further explained that a number of challenges are associated with the use of ICT in agricultural extension, such as the need for literacy skills and technological knowledge, the limits of mobiles to display complex information, and technical difficulties in developing voice-based systems. Similarly, a study conducted by Frempong et al., (2007) in Ghana shows that the extent of SMS usage by farmers are lesser due to higher rate of illiteracy. By implication it was evident from the findings that farmers in Nigeria need to improve on their literacy skills and technological knowledge.

The findings reveal the level of relationships between the study's independent variable that is agricultural information and the dependent variable: productivity and economic development as expressed in the study's research hypothesis. Findings from the study reveal that agricultural information significantly influenced productivity and economic development. This is in agreement with the finding of Lionberger (1955) who found a close association between contacts with farm information and the level of farmers' productivity. Another study by Wilson & Gallup (1958) also found that responses regarding the use of farm information were related to such factors as income, status of farmers and tenure. This indicates high improvement in farmers' accessibility and utilization of information on agriculture.

Recommendations

1. More trainings, seminars and workshops should be organized by agricultural extension officers and other agencies involved to educate the farmers on the importance and use of mobile phones to enhance their agricultural business.
2. Telecommunication companies should improve on their network coverage, most especially, the rural communities.
3. Telecommunication companies in conjunction with the government agencies should provide a low tariff plan for farmers. This would enable them to adequately utilize their mobile phones for agricultural information.
4. The community leaders should liaise with the government for alternative power supply within the community in case there is constant epileptic power supply.

Ministry of Agriculture and Forestry and other agricultural agencies should support the awareness and encourage farmers towards the use of mobile phones in their business dealings.

4. Conclusion

The outcome of this paper has made this research an additional source of material to the body of literature in the area of agriculture, mobile communication and economic development. The study will make important contributions to knowledge in various ways. Firstly, ministry of

agriculture, extension officers and in particular farmers would benefit from this research by improving their communications for better access to vital information on agriculture and other information needs.

It also provides a road map that will assist the government through ministry of agriculture and communication agencies to establish policies that will promote agriculture, technology and productivity among farmers. In particular, the study has established the fact that the use of technology helps farmers to determine the market value of their products. The study concluded that agricultural information has improve farmers' information seeking behavior and increase productivity as well as improve economy of nations.

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