

Utilization of Information Communication Technology's Components for Coordination of Marketing, Agricultural Commodities in Oyo State Nigeria

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Abstract

Base on the fact that ICT's components are the fastest tools of disseminating information and Nigeria being an agrarian country that its utilization for marketing agricultural commodities (MAC) becomes pertinent. The study is a pilot project conducted in Oyo state because it is one of the food basket states in Nigeria. List of markets was the sampling frame work for the research; from where 8 markets were randomly selected. Sixty agricultural commodities marketers (ACM) were randomly selected from marketer's list. Interview schedule was used to solicit for information from (ACM). Regression analysis was used to ascertain the level of contribution of each ICT's components to MAC. Result revealed that mobile phone, radio, and television and automated teller machine awareness mean scores 3.5,3,4 .3. 3 and 2.5 respectively were higher than any other components put into consideration. Adoption rate of ICTs component for marketing agricultural commodities revealed that automated teller machine and mobile phone for marketing agricultural commodities adoption mean scores 2.5, and 2,8 were higher than any other ICT components

However, very few 32.3 % 22.1% of the marketers made use of ICT components for recording of sales of farm commodities and saving money respectively. High cost of power and telephone services, poverty level of agricultural marketers and limited access to ICT components ranked first ,second and third respective as the constraints to marketing of agricultural commodities among other components Regression analysis results indicated that mobile phone, radio, and automated money transferred machine are the most important ICT components in marketing of agricultural commodities. Despite the role of ICT's in ACM the marketers have not been able to make use of facilities frequently because of those constraints identified in this study hence, a programme that will provide solutions to those constrains should be promoted.

Keywords: Information, marketing, ICT components, agricultural commodity and utilization

1. Introduction

In an era of globalization accompanied by rapid technology change, a country's competitiveness and relevance in the global economy is increasingly determined by its capacity to effectively use information for design, production and marketing (Dzidonu,2002). Different strategies exist for improving agricultural marketing; the use of information and communications technology is one of these strategies. ICT consist of various collections of resources and technical tools that are used for connecting, spreading, storing and managing information. In other words, ICT represents the collection of hardware and software that is used for producing, preparing, transferring and storing data via devices such as computers, radios, televisions, etc., and it includes an extensive scope of traditional and modern media (Lashgarara et al., 2011). Marketing is a prime mover and stimulator of production because it gives point and purpose to the production process. It is a major tool of integrating the farming community into the market economy. It links various rural areas as well as rural and urban areas with a network for communication and exchange, which forms the basis for co-ordination of social and economic activities. In the rural areas, farmers can hardly get reliable production and market information that helps them sell their produce at the right price, moment and places. If the marketing systems are to have any meaning for farmers, the information they provide must be accurate, timely and farmers must understand it. In other words it must be in line with four 'A's (Accuracy, Availability, Applicability and Analysis) of marketing information. It has been found that the tools of ICT will provide agricultural marketing networking not only in the country but also globally. ICT is supposed to help targeted farmers in various ways. it helps farmers to have right decisions over the market and help them to fetch better prices from high value market or to have a good performing local market. The high production cost of farms and the increasing demand for food have pushed ICT to the forefront of the food supply chain. In developing world such as Sub-Saharan African (SSA) regions where the farm profitability is generally low, efforts have been focused on agronomy and production technologies for enhancing farm productivity. However, in competitive global and regional market producing a sound product is not enough to ensure agricultural farm viability. Market information is a prerequisite of farm business to enable the

management of the products flow and substantially increase the benefit. Using ICT causes fast accessibility to the market, increasing selection power, improving communication, identifying markets, saving time and energy, improving marketing, and reduces business costs (King et al.,2003). It is further argued that ICT have the potential to reduce poverty and improve livelihoods by empowering users with timely knowledge, reducing transaction costs, and appropriate skills for increasing productivity (Kenny, 2000). It provides fundamental change in all aspects of life, including knowledge dissemination, social networking, economic and business practices, political engagement, education, health, leisure, and entertainment. In a Country like Nigeria with 70% of its population living in the villages and depending on agriculture as their main occupation, accurate and timely information about the market prices of the agricultural commodities is of extreme significance. Agricultural Marketing in Nigeria is undergoing a significant metamorphosis because of economic liberalisation and globalisation. Advancement in communication and information technology has made the world a smaller place and a larger market at one go. The availability of prompt and reliable market information about what is happening in the market i.e. what quantities are arriving and what prices are quoted for different commodities considerably improve the decision making capability of the farmers and strengthens their bargaining power. The information is disseminated through various media like radio, newspapers, blackboard display and public address system at market yards. The information provided by these methods is stale and does not help the farmers sufficiently in taking decisions in marketing their produce. The farmers are also not able to know about the prices prevailing in other markets. Hence, farmers are, therefore, left with no alternative but to dispose of their produce in the nearest market, even at uneconomic prices. Market information is equally needed by other market participants in arriving at optimal trading decisions. To fully utilize the new emerging trade opportunities for the benefit of farming community, agriculture marketing information system in the country needs to be strengthened and Information and Communication Technology has a vital role to play in the process. Since the ICTs components penetrated Nigeria several ICTs components such as mobile phone, internet facilities, cash credit, Automated teller machine (ATM) e-banking and e-commerce are available in Nigeria. Despite their rapid deployment rates, only a few studies mainly from the information technology (IT) and engineering literature have been devoted in uncovering the factors that influence the diffusion of new information technologies and their proper use within an organization. Similarly, empirical studies regarding the impact of ICT diffusion and their proper use in organizations seem limited. Also the extent to which all these component are used in the transaction of agricultural commodities has not been empirically done. Hence, the need for this research that provided information on ascertaining awareness of agricultural commodity marketers on ICT components for marketing of agricultural commodities, determine adoption rate of these components for agricultural business transaction, ascertain agricultural business transaction marketers are using the components for, examine constraints to use of the agricultural ICT components and finally determine which of the ICT components made greater contribution to marketing of agricultural commodities

2. Research methodology

The study was a pilot project conducted in Oyo state because it is one of the food basket states in Nigeria. List of farm market was the sampling frame work for the research; from where 8 markets were randomly selected. Sixty agricultural commodities marketers (ACM) were randomly selected from farm marketer's list. Interview schedule was used to solicit for information from (ACM).. Using Lashgarara (2011), ICTs classification pattern; Nigeria ICTs for agricultural marketing was classified into three categories:

New ICTs: this group consists of computers, satellites, one-on-one connections, wireless phones (mobile), the internet, e-mail, the web, internet services, video conferences, CD-ROMs, personal computers (PC), distance control systems, informational-geographical systems, global positioning systems (GPS), electronic cameras, databases, cash credit, Automated teller machine (ATM) e-banking and e-commerce. *Old ICTs*: this group consists of radios, televisions, telephones, telegraphs, audio and video cassettes, films and slides. This group of technologies has been used for several decades. *Very old ICTs*: this group of technologies has been used for several centuries and includes newspapers, books, photo albums, posters, theatre, human interactions, markets and plays. Regression analysis was used to ascertain the level of contribution of each ICT's components to MAC

3.0 Results and Discussion

3.1 Farm Marketers awareness level of ICT components meant for marketing agricultural commodities

Table1 indicates awareness level mean scores for ICT components; form the Table mobile phone, radio, and television and automated teller machine awareness mean scores 3.5,3.4 .3. 3 and 2.5 respectively were higher than any other components considered in this study. Despite the advantages of the new ICT such as e-Banking, e-commerce, cash credit card and internet services components for marketing agricultural commodities the awareness of these components was very low. The implication of this is that the new ICTs are available in Nigeria but level of awareness to agricultural marketers is too low.

3.2 Adoption rate of ICT components for marketing agricultural for marketing agricultural commodities.

Viewing adoption rate of ICTs component for marketing agricultural commodities from Table 2 automated teller machine and mobile phone for marketing agricultural commodities adoption mean scores 2.5, and 2,8 were higher than any other ICT components in the new ICTs components category. In the old ICTs component category; adoption scores for radio 2.7 and television 2.5 were higher compared with other ICT components in the category while the adoption scores for very old ICTs components were generally too low. The implication of the findings is that marketing of agricultural commodities has gone beyond selling at the farm gates and ICT components for marketing agricultural commodities has started gaining ground among farm commodities' marketers.

3.3 Usage of ICT components for marketing agricultural commodities

Table 3 result revealed that 63.0% and 89.7% of the marketers used both new and old ICT components for searching for agricultural marketing information, 52.9% and 61.7% of the marketers used new and old ICT components respectively for searching for current prices for agricultural commodities. Also 55.8% and 50.0% of the marketers made use of new and old ICT components respectively for identification of sources of farm produce. However, very few 32.3 % 22.1% of the marketers made use of new ICT components for recording of sales of farm commodities and saving money respectively. Also 68.0% of the farm marketers withdraw money without entering the banking hall using automated teller machine card while 45.5% of the marketers transact farm commodities business using new ICT components. It could be inferred from the result that ICT components not only crucial for buying and selling of agricultural produce but maintain linkages between costumers, marketers and farmers. This finding corroborate King et al., 2003 where he found that using ICT causes fast accessibility to the market information, increasing selection power, improving communication, identifying markets, saving time and energy, improving marketing, and reduces business costs. It has been observed that some of the projects/ programs intended to promote commercialization of smallholder agriculture have included ICT components such as use of mobile phones to transmit real time price information to farmers, the use of computer/electronic screens to display market information (Okello et al., 2009), and the use of radio and TV to disseminate market information.

3.4 Constraints to usage of ICT components for marketing of agricultural commodities

Table 4 indicates reaction of agricultural commodities marketers to some of the constraints to use of ICT components for marketing of their products. High cost of power and telephone services, poverty level of agricultural marketers and limited access to ICT components ranked first, second and third respective as the constraints to marketing of agricultural commodities among other components. These constraints prevented marketers from having data on prices of agricultural commodities, information on market condition, regulation and new opportunities.

3.5 Regression analysis Showing Contribution of ICT components to marketing of agricultural commodities

As shown in Table 5 the regression analysis result shows that mobile phone, radio, and automated money transferred machine are the most important ICT components in marketing of agricultural commodities. These variables contributed 23.5%, 15.1% and 12.0% respectively to marketing of agricultural commodities. The finding that, mobile phone is the most important ICT components contributing to marketing of agricultural commodities; is in line with Oshunloye (2009) Jelassi and Enders (2004) where both found that mobile is the most usage tools of ICT component in marketing and that it is more suitable than tools such as email and internet for farmers. The finding is not surprising because in 2007 out of 778 million people in SSA, 152 million people are mobile phone users and 20 million are internet users (MIT, 2007; Internet World Statistics,2007).

4.0 Conclusion and recommendation

The study found that awareness level mean scores for ICT components such as phone, radio, and television and automated teller machine was higher than any other components put into consideration in this study. The implication of the findings is that marketing of agricultural commodities has gone beyond selling at the farm gates and ICT components for marketing agricultural commodities has started gaining ground among farm commodities marketers. However, very few of the marketers made use of ICT components for recording of sales of farm commodities and saving money respectively. It could also be inferred from the result that ICT components not only crucial for buying and selling of agricultural produce but maintain linkages between costumer's marketer and farmers easy and faster. High cost of power and telephone services, poverty level of agricultural marketers and limited access to ICT components ranked first, second and third respective as the constraints to marketing of agricultural commodities among other components. Regression analysis result shows that mobile phone, radio, and automated money transferred machine are the most important ICT components in marketing of agricultural commodities. Solution to constraints to use of ICT components as identified in the study should be provided and agricultural extension agents should extend their empowerment training to use of ICT components for marketing of agricultural commodities not only focusing and disseminating information

on increase in agricultural production.

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Table1: Farm marketers' awareness means scores of ICT components for marketing agricultural commodities.

ICT Classification	ICT Components	Awareness mean scores
New ICT	Automated teller machine	2.5
	e-Banking	1.5
	e-commerce	0.8
	Cash credit card	1.3
	Mobile phone	3.5
	Internet service	1.2
Old	Radio	3.4
	Television	3.3
Very Old ICT	News paper	2.2
	Books	1.5
	Poster	2.5
	Drama	1.5

1:Low, 2:Moderately high, 3:high, 4:Very much high

Table2:Adoption rate of ICT components for marketing agricultural commodities.

ICT Classification	ICT Components	Awareness mean scores
New ICT	Automated machine	2.5
	e-Banking	1.2
	e-commerce	0.6
	Cash credit card	1.6
	Mobile phone	2.8
	Internet service	1.3
Old	Radio	2.7
	Television	2.5
	Audio-video cassette	2.5
very old	News paper	1.5
	Books	1.4
	Poster	2.2
	Drama	1.6
	Agricultural exhibitions	

3:High, 2: Moderate, 1: Low

Table 4: Constraints to usage of ICT components for marketing of agricultural commodities

ICT Usage constraints	Ranking
High level of Illiteracy of farmers	7 th
High level of computer Illiteracy	6 th
People perception about ICT components	8 th
Limited Access to ICTs Components	3 rd
Lack of Significant Usage Opportunities	9 th
High Cost of Power and Telephone Service	1 st
Inconsistencies Government Policies in Telecommunications and Agriculture	4 th
Commercialization of Government Radio and Television	5 th
Poverty level of agricultural commodities marketer	2 nd

Variables	Coefficient of determination (r^2)
Automated Machine	0.120
Internet Service	0.024
E-mails	0.034
e-commerce	0.002
Cash credit card	0.082
Mobile phone	0.235
Radio	0.151
Television	0.081
Newspaper	0.075
Books	0.010
Poster	0.060
Drama	0.003