

Use of Social Media in the Marketing of Agricultural Products and Efficiency in the Cost of Advertisement of Agricultural Products in South-West Nigeria

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ABSTRACT

The study sought to determine the extent to which the usage of social media in the marketing of agricultural products in South-West Nigeria can enhance efficiency in the cost of marketing agricultural products. It employed the survey research design to collect data with the help of a structured questionnaire to elicit information from respondents selected from six (6) south-western states. Research data were analysed using structural equation modelling. The results showed that the use of social media (WhatsApp and Twitter) in marketing of agricultural products significantly enhances efficiency in the cost of advertising agricultural products through significant reduction in the cost of marketing agricultural products. The managerial implication is that optimization of marketing cost of agricultural products can be achieved through social media usage in advertising. The social implication is that increased participation of youths in agriculture as a result of the considerable reduction in the cost of marketing agricultural products due to the use of social media in the marketing of agricultural products will significantly reduce social vices in the societal

KEYWORDS: Agricultural marketing; efficiency in marketing; social media marketing; use of WhatsApp; and use of Twitter

Background to the Study

Food is critical to man's existence. It is one of the most basic needs of man as captured in Maslow's hierarchy of needs. Before man can embark on any other activity, he must first solve the problem of hunger. It is for this reason that no country can afford to neglect agriculture and allied activities. Agricultural sector in many countries has been described as the engine of economic development (Food and Agricultural Statistics, 2004). History consistently shows that no country has ever successfully industrialized without first achieving significant improvements in agricultural performance. Thus, green revolution must, of necessity, precede industrial revolution because the key players in industrial revolution need to be well fed to think well and have the energy to partake in industrial revolution. Besides, industrial revolution will require some agricultural raw materials as inputs. It is thus

very important to promote agriculture in contemporary economies. The need to promote agriculture lies in its importance to nation-building all over the world. Agricultural sector performance particularly through improved productivity is one of the major ways of reducing poverty in developing countries (Nebo & Ejionueme, 2017), which is consistent with the key macroeconomic goals of any economy.

Nigeria is largely an agrarian state. Prior to independence, agriculture was the mainstay of the economy. Even with the current domination of the other sectors of the economy by the oil sector in terms of foreign exchange earnings coupled with the seeming relegation of the agricultural sector, agriculture still contributes more to Nigeria's Gross Domestic Product (GDP) than other sectors.

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However, overtime, the agricultural sector has been so relegated in Nigeria that it is largely unattractive to the current generation of youths. Worse still is the fact that the traditional marketing techniques have not been able to assist farmers in minimizing the cost of marketing agricultural products in a manner that will enable farmers optimize their marketing goals. It is for this reason that a different type of agricultural marketing deserves to be given due attention in order to ensure that the earnings potential of agriculture are not undermined.

The significance of agricultural products marketing derives from the creation of the necessary awareness to customers on the availability of the agricultural products, the locations and the quantities available through a medium that has become popular to the young and old. Such awareness can facilitate sales of agricultural products, which are often perishable, and thus improve efficiency in the marketing of agricultural products in the short and long run. Given the popularity of the use of social media across the different age grades in Nigeria, it is logical to expect that the use of social media in the marketing of agricultural products will make a significant impact on the reduction in the cost of marketing agricultural products. This underscores the essence of this study.

The main objective of this study is to investigate the impact of the adoption of social media (Facebook, WhatsApp and Twitter) in agricultural marketing by farmers in South-west Nigeria on the cost of marketing agricultural products. The specific objectives are to: determine the extent to which the use of social media (Facebook, WhatsApp and Twitter) by farmers reduces the cost of marketing agricultural products in South West Nigeria.

Literature Review

Concept of Agricultural Marketing

Agricultural marketing is the creation and retention of customers for agricultural products. Thus, it is the marketing of agricultural products. "Agricultural produce marketing is the process of creating demands and motivation of sellers to distribute agricultural items unto ultimate consumers at a profit" (Onyeabor, 2009). Agricultural marketing has been defined as "the anticipation, identification and satisfaction of the needs of consumers in agricultural markets", beginning the determination of what products consumers would need in the pre-production stage, production to specification in the production stage and in the post-production stage, ensuring that what is produced are packaged, processed, stored, transported, standardized, graded, priced, promoted and made available to the consumers through various marketing channel members such as farmers, agents,

wholesalers and retailers (Ejionueme & Nebo, 2014). According to Olukosi and Isitor (1990), agricultural marketing is the performance of all activities which direct the flow of goods and services to the consumer from the producers (farmers) in order to accomplish the producer's objectives. Agricultural marketing is also considered by many selling or transferring the product to another person for a price. Selling is central on the micro concept of marketing but it is only part of it. Marketing includes packaging, storage, transportation, pricing, financing, risk bearing and even product design (Olukosi & Isitor, 1990), Agricultural marketing involves all those physical, legal and economic services, which are necessary to make products from the farm available to the consumers. Thus creating of form, place, time, and possession utilities is derived from agricultural marketing. Agricultural marketing has further been defined as the performance of all business activities involved in the flow of goods and services from the point of initial agricultural production until they are in the hands of the ultimate consumer (Kohls, 1985).

Conventional Strategies used in Marketing Agricultural Products

The major constraints to the marketing of agricultural products in Nigeria revolve around product, price, distribution and marketing promotion. The implication is that traditionally, marketing of agricultural products in Nigeria has revolved around product, price, and distribution as well as marketing promotion (Ejionueme & Nebo, 2017)

Product: The role of the product in marketing of agricultural products is that it should be desirable, consistent with specifications, In other words, the marketer should engage in research to identify the products that will meet the buyers' needs. Agricultural products can be classified into highly perishable, bulky, homogeneous, seasonal, geographically concentrated, raw or unprocessed, unstandardized quality and difficult to predict production volume. The desirability of agricultural products in a geographical location has implications on its demand and thus serves as a fundamental influencing factor of its marketing (Nebo & Ejionueme, 2017 as well as Asogwa and Okwoche, 2012). "Marketing covers all business functions including production and in its broadest sense, it also covers production decision. So it can be argued that in farming such decision as the variety of crops to grow or the breed of animal to keep are marketing decisions" (Asogwa & Okwoche, 2012).

Price

Owing to the homogeneity of agricultural products, the interaction of the free market forces of demand

and supply often play a significant role in the determination of the value or prices of agricultural commodities, especially in season. In fact, agricultural products in season presents on of the typical examples of a perfect competition. The implication is that the farmer is a price taker, at least when the products are offered for sale in season. The role of pricing in marketing of agricultural products is to price competitively to ensure that the products are not left unsold because unsold products may lead to losses since most agricultural products are perishable. The ability of any supplier to price competitively depends on the response of other producers of the same farm produce that serve the same market.

Distribution of agricultural Products

Distribution is the transfer of title of a product from the farmer (first owner) the consumer (also referred to as the last owner (Ejionueme & Nebo, 2014). Unless farm products from the orchards, ranches or farms get to the consumers who need them, all agricultural marketing efforts amount to nothing. In the course of delivering products to the end users, the products and their titles pass through certain paths or routes from the producers to the consumers. These routes are called distribution or trade channels. As far as distribution is concerned, we seek a distribution system with effective channels to ensure uninterrupted distribution of the farm products from the farm to every nuke and cranny where the product may be required. This will require an effective *transport system* consisting of modes such as trains, pipeline, trucks, air craft, vessels and ocean liners. Another component of distribution is storage, which will help agricultural marketers to hold excess produce during the harvesting seasons as well as protect the farm produce against adverse weather conditions.

Marketing covers all business functions including production and in its broadest sense, it also covers production decision. So it can be argued that in farming such decision as the variety of crops to grow or the breed of animal to keep are marketing decisions. The primary role of an integrated marketing system is to add form, place, time and possession utility, so that the subjective satisfaction of consumers is maximized. Barker (1989) stated that there is no universally accepted definition of marketing indicating the variety of opinions which exist concerning the subject. Kotler (1972) give a very concise definition that marketing is the set of human activities directed at facilitating and consummating exchange. Kempner (1976) noted that marketing is the process in a society by which the demand for economic goods and services is

anticipated or enlarged and satisfied through the conception, physical distribution and exchange of such goods and services. Hence with any individual company which is attempting to satisfy demands of this nature, there must always be marketing process. The success of the enterprise will depend on the ability of the management to give satisfaction and to obtain the appropriate net profit.

From the foregoing, the traditional marketing of agricultural products consists of determining the farm products, producing in the right quality, storing it to ensure that it is available, transporting it to the places where they are required. It consists mainly of non-verbal communication between the producer and the consumer. The producer (farmer) conceives a product that is required by consumers, produces it in a manner perceived to be consistent with customers` requirement, stores it, distributes to locations perceived to have demand.

Use of Print and Electronic Media

Beyond the product-price-storage-distribution strategy, large organisations and government have been known to market their products through advertisements in the print and electronic media. The essence of such advertisements is to create awareness of the availability of the products, the locations where they are available as well as the expected benefits of using those products; especially if the products can be substituted for other products. Awareness created through such advertisements often help in facilitating consumers` ability to access the products and thus facilitate the sales of the farm products. The use of print and electronic media in advertising marked the first deliberate attempt at the marketing of agricultural products which is consistent with Peter Drucker`s view of marketing as the creation and retention of customers at a profit. Here, the awareness creation contributes significantly to the creation of the customers but beyond the creation,, the product quality, pricing, distribution and after sales services will come to play in retention of the customers. While the print and electronic media often have a large coverage, some major shortcomings of their use include apathy of people to the use of print media, due to a departure philosophy from reading and high level of illiteracy. Others are the epileptic power supply, which makes electronic media an unreliable source of information as well as the high cost of advertisement through the print and electronic media.

Adoption of social media for Agricultural Marketing in South West Nigeria

In view of the shortcomings of the print and electronic media in marketing agricultural products, the need for a more efficient strategy has been long

overdue. The rapid growth of the mobile phone use around the world in the last few decades provided a viable marketing alternative for agricultural products in Nigeria and other emerging economies. Mobile phones have contributed significantly to the empowerment of people in developing countries in spreading information networking coverage in the remote areas. Consequently many rural areas are getting great benefit out of its usage in various spheres of endeavour. This has culminated in the improvement of the living standard of poor farmers in developed nations.

Theoretical Framework

This study adopts the innovation diffusion theory. The diffusion of innovations theory examines how, why, and at what rate innovations spread through social systems (Rogers, 2003). Rogers (2003) defined diffusion as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (p. 5). This theory seeks to explain how ideas and technologies, such as social media, spread through social systems. Although social media is a new division of media, several studies have been conducted to explore how this innovation has diffused. Avery et al. (2010) examined the use of social media among public relations practitioners within the medical industry in communities of various sizes and found out that the most common barriers for adoption were lack of trialability and observability. Waters (2010) explored the use of social media among nonprofit organizations. He found out that while some nonprofits organisations embrace social media technologies, most are waiting to see how other nonprofit organizations use the tools before they adopt. Doerfert, Graber, Meyers, and Irlbeck (2012) researched Texas agricultural producers’ use of traditional and social media marketing techniques in marketing and found the producers to be in the beginning stages of adoption, according to Rogers’ (2003) model..

Empirical Review

This section reviews empirical literature on the use of mobile technologies in marketing agricultural products. The empirical review is examined under four major subheadings - Use of mobile communication technologies in marketing and cost of marketing agricultural products,

Use of social media in marketing agricultural products and Cost of Marketing

Balkrishna and Deshmukh (2017) investigated the on role of social media in agriculture marketing and its scope. They employed a descriptive research and primary data obtained through a survey were used.

Questionnaire and in-depth interviews from farmers who use social media served as the research instruments. Results indicated that social media is very useful in agricultural marketing owing to time and cost savings for farmers. Some of the challenges were: mutual mistrust and the difficulty in selling of agricultural commodity on social media.

Ogunniyi and Ojebuyi (2012) investigated “Mobile Phone Use for Agribusiness by Farmers in Southwest Nigeria” with a view to ascertaining how farmers in Southwest Nigeria use mobile phones for agribusiness, the associated benefits as well as the challenges. Driven by theory of information and communication technology for development, they employed survey and focus group discussion techniques. Sample selection consisted of stratified random and purposive sampling techniques. Questionnaire and FGD guide were used to collect the research data. The results showed that the mostly used feature of mobile phones by farmers is radio while the mostly deployed phone service is voice call. Results further indicated that the use of mobile phone contribute to enhancement in farmers’ income, reduction in transaction and transportation costs, and increase in farm productivity. Epileptic electricity supply was identified as the major constraint to the effective use of mobile phones for agribusiness.

Vassiliadou, Vogiatzi, Amygdalas and Mpoutakidis (2011) investigated the use of social media among students of Technology Agriculture and their role in promoting agribusiness. They paper examined the relationship between the students and social media platforms by presenting the use of social media platforms by students between the ages of 19 and 31. Specifically it examines how much time they spend “socializing” through social media and the reasons they use them as well as the expected benefits. The results showed that social media usage has some benefits: facilitation and flow of knowledge/information, as well as cheap advertisement of products. In view of the foregoing, the following hypothesis was formulated:

H_{01} : There is no significant relationship between the use of Facebook in agricultural marketing and cost of marketing agricultural products

H_{02} : There is no significant relationship between the use of WhatsApp in agricultural marketing and cost of marketing agricultural products

H_{03} : There is no significant relationship between the use of Twitter in agricultural marketing and cost of marketing agricultural products

Jose and Lokeswari (2018) investigated users and non-users of ICT among farming community. in India. They considered the specific role of ICT in rural development through its application in agriculture. They examined and compared the differences in livelihoods of farmers who make use of ICT and of farmers who do not use ICT for information in agriculture. They employed the qualitative research design with in-depth interview serving as the research instrument. The results showed that farmers who used Internet facilities for accessing agricultural related information lack practical training to access the needful information to tackle the problems confronting them on the farms.

Gap in Literature

Adoption of social media and other communication technologies in the marketing of agricultural products is not deficient in empirical literature. White *et-al*(2014), Balkrishna and Deshmukh (2017) as well as Khou and Suresh (2018), investigated use of social media for agricultural marketing; Akintunde and Oladele(2019) and Alavion *et-al* (2016) examined determinants of ICT usage in the marketing of agricultural products Jose and Lokeswari (2018) investigated users and non-users of mobile communication technologies in agricultural marketing; Lashgarara *et-al* (2011) examined ICT capabilities in improving marketing of agricultural productions, Ogunniyi and Ojebuyi (2012) investigated “Mobile phone use for agribusiness by farmers in Southwest Nigeria while Mwangi and Wagoki (2016) surveyed leading media groups to investigate the effect of social media on performance of advertisement business in the mainstream media in Kenya. Although a few of the studies investigated the use of social media, none appears to have focused on the implications of the usage of social media or mobile technology in agricultural marketing on efficiency; neither is there adequate empirical evidence on how the use of social media in the marketing of agricultural products can influence efficiency. Besides, related studies on the research problem in south-west Nigeria are either non-existent or relatively scanty. This study sought to fill these gaps.

Research Methods

The study employed the quantitative research method. Specifically, the conclusive research design consistent with Inegbedion (2018), Inegbedion, Obadiaru, Obasaju, Asaley and Lawal (2019) and Inegbedion, Obadiatu and Bello (2016) while the survey method was used in data collection

Participants

The population of the study consisted of four thousand, Ten thousand, one hundred and sixty-eight (10168) farmers registered in cooperative societies. Of this number, 2248 are from Lagos, 2840 are from Ondo State, 1520 are from Ogun state, 1680 are from Oyo, 1640 are from Ekiti and 1200 are from Osun. Taro Yamane formula was used to estimate a sample size of 385 and proportional allocation was used to assign 85, 58, 64, 70, 62, and 46 to Lagos, Ogun, Oyo, Ondo, Ekiti and Osun States respectively. Of the 385 respondents sampled, 248, representing 64.4% of them voluntarily participated in the study. The participants' selection was from farmers' cooperative societies in the six states using random sampling. The choice of these states was informed mainly by convenience. Specifically, samples were taken from the current members of the cooperative societies. The sample consisted of crop, poultry, fish and piggery farmers who belong to cooperative societies in the states with evidence of usage of social media (Facebook, WhatsApp or Twitter), among others. The sampling frame was requested from the management of the cooperative societies.

Materials

Based on the sampling frame, a sample of respondents was selected. Thereafter, the sampled respondents were requested to participate in the study through the social media. A survey was constructed and used to examine use of social media in agricultural marketing and its implication for efficiency through the administration of a questionnaire, which served as the research instrument. The questionnaire contained bio-data questions and 5-point Likert scale questions dealing with social media usage in agricultural marketing and its implication for efficiency in south west Nigeria. Information was elicited from the respondents via structured questionnaires through the social media channels (Facebook, twitter and WhatsApp).

Reliability and Validity of Instrument

A pilot test was conducted on 20 of the sampled respondents. Based on the results obtained from the pilot test, validity and reliability of the instrument were determined. For validity, experts in the Federal Polytechnic, Ado received the instrument for scrutiny. This served to fulfill the condition for face validity. Subsequently, content validity index (CVI) conducted on the resultant principal components using both scale and item content validity measures. The results obtained were 0.71 and 0.77 for scale and item CVI thus showing that the instrument was valid since a value of 0.7 is indicative of a valid instrument (see Table 1).

Table 1 Content Validity Index

Variable	I-CVI	S-CVI
Use of Facebook and Cost Reduction	0.71	
Use of WhatsApp and Cost Reduction	0.81	
Use of Twitter and Cost Reduction	0.72	
Entire Instrument		0.75

Source: Author's computations 2021

Cronbach alpha (α) was used to determine the reliability of the instrument. The computed Cronbach alpha values were 0.726, 0.66, 0.771, 0.67, 0.69, 0.82, 0.92, 0.67 and 0.764 for use of Facebook in the marketing of agricultural products, use of WhatsApp in the marketing of agricultural products, and use of Twitter in the marketing of agricultural products. The computed alpha values are either approximately 0.7 or more than 0.7, which is consistent with the baseline according to Hair *et al* (2017). Respectively. (Approximately 0.7, to one significant figure) while the Cronbach alpha based on standardized items is approximately 0.72. This shows that the items in the instruments are internally consistent as the Cronbach alpha value is up to the benchmark of 0.70. The implication is that the instrument is highly reliable (see Table 2).

Table 2 Reliability Statistics

Variable	Cronbach Alpha
Use of Facebook and Cost Reduction	0.726
Use of WhatsApp and Cost Reduction	0.66
Use of Twitter and Cost Reduction	0.771
Entire Instrument	0.764

Source: Author's computations 2021

Model Specification

$$\text{CMAP} = f(\text{UFB}, \text{UWA} \text{ and } \text{UTW}) \dots (1)$$

In specific terms, equation 1 yields

$$\text{CMAP} = \beta_0 + \beta_1 \text{UFB} + \beta_2 \text{UWA} + \beta_3 \text{UTW} + e \dots (3)$$

Where

CMAP = Cost of marketing agricultural products;

UFB = usage of Facebook;

UWA = usage of WhatsApp;

UTW = usage of Twitter; and

e. = random error observed along with the variables

Method of data analysis

Research data were analyzed using one structural equation model. The structural equation model served to test for the predictive power of the constructs. Besides, the signs of the coefficients of the constructs in the structural equation model served to infer the nature of the relationships between usage of social media in agricultural marketing and cost of marketing agricultural products on.

Ethical Compliance

The author complied with ethical standards in the conduct of the study as the author sought the consent of respondents' and they were at liberty to refuse their consent.

1. Results

The results focus on the impact of social media usage on cost reduction in the marketing of agricultural products in south west Nigeria

Social media usage and Reduction in cost of advertising agricultural products

The computed Z and the associated asymptotic significant probabilities were found to be -3.62 ($p \leq 0.001$), -7.13 ($p \leq 0.001$), and -1.49 (0.135) for the use of Facebook in the marketing of agricultural products, use of WhatsApp in the marketing of agricultural products and the use of Twitter in the marketing of agricultural products respectively. The implication is that the use of Facebook and WhatsApp in the marketing of agricultural products both have a significant influence on the reduction in the cost of marketing agricultural products at the one-per cent level since the asymptotic significant probability associated with the tests were both less than 0.001,

the assumed level of significance. However, the same cannot be said of the use of Twitter in the marketing of agricultural products since the asymptotic significant probability associated with this test was neither less than one per cent nor less than five per cent. Consequently, we reject the first two hypotheses but we do not reject the third hypothesis (see Table 1). Furthermore, all the independent variables (Use of Facebook, WhatsApp and Twitter in the marketing of agricultural products) were negatively related to reduction in the cost of marketing agricultural products. This shows that use of Facebook and WhatsApp in the marketing of agricultural products have significant influence in the reduction in the cost of marketing agricultural products. However, although the use of Twitter in the marketing of agricultural products is also negatively related to the reduction in the cost of marketing agricultural products, the negative relationship was not significant.

The likelihood ratio test of the model versus saturated had a computed Chi-square of 0.00. This value was very insignificant. The implication is that the model is not different from the saturated model. This suggest that the model is good (see Table 3 and figure 1)

Table 3 Structural equation model of use of Social media and Reduction in the Cost of Marketing Agricultural Products

	OIM						
Standardized	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]		
Structural							
usmc <-							
fcr	-0.1926124	-0.053244	-3.62	0.000	.0882561 .2969688		
wcr	-0.3354762	-0.0470366	-7.13	0.000	.2432862 .4276662		
tcr	-0.0761116	-0.0509266	-1.49	0.135	-.0237026 .1759259		
_cons	3.130912	.3847558	8.14	0.000	2.376804 3.88502		

LR test of model vs. saturated: chi2(0) = 0.00, Prob > chi2 =

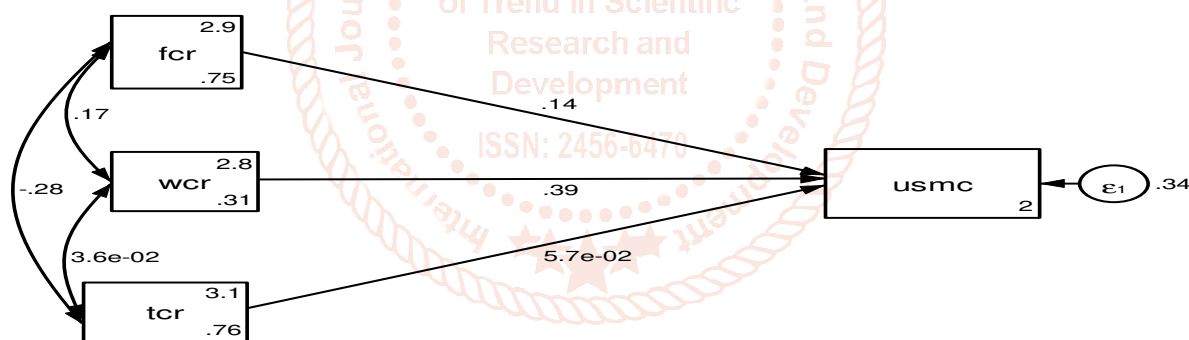


Figure 1 Use of Social Media in the marketing of agricultural products and reduction in the cost of marketing agricultural products

Tests for Goodness of Fit

Three goodness of fit measures were employed in this study; they are: the equation level goodness of fit, Wald’s test for equations and stability analysis. The equation level goodness of fit test shows that fifty-six point seventy-nine per cent (56.79%) of the variation in the dependent variable (reduction in the cost of marketing agricultural products) is explained by the independent variables (Use of Facebook, WhatsApp and Twitter). This shows a good fit (see Table 4)

Table 4 Equation-level goodness of fit (a)

	Variance					
depvars	fitted	predicted	residual	R-squared	mc	mc2
observed						
usmc	0.3178861	0.1805242	0.2373618	.567889	0.75358	0.567889
overall				0.567889		

The results of the Wald's test indicate that the coefficients of the independent variables (use of Facebook, WhatsApp and Twitter in the marketing of agricultural products) are significantly different from zero. In other words, the model is a good fit to the data (see Table 5).

Table 5 Wald tests for equations (a)

	chi2	df	p
observed			
usmc	90.70	3	0.0000

The stability analysis of simultaneous equations indicates that with eigenvalue and modulus values of zero the stability index is 0 which means the model satisfies the stability condition (see Table 6).

Table 6 Stability analysis of simultaneous equation systems (Eigenvalue stability condition)

Eigenvalue	Modulus
0	0

Demographic variables and Social media Usage

F test were conducted to compare respondents' perception with demographic variables. A comparison of respondents' perception of usage of social media in cost reduction and demographic variables had the following computed F and associated significant probabilities 1.12 (0.348), 1.36 (0.25), 0.673 (0.671) and 1.28 (0.28) for age, sex, educational qualification and farm category respectively. The implication is that respondents' perception of the significance of the usage of social media in reduction of agricultural marketing cost is not influenced by demographic variables (see Table 7).

Table 7 Respondents' Perception and Demographic Variables

	Age	Sex	Educational Qualification	Farm Category
F	0.29	1.26	0.961	0.734
Sig.	0.83	0.27	0.51	0.730

Discussion of Findings

Results of the study indicate that the use of Facebook and WhatsApp in the marketing of agricultural products has significant influence on the reduction of the cost of marketing agricultural products. The implication of the significance of social media on the reduction of the cost of marketing agricultural products is that it enhances efficiency in the marketing of agricultural products. The results are consistent with the findings of Mwangi and Wagoki (2016), White, Meyers, Doerfert and Irlbeck (2014), Ogunniyi and Ojebuyi (2012), Balkrishna and Deshmukh (2017) as well as Vassiliadou, Vogiatzi, Amygdalas and Mpoutakidis (2011).

The structural equation model shows that Facebook and WhatsApp usage in the marketing of agricultural products are significant predictors of cost reduction in the marketing of agricultural products while Twitter was not significant. Thus, usage if Facebook and WhatsApp in the marketing of agricultural products have significant implications on the marketing of agricultural products. This tends to suggest that the

usage of Twitter by farmers in the marketing of agricultural products is minimal compared to the usage of Facebook and WhatsApp. The coefficient of determination of 0.568 shows that 56.8% of the variation in advertising cost of farmers is attributable to the usage of social media in advertising.

Conclusion/Recommendations

In view of the problem definition and findings, the research concludes that: The use of social media (Facebook and WhatsApp) in marketing of agricultural products significantly influences cost reduction and hence efficiency in marketing. Thus, adoption of social media in marketing of agricultural products enhances efficiency of agricultural marketing in south-west of Nigeria.

This study has made significant contributions to marketing and management knowledge. First, it is among the few studies that has examined social media marketing's influence on marketing efficiency in Nigeria. Secondly, it is among the very few to have studied adoption of social media in agricultural marketing in south-west Nigeria. It has thus made

concerted effort in reinforcing the interest of farmers in the use of social media in the marketing of agricultural products in south-west Nigeria.

The study is not without limitations which indicate the need for further studies to minimize the constraints to this study. Out of six south-west states in Nigeria, only three received the attention of the investigation. The use of only members of the farmers' cooperative society constitutes a limitation to the results of the study. Farmers who do not belong to the cooperative society may have some dissenting perceptions from those of the members of cooperative society. In view of the problem definition and research findings, the following recommendations are suggested.

Policy makers in government should be concerned about increasing agricultural production as well as the marketing of agricultural products to enhance earnings from agricultural production. This will attract many unemployed youths to the agricultural sector and thus help to guarantee food security as well as drastically reduce the level of unemployment in the country. Consequently, policy makers in government and other stakeholders like managers of cooperative societies and other farmers' associations should promote the adoption of social media in agricultural marketing through sensitization of the farmers as well as outright provision of modern communication gadgets to farmers at subsidized prices. Future studies should attempt to minimize limitation associated with cultural bias by including more south-west states in the sample as well as try to include non-members of the farmers' cooperative society in the sample.

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Appendix

Questionnaire

INSTRUCTION: Please mark (X) the box against your chosen answer.

SECTION A: DEMOGRAPHIC INFORMATION

1. Age bracket: 1-20 Years [] 21-40 Years [] 41-60 Years []
2. Sex: Male [] Female []
3. Highest Educational Qualification: ND/NCE [] HND/First Degree [] Higher Degree []

SECTION B

Indicate the extent to which you agree with each of the following items

1	2	3	4	5
Strongly Disagree	Disagree	No View	Agree	Strongly Agree

S/N	Item	1	2	3	4	5
1	Use of Facebook in marketing of agricultural products reduces marketing cost					
2	Use of Facebook in marketing of agricultural products facilitates information flow					
3	Use of WhatsApp in marketing of agricultural products reduces marketing cost					
4	Use of WhatsApp in marketing of agricultural products facilitates information flow					
5	Use of Twitter in marketing of agricultural products reduces marketing cost					
6	Use of Twitter in marketing of agricultural products facilitates information flow					