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Effectiveness of New Media Technologies on Agricultural Production among Rural Households in Akwa Ibom State, Nigeria

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ABSTRACT

Background: This study assessed the effectiveness of new media channels on agricultural production among rural households in Akwa Ibom State. The objectives of the study were; to identify the socio-economic characteristics of the respondents in the study area, identify the types of new media channels available to rural households in the study area and assessed the effectiveness of new media on agricultural production in the study area.

Methods: A multi stage sampling technique was used to select 250 respondents used for the study. Data were collected using structured questionnaire and analyzed using both descriptive and inferential statistics.

Result: The results of the study revealed that 36.6% of the respondents were aged between 41-50 years, with 39.20% and 28.20% having secondary and primary levels of education respectively. Whatsapp was the most popular new media channel available to the farming households. In terms of effectiveness, it was observed that new media was effective mostly in improving crop and animal husbandry. The results of the hypothesis showed that age of the farmers and educational level of the farmers were found significant. It is concluded that new media is a veritable tool in the development of agriculture in Akwa Ibom State in particular and Nigeria in general.

Key words: Agricultural production, Effectiveness, Households, New media, Technologies.

INTRODUCTION

The new media is the latest buzzword in communication world. It has taken the world by surprise, with its cutting edge technology to connect rural households with the world. The new media is the world's largest communication network, the network of networks, scattered all over the world, imagine a globe of the world with national boundaries, millions of rural people linked together with information (Yocom, 2021 and Effiong and Aboh, 2019). The new media platforms enable users to send and receive instant messages, pictures and videos or a combination of all, example; twitter, Facebook, 2go, Whatsapp, Youtube in agriculture, health, weather, climate, government policies, political issues among others (Yocom, 2021 and Effiong and Aboh, 2019b; Effiong *et al.* 2023; Effiong and Iyamah 2022 and Effiong, 2013).

In agriculture, new media promotes better communication and approach to agricultural innovation and technology dissemination. A farmer gains confidence in solving his or her farm challenges and psychological problems by the extension officers, hence make agriculture stay comfortable (Effiong and Asikong, 2012; Effiong, 2012). According to Idisa *et al.* (2013) the agricultural section is confronted by the challenge of increasing population in a situation of decreasing availability of natural resources. Factors of particular concern according to the authors are water shortages, declining soil fertility, effect of climate change and rapid decrease of arable lands due to urbanization. These they said calls for transformation in ways of sourcing and dissemination of technical information by the extension workers, which will eventually transform the agricultural sector. This opportunity requires the use of new media channels for information delivery that can take care of current and appropriate technological knowledge from extension workers to farm households in Akwa Ibom State without much distortion of facts (Aboh and Effiong, 2019c; Idisa *et al.,* 2013; Aboh and Effiong, 2019d). Also, agriculture is dynamic in nature and needs a dynamic approach in technology delivery to rural households (Ijioma *et al.,* 2012; Effiong and Enenyi, 2023; Effiong *et al.*, 2021; Effiong and Effiong, 2015).

Traditionally, in Akwa Ibom and Cross River States 40% of the rural farmers' mode of communication reflects their social structure and ideologies which are covered in it (Aboh and Effiong 2019e; Effiong, 2023). This is because the evolution of communication in the traditional society has been a part of historical process in the past (Ben, 2010). Moreso, Effiong *et al.* (2015) noted that media information

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is an indispensable factor in the practice of farming, such that about 70% of the extension delivery is through the new media. Aboh and Effiong (2019a); Effiong *et al*. (2023) in their study on the use of information and communication technologies by cassava farmers in Nsit Ubium Local Government Area, Akwa Ibom State noted that information plays a vital role in our present day society, at 70% probability level and this is as a result of the advancement in new media and its accessibility.

According to Aboh and Effiong, (2019c), over the years there has been alarming rate of information distortion, spoilage of produce, poor technology innovation dissemination among farmers and inadequate networking between research institutes, extension officers and the farmers. It is high time farmers embrace the opportunities offered by new media; such as the use of smart phones, internet services and e-marketing to harness the needed information on agricultural production, processing and marketing. This study would address the following objectives, identify the socio-economic characteristics of the rural households in Akwa Ibom State, identify the types of new media channels available to rural households in Akwa Ibom state and assess the effectiveness of new media on agricultural production in Akwa Ibom state.

Test of Hypothesis (HO_1)

HO_1

There is no significant relationship between socio-economic characteristics of the respondents and effectiveness of new media on agricultural production among rural households in the study area.

MATERIALS AND METHODS

Location of study

This study was carried out in Akwa Ibom State, Nigeria. Akwa Ibom State is a region in the South-South area of Nigeria, bordered by Cross River State on the East, on the West by Rivers State and Abia State on the North and on the South by the Alantic Ocean. The State lies between latitudes 4°321 and 5°331 North of the equator and longitudes 7°251 and 8°251 East. It occupies a total land area of 7.246 Square kilometers, with a population of about 3,920,208 million people (NPC, 2006). The state has six (6) agricultural zones namely; Oron, Abak, Ikot Ekpene, Etinan, Eket and Uyo and has a very high potential for agriculture (Effiong, 2023, Effiong *et al.,* 2023 and Effiong and Iyamah, 2022). The State is suitable for food crop production, tree crops, fish and livestock farming; Crops widely grown are cassava, yam and oil palm, rice, fluted pumpkin, water leaves, banana and plantain (Effiong, 2012 and Effiong *et al*., 2021).

A multi-stage sampling technique was used for the study. At stage one, one agricultural zone was purposively selected from each of the three geo-political zones (Uyo, Oron and Ikot Ekpene) of the State namely; Etinan, Uyo and Oron zones, this is because these zones are predominantly crop and livestock farmers. At stage two, two agricultural zones were randomly selected namely; Etinan and Uyo zones. At stage three, one hundred and twenty five (125) registered contact farmers were randomly selected from the list of registered contact farmers in each of the zones, making a total of two hundred and fifty (250) registered contact farmers used for the study.

Method of data analysis

Data were analyzed using descriptive statistics such as frequency counts, percentage, means and standard deviation, while inferential statistics were measured using Tobit regression model, the Tobit regression model was used to test if there was any significant relationship between socio-economic variables and new media channels of communication.

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

The result in Table 1, showed the socio economic characteristics of the respondents. The results indicated that 39.60% of the respondents were between the ages of 41-50 years. This implied that the farmers were in their agile age and could effectively utilize new media services for improved agricultural production. The study also revealed that majority (61.60%) were males implying that male household farmers in the study area dominated the new media space much more than the females. Also, majority of respondents 39.20% attended secondary school level of education, while 25.20% attended primary level of education. These results are indications that farmers in the study area 25.20% had primary level of education. These results indicated that farmers in the study area were susceptible to new media usage due to their level of educational exposures. In a study on the utilization of information and communication technologies among students of faculty of agriculture and basic medical sciences in Nigerian universities Aboh and Effiong, (2019c) found that half of their respondents were males, they utilized ICT tools effectively in their studies, seminars, workshops, conferences and research works. Moreso, a study by Effiong (2013) on effect of information and communication technologies on yam production in Akwa Ibom State, Nigeria indicated that most yam farmers were between the ages of 40-50 years and were well exposed to the use of information and communication tools in their yam production business.

Also, a study by Effiong and Aboh (2018) on rubber production technologies and the related socio-economic environments in Akwa Ibom State, Nigeria indicated that majority of the farmers were males. In the same vein, a study by Ijioma *et al.* (2016) on the determinants of adoption of selected NRCRI cocoyam technologies among farmers in Umuahia South Local Government Area of Abia State, Nigeria indicated that education was an essential ingredient in the determinants of adoption of selected NRCRI cocoyam technologies among farmers in Umuahia South Local Government Area of Abia State, Nigeria. These results showed that the socio-economic variables in the study were necessary in the effectiveness of new media technologies

on agricultural production in Akwa Ibom State in particular and Nigeria in general.

New media channels

The result in Table 2, showed the distribution of respondents base on new media channels available to respondents in the study. The results indicated that Whatsapp was the most frequently accessed source of new media among the respondents. This could be because of the relative popularity of Whatsapp among rural households in the study area. The popularity of Whatsapp may be as a result of its familiarity among the rural households. This was closely followed by the facebook, Google and the Twitter handle. These results is in agreement with the study of Idisa *et al* (2013) and Effiong *et al.* (2021) who stated that new media handles are the most popular and easy access to agricultural information on technology transfer. The result further corresponds with the study of Ijioma *et al* (2012), Effiong *et al.*, (2016**)** and Effiong (2013b) that for effective communication to take place in agricultural production, there must not be any distortion in its channels. Therefore, new media channels lack barriers in its communication channels.

Effectiveness of new media technologies on agricultural production

The results in Table 3, showed the effectiveness of new media channel of communication among rural households in Akwa Ibom state. Areas of effectiveness of new media coverage include; information on improved animal health and management, sustainable cooperative management system, market linkages and community pricing, improved storage facilities and provision of employment among very many others. From the result, improved crops and animal husbandry ranked 1st, as the leading effectiveness of new media on agricultural production, this was followed by sourcing and utilization of farm inputs ranked 2nd, storage and processing techniques ranked 3rd, cooperative management ranked 4th while market linkages and commodity pricing was ranked 5th. The indication from the findings of this study revealed that, there is a high level of effectiveness of new media usage by farmers in the study area. The new media channel has improved agricultural activities in the study area. This study is in contrast with the work of Ben (2010) who stated that social media is alien to

Table 1: Distribution of respondents according to socio-economic characteristics.

Socio-economic characteristics	Category	Frequency	Percentage (%)
Age	20 and below 21-30	733	2.8013.20
	31-40	71	28.40
	41-50	99	39.60
	51 and above	40	16.00
Total		250	100.00
Sex	Male	159	61.60
	Female	96	38.40
Total		250	100.00
Educational Status	No formal education	20	8.00
	Primary education	63	25.20
	Secondary education	98	39.20
	Tertiary education	69	27.60
Total		250	100.00

Source: Field Survey Data, 2021.

Table 2: New media channels.

Variables	Very high	High	Low	Mean	Standard deviation	Ranking
Facebook	130(52)	70(28)	50(20)	1.80	1.28	2nd
Linkedln	150(60)	60(24)	40(16)	1.68	1.27	5th
You Tube	137(54.8)	63(25.2)	50(20)	1.65	0.79	6th
Wikipedia	137(54.8)	83(33.2)	30(12)	1.65	1.46	6th
Flicker	139(55.6)	61(24.4)	50(20)	1.64	0.79	7th
Reddit	137(54.6)	73(29.2)	40(16)	1.61	0.74	8th
Twitter	133(53.2)	57(22.8)	60(24)	1.70	0.82	4th
Whatsapp	110(44)	70(28)	70(28)	1.84	0.83	1st
Google	128(51.12)	62(24.8)	60(24)	1.72	0.82	3rd
Palm chat	164(65.6)	66(26.4)	20(8)	1.42	0.63	9th

Source: Field Survey Data, 2021.

Table 3: Effectiveness of new media technologies on agricultural production.

Variables	Very high	High	Low	Mean	Standard deviation	Ranking
Animal health and management	122 (48.8)	68 (27.2)	60 (24)	1.75	0.81	7th
Co-operative management	80 (32)	50 (20)	120 (48)	1.96	0.77	4th
Market linkages/ Commodity prices	112 (44.8)	49 (19.6)	89 (35.6)	1.90	0.89	5th
Storage and processing techniques	60 (24)	80 (32)	110 (44)	2.2	0.8	3rd
Improved crop and animal husbandry	20 (8)	60 (24)	170 (68)	2.6	0.63	1st
Enhanced investment	180 (72)	50 (20)	20 (8)	1.36	0.62	11th
Provision of employment	200 (80)	30 (12)	20 (8)	1.28	0.60	12th
Sources and utilization of farm inputs	50 (20)	90 (36)	110 (44)	2.24	0.76	2nd
Information on feed availability	170 (68)	50 (20)	30 (12)	1.48	0.92	10th
Improved income	120 (48)	80 (32)	50 (20)	1.72	0.77	8th
Enhanced investment	140 (56)	60 (24)	50 (20)	1.64	0.79	9th
Improve market and international cooperation	180 (72)	50 (20)	20 (8)	1.36	0.57	11th
Source of income to farmers	170 (68)	40 (16)	40 (16)	1.48	0.75	10th

Source: Field Survey Data, 2021.

Table 4: Regression analysis of the socio-economic characteristics of effectiveness of new media on agricultural production.

Variables	Coefficient	STD Error	Z	P>/z/	95% Conf. Interval	
Age	-5613517	.2851711	-2.16	0.022**	-1.142034	-.0815680
Sex	-3057352	.2577310	1.40	0.121***	9225550	.1101745
Education	0.040478	0.02806	2.217	0.011	0.0165914	
Constant	.175652	.63251	0.15	0.693	1.240040	.1527194

*** = Significant at 1% level of probability.

** = Significant at 5% level of probability.

Source: Field Survey Data, 2021.

the farmers in rural areas and are affected by their illiteracy levels. New media channel of communications has come to stay among rural farmers who see it as an easy way out of communication barriers in their household farming settlement.

Regression analysis of the socio-economic characteristics of effectiveness of new media on agricultural production

The result in Table 4, showed the regression analysis of the relationship between socio-economic characteristics of the respondents and effectiveness of new media technologies on agricultural production. The result showed that age of the respondents was significantly related to the effectiveness of new media among the respondents in the study area. This result showed that age of the respondents was one of the major factors in the effectiveness of new media in the study area.

This result is in tandem with Effiong *et al.* (2015) who stated that age of respondents who adopted Pro vitamin A cassava production technologies (40 and above) was significant in the adoption of the cassava technology in Etim Ekpo Local Government Area, Akwa Ibom State. The Table also revealed that educational level of the respondents had significant relationship with effectiveness of new media among rural households in the study area at 1% level of significance. This underscores the role of education in the access, utilization and effectiveness of new media channels in agricultural production. This result however states that higher level of education enhance greater effectiveness of new media technology in agricultural production. The study agreed with the position of Aboh and Effiong, (2019a) who noted that education is the panacea to new innovations and technological development in any given society.

Implication of the study

This study implied that new media innovation and technology is quite effective in agricultural production.

LIMITATIONS

Information hoarding by the respondents was the major limitation of the study.

CONCLUSION

The study assessed the effectiveness of new media technologies on agricultural production among rural farmers' households in Akwa Ibom State, Nigeria. The major new media facility used by the rural households was Whatsapp. Though other sources such as google and twitter were important, but Whatsapp was the most important source.

It is inferred that education was a major factor in the effectiveness of new media technology in the study area. The hypothesis of the study showed that, age was significantly related to the effectiveness of new media at 5% level of probability. Upon these findings, farmers are hereby encouraged to utilize new media facilities to improve their farm production activities.

Direction for future research

Researchers are hereby encouraged to venture into precision agriculture using information and communication technologies as tools.

Conflict of interest

All authors declared that there is no conflict of interest.

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