

PERCEIVED EFFECTIVENESS OF ADP COMMUNICATION CHANNELS AMONG COCOA FARMERS IN EKITI STATE, NIGERIA

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ABSTRACT

The study examined the perceived effectiveness of Agricultural Development Programme (ADP) Communication Channels among Cocoa Farmers in Ekiti State, Nigeria. About 150 cocoa farmers were randomly selected using a structured questionnaire and was analyzed with Pearson Moment Correlation. Most (96.0%) of the respondents had access to extension service in the study area, all (100%) of the cocoa farmers had access to radio as the most effective channel. Improved variety (Mean= 3.86) was the most effective technology used and adopted by respondents in the study area. There was a significant relationship between education, frequency of access to ADP, and household size of respondents at 0.05 level. It was recommended that, the extension arm of ADP in the study area needs to be fully strengthened in terms of manpower and funds in order to reach out to farmers for more effective dissemination of improved technologies.

Keywords: Communication Channels, Radio, Improved Variety, Technology, Extension service

INTRODUCTION

Communication is the process of sharing ideas, feelings, thoughts and messages with others (Ojomo, 2004). Communication is a transactional process of sharing meaning with others (Rothwell, 2001). Communication include writing and talking, as well as non-verbal communication (such as social expressions, body language or gestures) visual communication (the use or image or picture, such as printing photography, video or film) and electronic communication (telephone calls, electronic mail, can be television, or satellite broadcast). Communication is a vital part of personal life and is also important in business, education and any other situation where people encounter each other (Lievrauw, 2009). Communication effectively helps group members build trust and respect, foster leaving and accomplish goals. Group members are made up of people (farmers) in the case who share a common interest and commitment and get perhaps see things from a variety of perspective. Effective communication is the way this diverse group of people will be able to understand the issues and make decision for effective change. Effective communication is a vital force in agricultural production. When the farmers lack access to knowledge and yield, they are not only grope in the dark but are driven to the urban centers in search of formal employment, as the only option for survival (Munyna, 2000). Blait (1996) pointed out that the least expensive input for improved rural agricultural development is adequate access to knowledge and information in areas of near agricultural technologies, early warning systems (drought, pests, diseases etc.) improved seeding, fertilizer, credit, market prices.

Cocoa (*Theobroma cacao*) played a significant socio-economic role in Nigeria. It accounts for about 2% of the national export earnings and over 200,000 rural household in 14 cocoa producing states depend on cocoa for the majority of their cash income (National Cocoa Development Committee, NCDC, 2008). Across the supply chain million more are involved in trade, transport, processing and export, that are dependent on cocoa for their livelihood. Nigeria was among the

leading cocoa producing nation in the world until oil discovery in early 1970. This trend changed when oil was discovered in early 1970 and till date attention given to agricultural sector and cocoa industry in particular is grossly inadequate. Nigeria is currently the fourth largest producer of cocoa after cote d'ivoire, Ghana and Indonesia, (Cicco, 2009/2010). Cocoa is a derivation of the Spanish word cocoa, derived from the Nahuati word Cacahuati. Cocoa tree is native to the Americas. It may have originated in the foothills of the Andes in the Amazon and Orinoco basin of South America. The cocoa farming is a very productive adventure in the country especially in the early 70's when agriculture was still the pride of our nation. Thereafter the priority of agriculture activities especially cocoa production was reduced due to the discovery of oil. Apart from the oil discovery, there are other factors that have contributed to the backwardness of cocoa farming in Nigeria and Ekiti State in particular which includes; climate change, temperature rainfall, humidity, photoperiod and altitude (Opeke, 2005). All these factors translated into lower crop yield, low income, reduce the better standard of living of the people. It was also reported by (Mpako *et al* 2005) that some year came with adequate rainfall but most people fail to maximize the opportunity because of the confusion in the rainfall pattern. Therefore, with the help of effective communication either, via the service of extension agent, radio, television and other means can solve all these problems and bring about better yield and income. Hence the specific objectives were to: examine the socio-economic characteristics of cocoa farmers in the study area; ascertain cocoa farmers access to extension service in the study area; ascertain the perceived effectiveness of ADP communication channels in information dissemination; and also ascertain the effectiveness of communication channel in the adoption of technology by respondents in the study area. A null hypothesis formulated for the study is, there is no significant relationship between socio-economic characteristics and perceived effectiveness of ADP communication channel in the dissemination of technology to cocoa farmers in the study area.

METHODOLOGY

The study was conducted in Ekiti-State, The State is situated in South-West Nigeria and shares boundaries with Kwara-State to the North, Kogi State to the east, Ondo State to the South and Osun-State to the west. The State covers an area of 6,353 km² and has a population of 2,737,186 according to (National Population Commission, 2006) estimates. The people of the state are civil servant but majority of the people especially those away from the State capital are mainly farmers who cultivate mainly yam, cassava, cocoa and vegetable. The State enjoys tropical climate with two distinct seasons. These are the rainy season (April-October) and the dry seasons (November-March). The temperature range is between 21-28°C. The study was centered on five local government area of the State: Ise/Orun; Irepodun/Ifelodun; Ikere; Ido/Osi and Emure local government areas. The choice of these local government areas was as a result of large concentration of cocoa famers in the study area. A multistage sampling procedure was adopted in the selection of respondents for the study. The first stage was the selection of five local government areas from the entire State. The second stage was the selection of 3 communities from each local government, making a total of 15 communities. At the third stage, 10 cocoa farmers were selected purposively from each rural communities (for interview due to their involvement in cocoa farming) hence a total of 150 cocoa farmers was selected for the study. Frequency count, percentage, standard deviation, means and t-statistics in the Pearson correlation was used in the hypothesis testing. A null hypothesis formulated for the study is, there is no significant relationship between socio-economic characteristics and perceived effectiveness of ADP communication channel in the dissemination of technology to respondents in the study area.

RESULTS AND DISCUSSION

Socio-economic characteristics of cocoa farmers

The social-economic characteristics of cocoa farmers is presented below.

Table 1: Social-Economic Characteristics of Cocoa Farmers in the study area

	Categorization	Frequency	%	Mean
Sex	Male	102	68.0	
	Female	48	32.0	
	Total	150	100.0	
Age	21-29	20	13.3	
	30-39	44	29.3	
	40-49	49	32.7	
	50 & above	37	24.7	
	Total	150	100.0	41.9
Marital status	Single	23	15.3	
	Married	85	56.7	
	Separated	31	20.7	
	Divorced	11	7.3	
	Total	150	100.0	
Religion	Christian	79	52.7	
	Muslim	68	45.3	
	Others	3	2.0	
	Total	150	100.0	
Education	None	28	18.7	
	primary education	31	20.7	
	secondary education	54	36.0	
	tertiary education	37	24.7	
	Total	150	100.0	

Source: Field survey, 2018

Table 1 shows that majority (68%) of the cocoa farmers were males. This is an indication that more males are involved in cocoa farming in the study area. This reflects the findings of Ogunlola and Mukhar (2009), that men were mainly involved in the cultivation of cash crop (like cocoa) in most parts of Africa, Nigeria inclusive because women only have usufruct rights to land ownership in most cases and are not usually allowed to grow cash crops like cocoa.

The study showed that higher proportion (32.7%) of the cocoa farmers were between 40 and 49 years. This confirms Ismail *et al.*, who reported that smallholder productions are characterized by older age grade of 45 – 76 years (as cited in Dimelu & Anyaiwe, 2011). These would influence ADPs communication channels effectiveness, perception and attitude although other factors may play important roles. The findings in Table 1 showed that majority (56.7 %) of the respondents were married. This is an indication that high degree of responsibility and a great capacity for sound rational decision among the farmers, this factor is likely to encourage the sustainability of adoption decision (Ejembi *et al.*, 2006), also Onasanya (2007) observed that most farmers are married and Soyebó (2005) that agriculture is much practiced by married people to make ends meet and cater for their children. The findings in Table 1 also showed that 52.7 % (Christian) and 45.3 % (Muslim). It means that the predominant religion in the study area were Christian and Muslim, and it support the cultivation of cocoa which is an indication that cocoa production in the study area is

not religion bias. The Table 1 showed that 36.0% had secondary education; 24.7% had tertiary education; 20.7% had primary education. This implies that majority of the respondents were literate taking as baseline of literacy to be primary educate, hence 81.3% of respondents were educated, and this may contribute to their level of innovation adoption. This agrees with Ejembi *et al.* (2006). A farmer that can read and write can follow the direction for adoption of a recommended practice more effectively and contradict the view of Fatunwa (1974) who stated that it is generally assumed in Nigeria that primary agriculture is a low-status vocation fit only for illiterates and school drop-outs unable to find employment. As Okojie (2002) put it, the more educated a farmer is, the better he is placed to appreciate the potentials of information and communication technologies (cited in Onumadu, 2011).

Farm Characteristics of cocoa farmers

The farm characteristics of cocoa farmers is presented below.

Table 2: Farm Characteristics of cocoa farmers in the study area

	Categorization	Freq.	%	Mean
Farm size (ha)	<1	9	6.0	
	1-5.0	96	64.0	
	5.1-10.0	42	28.0	
	10.1-15.0	3	2.0	
	Total	150	100.0	3.98
Farming experience	1-5	43	28.7	
	6-10	45	30.0	
	11-15	25	16.7	
	16-20	10	6.7	
	>20	27	18.0	
	Total	150	100.0	10.3
Household size	1-5	103	68.7	
	6-10	40	26.7	
	11-15	6	4.0	
	>20	1	.7	
	Total	150	100.0	4.0
Labour source	Family	41	27.3	
	Hired	65	43.3	
	Self	44	29.3	
	Total	150	100.0	
Farm Association	non-member	12	8.0	
	cocoa farmer	123	82.0	
	Cooperatives	15	10.0	
	Total	150	100.0	
Group leadership]	no leadership experience	103	68.7	
	have led a group	42	28.0	
	have held position	5	3.3	
	Total	150	100.0	
Annual Farm Income(₦)	<100,000	58	38.7	
	100,001-200,000	48	32.0	
	200,001-300,000	33	22.0	

300,001-400,000	6	4.0	
400,001-500,000	4	2.7	
>500,000	1	.7	
Total	150	100.0	152,000

Source: Field survey 2018

As shown in Table 2, that 64.0% had (1-5.0) ha with a mean farm size of 3.98 hectares. This implies that most of the cocoa farmers are smallholder farmers. This is consistent with the report of Initiative for Public Policy Analysis (IPPA, 2010), that cash crops farmers in Nigeria are mainly smallholders with farm sizes ranging between 1 to 5 hectares. This also agrees with Olayide (1992) that Nigeria farmers are small scale farmers that cultivated small areas of land. The relatively small farm size may inevitably lead to subsistence farming which does not encourage commercial and industrialized farming. Relatively small farm land could constitute a major constraint technology adoption. As shown in Table 2, 30.0% had between 6 and 10years farming experience, with a mean of 10.3years. This implies that long farming experience may help to developed farmers confidence in making and implementing right farm decisions regarding reducing pesticides use and promoting plant protection recipes. Long years of farming according to Khatam *et al.*, (2010) also improved their leadership qualities, communication and management skills as well as elevate the overall socioeconomic conditions of the farming communities. Majority (68.7%) of the cocoa farmers had household size of between 1 and 5 persons with a mean of 4.0 persons as shown in Table 2. This implies that more human labors need to be hired by the farmers in order to increase production and income in order to improve their standard of living. As shown Table 2, 43.3% of the cocoa farmers used hired labors; 29.2% of the cocoa farmers engaged self; 27.3% of the cocoa farmers engaged their family members. These results show that the majority of the family engaged hired labor as a result of the small household size which was not enough for effective practiced.

Table 2 showed that 82.0% of the respondents involved in a cocoa farmer association of Nigeria (CFAN) which would assist the farmers to get a relevant information and innovation from the government. As shown in Table 2, 68.7% of the cocoa farmers had no leadership experience. This showed the low level of exposures of the farmers which could hinder them from appreciating the use of technologies like internet to get information on better practices like improved varieties, use of fertilizer application, spacing and which make the adoption of these technologies a thing of great complexity. Table 2 shows that higher proportion 38.7% of the farmers in the study area make an estimated annual income of <100,000; 32.0% make an estimated annual income of between 100,000-200,000 with a mean annual income of ₦152,000. This means that each cocoa farmer earns ₦1013.3 k per annum (that is ₦152,000/150 cocoa farmer). Since there are 365 day in on year, further simplification of the result showed that each cocoa farmer earns ₦2.77 k per day (that is ₦1013.13 k/365 days), but one dollar is equivalent to ₦240 meaning that the daily earning of the cocoa farmers was \$0.01157 per day. This finding shows that cocoa farmers in the study area were poor by World Bank standard. World Bank asserted that people living less one dollar per day are poor (World Bank, 1999), this defining the poverty line. The income level of the respondent as shown is consistent with the assertion that, 70% of Nigerians were living below poverty line (United Nation, 2003). This implies that although there would be considerable interest in the use of better information sources to get information on improved and economically rewarding farming practices like the use of effective information channels, the farmers would not have sufficient income to afford and/or use these technologies. Income is crucial in agricultural information use because the more the income of the farmer, the more likely he would seek and

obtained information for use. With improved income, the farmers will be better exposed to spend more on recommended farm practices that would further increase his farm earning.

Status with Extension Services (ADP)

Distribution of cocoa farmers according to their Status with Extension Services (ADP) is presented in table 3

Table 3: Cocoa farmers Status with Extension Services (ADP)

Variables	Accessibility	Frequency	Percentage
Access to ADP	Have access	144	96.0
	Do not have access	6	4.0
	Total	150	100
	No response	6	4.0
	Fortnightly	7	4.7
Frequency of access to ADP	Monthly	85	56.7
	Months interval	30	20.0
	Yearly	22	14.7
	Total	150	100.0
	Last month	4	2.7
First Access to ADP	This year	23	15.3
	Last year	45	30.0
	2 years back	29	19.3
	> 2years	43	28.7
	No response	6	4.0
Total	150	100.0	

Source: Field survey 2018

As shown in Table 3, most (96.0%) of the respondents had access to ADP extension services. This result indicates that ADP extension services recast radio, Television, home and farm visit are readily available to the cocoa farmers in the study area. It is thus expected that there will be a positive effect of ADP communication channels on cocoa farming with respect to the use of improved cocoa varieties, use of pesticide, fertilizer application. it is also indicated from Table 1, that only (4.7%) of the cocoa farmers had a fortnight access to ADP extension services (i.e accessed ADP extension services every two weeks). This indicated that this number of cocoa farmers will perceive ADP extensions to be more effective than every other farmer.

Table 3 also shows that only (28.7%) of the cocoa farmers had their access to ADP extension services for over 2 years and above; Cocoa Plant being a permanent crop that grows to maturity in more than 2 years. As a result of this, those farmers that accessed ADP extension services in 2 years and below might not really perceive the benefits and effectiveness of the ADP extension services to the fullness in cocoa farming due to the number of years required for the cocoa plant to produce. This result indicated that high rate of extension service contact with less frequency in accessing ADP extension services in the study area might not boost their productivity optimally due to the length of time. It was also shown in Table 3, that majority (71.3%) of the respondents

started accessing ADP extension services of 2 years and below, compared to gestation period of cocoa. This implies that majority of the cocoa farmers did not experience one or more production activities which includes; timely fertilizers application, use of pesticide, use of cocoa improved varieties, chemical application and that of insecticide. with ADP extension agent, thus these activities improved production in general. This was in line with Aina (1989) who stated that lack of regular information on modern agricultural technology is a key factors limiting agricultural development in Nigeria. This also was confirmed by (Ozowo,2004) that low accessibility to agricultural information leads to low adoption of improved technologies which invariably affects productivity and could lead to poverty.

Access to Communication Channels

Distribution of cocoa farmers according to Perceived Effectiveness of Communication Channels is presented in Table 4

Table 4: Perceived Effectiveness of Communication Channels in the study area

Communication Channel	Frequency	Percentage
Radio	150	100.0
Television	147	98.0
Home farm visit	138	92.0
Neighbour/Friend	128	85.3
Meeting	109	72.7
Lecture	82	54.7
Poster	69	46.0
Demonstration	62	41.3
Bulletin	43	28.7
Leaflet	39	26.0
Internet	34	22.7

Source: Field survey 2018

As shown in Table 4, all (100.0%) had an access to radio, (98.0%) had access to television, (92.0%) had access to home and farm visit, (85.3%) to neighbor/friends, (72.7%) had access to meeting and (54.7%) had an access to lectures; (46.8%) had access to poster and (41.3%) had access to demonstration of teaching. This shows that radio and television been the most common types of communication channels from which individual farmers can access ADP information. This is likely due to ease of use. Radio been the most effective might be as a result of mobility and the power to function without the use of electricity supply, for example radio using battery, handset with radio which can follow the farmer to everywhere he is going to because, it is very simple to carry about and very portable. This view agrees with that of Ajayi (2003) that use of radio was the most popular among farmers in south west Nigeria, and that the popular use of radio by farmers is probably due to the facts that many farmers can afford to purchase a transistor radio as it is cheap, more accessible and easy to maintain than other media. The Table indicated that (85.3%) of the farmers accessed information through their neighbor and friends which agrees with Anthony (1994) that the rise in farmers preferring fellow farmers as a firsthand source of information may be due to the apparent ineffectiveness in the public extension service in developing countries, as indicated in Table 1 only (28.7%) of cocoa farmers had access to ADP extension service beyond two years back.

Effectiveness of Communication Channels on Technology Adoption

Distribution of cocoa farmers according to Effectiveness of Communication Channels on Technology Adoption is presented in Table 5

Table 5: Effectiveness of Communication Channels on Technology Adoption

Technologies	Mean*	Std. Deviation
Improved variety	3.86	0.418
Use of pesticide	3.79	0.453
Timely weeding	3.74	0.470
Time of fertilizer	3.74	0.511
Time planting	3.51	0.552
Time of harvesting	3.39	0.553
Row planting	3.38	0.575
Spacing	3.32	0.545
Use clean planting	3.21	0.496
Intercropping	3.15	0.560
Post –harvest storage	3.13	0.473

Source: field survey 2018

***Effective (Mean>2.50)**

As shown in Table 5, the use of improved variety with a mean (Mean=3.86); use of pesticide with (Mean=3.79), timely weeding (Mean= 3.74), time of fertilizer application (Mean=3.74), time of planting (Mean=3.51), time of harvesting (Mean=3.39), row planting (Mean= 3.38), spacing (Mean=3.15), post-harvest storage (Mean=3.13) reveal that these communication channels used in the adoption of these technologies were effective. This result shows that the improved varieties, use of pesticide, timely weeding and time of fertilizer application are the most adopted while intercropping and post-harvest storage represent the least adopted technologies. This is an indication that their adoption that their adoption level of improved technology is affected by farmers awareness of technological information pertaining to the crop. This result is in agreement with the view of Ekong (2003) that awareness is the first stage in the adoption process. It involves the individual learning of the existence of an innovation. Hence, , improved varieties are mostly adopted because of their simplicity.

Test of Hypothesis

Table 6: Relationship between Socio-Economic Characteristics and Perceived Effectiveness of ADPs Communication (Correlation).

Independent variables	Effectiveness (Total Score)		
	Coefficients (r)	Prob. Level	Decision
Age	-0.078	0.344	Not significant
Education	0.299**	0.000	Significant
Farm size (ha)	0.055	0.504	Not significant
Farming experience	-0.074	0.367	Not significant
Frequency Access ADP	-0.308**	0.000	Significant
Household size	-0.185*	0.023	Significant
Income	-0.089	0.279	Not significant
Sex	-0.124	0.130	Not significant

Source: field survey 2018; Significant at 0.05level (critical r = 0.139)

Hypothesis One

The hypothesis states that there is no significant relationship between socio-economic characteristics and perceived effectiveness of ADP communication. The hypothesis was tested using correlation matrix and the result is presented in Table 6. The following inferences could be drawn from Table. The result from Table 6 showed that there was no significant relationship between the age of the respondents and their perception of ADP communication channels and this was significant at 5% level of significance. The negative correlation was an indication that the younger respondents tends to perceived ADP communication system as effective more than the older ones. This is so because younger farmers are highly innovative compared to older farmers. Old age is associated with weakness and skepticism while youthfulness is associated with virility and venturesome. This result agrees with (Nnadi & Akwivu, 2005). From the finding in Table 6, there was positive correlation between the level of education and respondents and the level of their perception of ADP communication system and this relationship was significant of 0.05 level of significance. This indicates that educated respondents tends to perceive the effectiveness of ADP communication more and shows that level of education influence farmers decision in their farms, making it easy for them to perceive the effectiveness of ADP communication before their uneducated counterpart. This agrees with the studies of Nnadi and Akwivu (2008) who associated education with increased participation and adoption of agricultural technologies.

There was a positive correlation between cocoa farmers' farm size and their perception of effective mass ADP communication system but was not significant at 0.05 level of significance. The positive correlation indicated that, respondent with larger size of cocoa farm tends to perceive the effectiveness of ADP communication than those of smaller farm size. There was a negative correlation between cocoa farming experience of the respondents and their level of perception of effectiveness of ADP communication but was not significant at 0.05 level of significance. The negative correlation indicates that respondents with few years of farming experience perceived the effectiveness of ADP communication more than those with more years of farming experience. There was a positive correlation between the farmers frequency access to ADP and their of perception of effectiveness of ADP communication but was significant at 0.05 level of significance. The positive correlation indicates that the cocoa farmers, with higher or frequent access to ADP. Result agree with Ozowa (2004) which stated that low accessibility affects farmers productivity and could lead to poverty. Also, there was a negative correlation with cocoa farmers t's level of perceived effectiveness that ADP communication and is significant at 0.05 level of significance. The implication of this negative value is that cocoa farmers with smaller household sizes tend to perceived ADP communication channels effectiveness than those with the larger household size there was a positive correlation between annual income and their level of perception of effectiveness of ADP communication but which was not significant at 0.05 level of significance. The positive result correlation was an indication that respondents with higher annual income tend to perceive the effectiveness of ADP communication than those respondents with lower level of annual income. In other words, the higher the income, the more opt the cocoa farmers were to perceived ADP communication effectiveness. There was no significant relationship between the sex of the cocoa farmers and their perceived effectiveness of ADP communication at 0.05 level of significance. The negative correlation is an indication that the level of perceived ADP communication effectiveness is higher with female cocoa farmers than the male counterpart.

CONCLUSION

Base on the findings of the study, it is concluded that communication of technologies to cocoa farmers through ADP communication channels in the study area had a positive effect on farmers yield and income as farmers in the study area were able to effectively communicate with communication channels available to them thereby increasing yield, income thereby improving the general life style of the farmers.

RECOMMENDATIONS

It is therefore recommended that:

1. Government and private organizations should assist farmers in form of loans, grant and agricultural credit facilities in other to increase production of cocoa in the study area.
2. The extension arm of Ekiti State ADP needs to be fully strengthened in terms of manpower and funds in order to reach out to farmers for more effective dissemination of improved technologies.

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