International Journal of Agricultural Extension and Rural Development Studies
Vol.6, No.4, pp.14-21, July 2019
Published by European Centre for Research Training and Development UK (www.eajournals.org)

FACTORS INFLUENCING RADIO ADOPTION DECISION OF RICE FARMERS IN THE DISSEMINATION OF AGRICULTURAL INFORMATION IN ZAMFARA STATE

Yahaya Musa,
Department of Agricultural Technology, College of Agriculture andAnimal Science Bakura, Zamfara state

Dr. Yahaya Kaka,
Department of agricultural economics and extension, Kebbi state university of Science and technology Aliero, Kebbi state

Dr. Sa'adu Umar,
Department of Agricultural Economics and extension, Kebbi state university of Science and technology Aliero, Kebbi state

ABSTRACT: *This study examine the factors influencing radio adoption decision of rice farmers in the dissemination of agricultural information in Zamfara state. The research study applied agenda setting theory to show how selection of topics and packaging of agricultural content impact on rice farmer's uptake of agricultural information. The research use a structured questionnaire to collect data for the study. A multi-stage, simple random and purposive sampling techniques were adopted to select a sample of 350 farm respondents. The data collected were analyzed using a descriptive statistics such frequency and percentage and logit regression analysis to estimate factors influencing radio adoption decision in knowledge sharing. The estimate shows that, age, farming experience, access to agricultural information via radio, association membership and gender are significant at 5%, 1% and 10% respectively. It is therefore recommended that, more radio stations should be develop and should also partner with agriculture institutions to overcome challenges that both side experience*

KEY WORDS: radio, factors, adoption, decision, agriculture, information, rice farmers, influencing, dissemination

INTRODUCTION

Absence of a functional Agricultural information delivery system is a major constraint to Agricultural development in Nigeria. (Aina, 1989) Identified non-provision of necessary Agricultural information as a key factor limiting Agricultural development in Nigeria. According to (Youdeowei, 1995), lack of access to relevant Agricultural information by Farmers in developing countries cuts across all subsectors of Agriculture and different stages of Agricultural production process. Farmers need to be informed and educated about improved Agricultural practices to enable them increase their productivity and income. Several channels such as Extension Agents, individuals, Farmer-to-Farmer

Print ISSN: ISSN 2058-9093, Online ISSN: ISSN 2058-9107

contact, print media (newspapers, magazines, newsletters, leaflets, pamphlets, and posters) and electronic media (Radio, Television, Film and Slides) have been widely used to disseminate information to farmers (Van den Ban and Hawkins, 1992; Olowu and Oyedokun, 2000). Effective use of the information multipliers, the mass media, can provide information at the rates driven by pressure of time, population, geographical constraints, and shortage of trained Extension personnel in developing countries. Radio is one broadcast medium which almost all experts identify to be the most appropriate for rural emancipation programme. It beats distances, and thus has immediate effect. It has been identified as the only medium of mass communication the rural population is very familiar with (Kuponiyi, 2000). This is because a radio set is cheap to obtain and is widely owned in the rural areas.

Statements of the research problem

Sustainability and productivity of Agricultural sector worldwide largely depend on the quality and effectiveness of extension services. (kimaro, *et al,* 2010), but also lack of the necessary knowledge, skills and experience in using different extension methods is usually the case.. However, Most Agents use individual extension methods (farm or home visits and use of contact farmers) to communicate and to disseminate Agricultural technologies to farmers. Extension agents are also working under areas characterized by lack of infrastructural facilities such as transportation (Asayehegon *et al*., 2012). This suggests that, the use of conventional extension methods such as farm or home visits and the use of contact farmers do not provide the needed Agricultural information on timely basis (Deribe, 2011). This makes it practically difficult to reach the farmers by face-to-face or individual contact methods. Therefore, these conditions undermine the effective provision of relevant and accurate agricultural information on timely basis. The above mentioned problems calls for the use of Radio to support Agricultural extension services, because Radio can be very effective in delivering timely and relevant information to farmers, even to those living in remote areas.

Objectives of the Study

The research study was aimed at achieving the following objectives:

1. examine the socio-economic characteristics of Rice Farmers in the study area
2. Identify factors influencing radio adoption decision by Rice Farmers in knowledge dissemination in the study area.

Hypothesis

Ho: There is no significant relationship between the socio-economic characteristics of rice farmers and the adoption of radio technology in agricultural information dissemination in the area

H1: There is significant relationship between the socio-economic characteristics and the adoption of radio technology in agricultural information dissemination in the area

Significance of the Study

Furthermore, this findings shall also assist the agricultural stakeholders to find possible solutions to the various constraints faced by the rice farmers, and extension service providers in dissemination of agricultural information through radio, this could also contributes towards re-shaping government and non- governmental policy on agricultural extension service delivery.

Print ISSN: ISSN 2058-9093, Online ISSN: ISSN 2058-9107

.

Theoretical frame work.

This study draws on the agenda setting a media effects theory. Agenda setting has to do with media content. (Griffin, 2009) state that mass media have the ability to transfer the salience items on their news agendas to the public agenda. Another perspective from Miller (2005) is of the opinion that agenda setting involves the consideration of three related agendas; the media agenda, the public agenda, and the policy agenda, the author further quotes scholars of agenda setting (Zhu & Blood 1997) who stated that agenda setting is a process whereby the news media lead the public in assigning relative importance to various public issues. Miller further states that the media influences the public agenda by saying "the issue is important" in an overt way but by giving more space and time to that issue and by giving it more prominence.

METHODOLOGY

Zamfara State is situated in the north western part of Nigeria and had covers an area of 38,418 square kilometers, it is bordered in the North by Niger republic, to the South by Kaduna State, in the East it is bordered by Katsina State and to the West by Sokoto and Niger States. It has a population of 3,278,873 according to the 2006 census and contains fourteen local government areas. The state is basically an Agricultural state with over 80% of the people engaged in various forms of agriculture. The two Agricultural zones in the state were considered. Multi-Stage and simple random sampling was adopted in data collection. At the first stage, four (4) Local Government Areas and three (3) Local Government Areas was randomly selected each from Zone 1 and II respectively. The second stage was also involved a purposive selection of five villages each from the selected local government areas in zone I and II, making a total of twenty (20) villages from zone 1 and fifteen (15) villages from zone II. This however constitutes a total of 35 villages in all. At the third stage, Ten (10) farmers from each of the selected villages was also randomly selected to arrive at 350 farm respondents. Furthermore, 35 village Extension workers was randomly selected out of the total number of 126 Extension workers in the zones. This finally constitutes a sample size of 350 farm respondents and 35 village Extension workers used for the study.

The analytical tools used for analyzing the data include descriptive statistics such as tables, frequency distributions, and percentages etc., Logit regression model were used to estimate the adoption decision of rice farmers.

Logit model was applied and identified factors influencing the decision of Rice Farmers to adopt or not to adopt the use of Radio in knowledge dissemination. The Logit model applied, is of the form used by friendly (1995) and Hasing (2017) which is specified as:

This is transformed in to logistic regression model by a linear function of explanatory variables

$$Logit\ (\pi_{ij}) = \alpha + \beta X_{ij} \quad \text{.. (1)}$$

Where:

π_i = Adoption decision of farmers i, assuming binary form of (1) for adoption and (0) for non-adoption

a = Constant term of the regression equation to be estimated.

β = unknown parameters to be estimated

Print ISSN: ISSN 2058-9093, Online ISSN: ISSN 2058-9107

X_{ij}= j predetermine attributes. Specified as follows:
X_1 = Age of the farmers (years), X_2 = Gender (male = 1, female = 0), X_3 = Household size (no.), X_4 = Farming experience (years), X_5 = Association (member = 1, otherwise = 0), X_6 = Access to information via Radio (yes =1, no = 0).

RESULTS AND DISCUSSION

Table 1 Socio- economic characteristics of rice farmers

The table below indicated that out of the 350 respondents 332 were male (94.9%) while 18 (5.1%) were female. Majority of the respondents attend non- formal education with (30.7%) also constitutes the majority. this results is in consistent with the findings of studies carried out by Isiaka et.al, (2009) and Adisa and Adekoya (2011), reported that , more of extension agent (59.4%) obtained (HND) certificate, followed by tertiary level of education (29.1%), this tertiary education could be a certificate, diploma or its equivalent with the least from primary school certificates (13.1%),. This indicated that, majority of those who had higher level of education access information easily, most of the time The household size had indicated range bracket of 4-6 (29.1%) constitutes the majority, 1-3, (28.0%), 7-9,10-12, (14.9%) and (14.0%) respectively with above 12 household size (14.0%) of the respondents.

The size of land owned by the respondents was less than 1ha to 4ha. The majority of the respondent, (46.0%) owned between 1-2ha, followed by 39.7% owned less than 1ha, 9.7% owned between 2-3ha, 4.3% owned between 3-4ha, with the least 0.3% owned above 4ha

The results revealed that, respondents are in rice farming from 1-5, (31.7%), 6-10years (29.1%), 11-15years (14.9%), 16-20years (23.1%) with the least from above 20years (1.1%).

Majority of the respondents were businessmen with 32%, followed by civil servant and students with 17.7% respectively. And the least came from blacksmithing 0.3% of the respondents.

Moreover, 30.5% of the respondents earn above ₦70,000 from rice production, followed by 27.7% ₦50,01-60,000, 24.9%,₦60,01-70,000 with the least from less than ₦50,000 (16.9%) of the respondents. This implies that, rice production is profitable in almost all part in the state. Finally, about 63.4% of the respondents belong to one rice farmers association to another with 36.3% of the respondents without having any association membership. This implies that, rice farmers in the state are operating under one union or another and this will offer them the opportunity to obtain loan and other financial or technical assistance from governmental and non-governmental organization.

Print ISSN: ISSN 2058-9093, Online ISSN: ISSN 2058-9107

Table 1. Socio-economic characteristics of rice farmers in the study area n = 350

Variables	Frequency	Percentage
Gender		
Make	332	94.9
Female	18	5.1
Age		
<19yeras	2	0.6
20-29	56	16.0
30-39	105	30.0
40-49	111	31.7
50-59	61	17.4
>60	15	4.3
Marital status		
Married	289	82.5
Single	29	8.3
Divorce	09	2.6
Widow/widower	23	6.6
Educational attainment		
Non- formal	107	30.7
Primary	46	13.1
Secondary	95	27.1
Tertiary	102	29.1
Household size		
1-3	98	28.0
4-6	102	29.1
7-9	52	14.9
10-12	49	14.0
Above 12	49	14.0
Farming experience		
1-5yeras	111	30.7
6-10	102	29.1
11-15	52	14.9
16-20	81	23.1
Above 20yeras	4	1.1
Secondary occupation		
Students	62	17.7
Business	112	32.0
Civil servant	62	17.7
Animal rearing	22	6.3
Fishing	17	4.9
Blacksmithing	1	0.3
Hunting	0	0
None	72	21.1
Average annual income		
< ₦ 50,000	59	16.9
₦ 50,01-60,000	97	27.7
₦ 60,01-70,000	97	27.7
>₦ 70,000	107	30.5

Source: Field survey, 2019

Print ISSN: ISSN 2058-9093, Online ISSN: ISSN 2058-9107

Logit regression results on the factors influencing radio adoption decision

From the table 5 below, the results revealed that, for a one unit increase in access to agricultural information via radio, the log odds(probability/ chance) of adoption decision of radio technology (versus not adoption of radio technology) increase by a factor of 0.234 and it is significant at 5 percent. The estimate also revealed that for a one unit increase in age, the log odds (probability/ chance) of adoption decision of radio technology, (versus not adoption of radio technology) increase by a factor of 0.0023 and it is significant at 5 percent. Farming experience has a co-efficient of 0.804 which shows that, for a unit increase in farming experience, the log odds of adoption decision of radio technology (versus not adoption of radio technology) increase by a factor of 0.804 and it is significant at 5 percent. However, association membership has a co-efficient of 2.137 which shows that, for a unit increase in association membership, the log odds of adoption decision of radio technology (versus not adoption of radio technology) increase by a factor of 2.137 and it is significant at 1 percent. Furthermore, for a one unit change in gender, the log odds (probability/ chance) of adoption decision of radio technology (versus not adoption of radio technology) increase by a factor of 0.0858 and is significant at 10%. This findings had contradicted the results from Ango et.al, 2013 where gender, marital status and education are significant at 5 percent while age not significant

Table 2: logit regression results on factors influencing Radio Adoption

Variables	Co-efficient	Standard Error	Z value
Constant	0.0063076	0.0191140	0.33
Age	0.0022644**	0.0010940	2.07**
Gender	0.0858198	0.0482134	1.78*
Household size	0.0564773	0.0527825	1.07
Farming experience	0.8040377**	0.3318193	2.42**
Access to information via Radio	0.2340679**	0.1182161	1.98**
Association membership	2.137831***	0.5368773	3.98***

, * and * represent significant at 5%, 1% and 10% respectively

CONCLUSION

Based on the findings of the research, the results revealed that, majority of the farmers were male with 94.9% and female (5.1%). However, majority of rice farmers came between the ages ranges of 40-49 (45.7%). This implies that, majority belong to the middle age groups. The results also shows fewer female participation, this reflects the issue of land ownership where most land are owned by men.

Moreover, the results revealed that, the major factors that influence radio adoption decision was the age, farming experience, access to agricultural information via radio, association membership and gender are all considered the major factors that influence the radio adoption decision. Finally the use of radio by rice farmers in knowledge dissemination are undermined with some constraints such as non- possession of radio set by the rice farmers, radio program is time consuming.

Print ISSN: ISSN 2058-9093, Online ISSN: ISSN 2058-9107

Recommendations

1. Agricultural institutions should be transform in to a radio cassette and be provided to the rice farmers in the study area this will enable farmers to listen to the program over and over, this will also aid farmers to comprehend the full content of the program

2. Provision of Adults education program in the study area so as to enrich farmers understanding

3. Local language should be use in the presentation of program, this will enhances interaction between the farmers and other stakeholders

4. There is the need for government to provide rice farmers with other means of communication such as mobile phone in hard to reach areas due to security challenges or otherwise
5. There is the need for effective partnership with agriculture institutions and radio stations to overcome challenges that both of them experienced.

6. Radio listening groups should be develop by agricultural institutions this will helps in carrying along the majority rice farmers towards the contents of the program

7. Public and non- governmental organization should be able to sponsored Radio programs that are geared towards rice production technologies

REFERENCES

Adisa, T. and Adekoya, A. (2011). Perception. A determinant of scientist participation in

Agricultural biotechnology research and development. *Journal of agricultural science* ***vol.***

3(1) pp 45-53

.Aina I. O (1989). Education and Training of librarian for Agricultural information works in Africa. Pp 22-

Ango, A.K, Illo, A.I, Abdullahi, A.N, Maikasuwa, M.A and Amina, A. (2013). Role of Farms Radio Agricultural programs in Disseminating Agricultural Technology to rural Farmers for Agricultural development in Zaria, Kaduna state, *Nigeria. Asian journal of Agricultural Extension, economics and sociology.*

Asayehegon, K, weldegebriel, G and kaske D. (2012). Effectiveness of development agents, Performance in agricultural technology dissemination in Ethiopia. *A journal of agricultural economics and extension*

Deribe, K. (2011). Agricultural information networks of farm. Women in southern Ethiopia. Germany lambert academic publishing. Retrieved from http://www.tandfonline.com.

Discussion forum projects.

Isiaka, B.T, Lawal Adebowale, O.A and Oyekunle, O. (2009). Agricultural extension agent's awareness of ICT potential and training needs on usage for improved extension service delivery in selected south west state of Nigeria. *Journal of humanities, social science and creative arts* ***vol. 4****(1)*

Print ISSN: ISSN 2058-9093, Online ISSN: ISSN 2058-9107

Kimaro, W. H, Mukandiwa I and Mario E, Z. (2010). Towards improving agricultural extension Service delivery in the SADC Region. Proceedings of the workshops on Information sharing among extension players in the SADC, region of Tanzania.

Kuponiyi E. A. (2000). Mass media in agricultural development. The use of radio by farmers of Akinyele local government area of Oyo state, Nigeria. Agriculture development studies Vol. no. 1, pp. 109- 125.

Miller, K. (2005) Communication Theories; Perspectives, Processes, and Contexts Second Edition Texas A&M University

Olowu, I.A and Oyedokum, O.A (2000). Farmer's accessibility of Agricultural Marketing Information. The case of Oyinladum Radio program vol.1

Vanderm, Ban, Hankim, F.A. (1992). Agricultural extension, Longman science and Technical, pp. 128.

Print ISSN: ISSN 2058-9093, Online ISSN: ISSN 2058-9107