

Effects of Mass Media as an Outreach for Agricultural Innovations Among Farming Families In Katcha LGA of Niger State, Nigeria.

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Abstract

The research was aimed at examining the effects of mass media as an outreach for agricultural innovations among farming families in Katcha LGA of Niger State, Nigeria. Multi-stage sampling technique was used for the study. In all, a total of 211 respondents were selected from the LGA as the sample size for the study. The results showed that the mean age of the respondents in the study area was 43 years while the average family size was 11 person and 95% were married with almost 71% with non-formal education, the results also showed Pseudo R² value of 0.045 implying that about 73.2% of variations that occurs in effect of mass media on farming families were explained by the independent variables included in the model. The chi-squared statistic 17.34 was significant at 1% level of probability indicating fitness of the model. It further revealed that majority (80%) of the respondents receive their agricultural information from radio and neighbors and 17% of the respondents receive their agricultural information from televisions, posters and newspapers. while 3% of the respondents got agricultural information from extension bulletin, also, The conventional type of media sources to farmers in the study shows that 70% of the respondents identified their media sources as highly conventional, while only 10% respondents identified their media sources as not conventional, while the Kendall's coefficient of 0.24 was significant at 1% level of probability, implying rather a weak agreement among farming families regarding what really was their most serious constraints in using of mass media as an outreach for agricultural innovation in the study area. It is therefore, recommended that the information disseminated through the mass media should be highly utilized in solving problems of the farmers.

Keywords: Outreach, Innovations, Farming, Communities and Families.

Introduction: Agricultural information and dissemination are necessary for the development of agricultural products. Many initiatives have been put in place to create, to manage and to use agricultural information in Africa, particularly in Nigeria, to increase food productivity (Federal Ministry of Agriculture, 2023). Early knowledge of agricultural practice was then a collection of information verbally transmitted from farmer to farmer. It is apparent that adequate and timely information is relevant for better understanding of the programs. Therefore, one of the primary aims for stimulating agricultural development is through disseminating new innovations to farmers.

It is believed that a well-informed society is an organized society because government will be more responsive to their needs and they will be eager to participate in the nations' development programme. Mass media is the most responsible and efficient medium for disseminating new innovation to the farmers. Though, various communication media have been used to transmit agricultural information to farmers in Nigeria in line with the national policy on agriculture, notable among the media are farm magazine,

leaflets, newsletters, newspapers, pamphlets, radio and television among others (Mathew, 2024).

Radio and Television have been acclaimed to be the most effective media for diffusing scientific knowledge to the masses. In the study area where literacy level of the farmers is low, the choice of communication media is of vital importance. In this regard, the television and radio are significant, as they transfer modern agricultural technology to literate and illiterate farmers alike, within short time to enlighten farmers on the use of various technologies to boost agricultural development. The farmers can easily understand the operations, technology and instruction through the radio (Mathew, 2024). The potential of television for dissemination of information should be harnessed for the benefit of farmers (Ahmad and Hassan, 2025).

Abubakar, (2024), stated that effective communication of new research findings and technologies in agriculture to rural farmers remains a promising strategy for increasing agricultural productivity. Generally, such information may include techniques of applying fertilizers, insecticides and fungicides to crops, improved methods of cultivation and soil conservation, techniques of planting, harvesting and storage of crops. There are also new technologies of animal

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husbandry as well as processing and marketing of various agricultural products. For the farmers to adopt the new technologies and put them to use, the new idea must reach their farms and homes through effective communication methods such as mass media channels. The mass media are increasingly becoming a veritable instrument for transforming Nigerian agriculture through which people will derive pleasure from learning how the food they eat daily is produced and they may be encouraged to develop an interest in growing some food themselves.

The major objective of the study is to examine the effects of mass media as an outreach for agricultural innovations to farming families in the area under study, while the specific objectives are to: describe the socio-economic characteristic of the respondents in the study area.; determine the effects of mass media to farming families.; identify the types of mass media used by the respondents in the study area.; identify the constraints faced by farming households in the use of mass media.

Methodology: Study Area : Katcha Local Government Area is one of the 25 local government areas in Niger State with its headquarters in located in Katcha town. It lies between latitude 9°03'00"N and longitude 6°09'00"E. It covers an area of 1,681km² with a total population of 122,417 as at 2006 census. It is important to note that migration and natural population growth may have caused population estimates to change since that time.

The area experiences seasonal temperature variations from 64°F to 96°F, with sporadic excursions below 58°F or above 102°F. From February to April, the hot season, with an

average daily high temperature above 33°C lasts for 2.5 months. In Katcha LGA, April is the hottest month of the year, with an average high of 33°C and low of 23°C. From June to September, the cool season, with an average daily high temperature below 85°F, lasts for 3.2 months. With an average low of 61°F and high of 89°F, December is the coldest month of the year in the area.

Material nd Methods:Selection of the Study Area and Sample

The research was carried out in four (4) different communities in Katcha Local Government area of Niger State..

Sampling Procedure and Sample Size: Both descriptive and analytical techniques were used for the study. The communities are: Badeggi, Kataeregi, Essa and Gbakogi as participation communities in the effects of mass media as an outreach for agricultural innovations to farming families. Multi-stage sampling technique was used for the study. The first stage involved random selection of Agricultural zone I with its headquarters situated at Bida. Study was conducted in Katcha out of 25 LGS's in the state, this is due to the effect of mass media on Agricultural innovations in Katcha local government area. The second stage involved random selection of four (4) communities from the Local Government Areas (LGA). At the third stage, 15% of the farmers were randomly selected from the sampling frame of each community. In all, a total of 211 respondents were selected from the LGA as the sample size for the study.

Table 1: Sample distribution of the respondents in the study area

Communities	Sample frame	Sample size (15%)
Badeggi	416	62.4
Kataeregi	368	55.2
Essa	321	48.2
Gbakogi	301	45.2
Total	1406	211

Sources: Field survey, 2025

Method of Data collection and Analytical Techniques :

Primary data was used for the study, the data were collected by researchers and trained enumerators using structured questionnaire complimented with interview schedule. The data obtained from objective I and III was analyzed using descriptive statistics such as (frequency distribution, percentage mean). Objective II was achieved Logit regression model

The formula for Logit regression is stated as follow:

$$\log(p / (1 - p)) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n$$

Where:

- p is the dependent variable
- X₁, X₂, ..., X_n are independent variables
- β_0 is the intercept
- $\beta_1 \dots n$ are the coefficients

Example of variables:

Dependent Variable (Y):

- Increase yield (1 = Yes, 0 = No)

Independent Variables (X):

- Radio access (1 = Yes, 0 = No)
- TV access (1 = Yes, 0 = No)
- Newspaper access (1 = Yes, 0 = No)
- Mass Media use frequency (1 = Rarely to 4 = Daily)
- Agriculture information use (1 = Yes, 0 = No)
- Educational level (0 = None to 3 = Tertiary)
- Age (in years).

While Objective IV was achieved using Kendall's Coefficient of Concordance.

Kendall's W was computed as shown below.

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$$W = \frac{12 \sum R^2 - 3N(N-1)^2}{N(N-1)}$$

Where:

W = Kendall's value,

N = total sample size,

R = mean of the rank.

Results and Discussions: The socio-economic characteristics of the respondents under consideration include age, sex, marital status, household size, years of farming experience, level of education. Result in Table 2 indicates that the mean age of the respondents in the study area was 43 years. The finding suggests that the respondents belong to the middle age classes, who are agile and eager to acquire information on Agricultural activities which will directly or indirectly affect their farming family and are more mentally alert to embrace new techniques that will benefit their livelihoods. This finding agreed with that of Osei and Omonegho (2024) that middle aged farming families acquire more information on agricultural enterprises for their livelihoods. Finding in the Table 2 also shows that 95.0% of the respondents in the study area were married which is a strong indication of some kinds of family responsibilities that will compel them to seek for alternative source of information that will better their livelihoods in agricultural enterprise. This result is in line with (Idris & Alfa, 2025) who states that Married individuals seek for information's that will benefit their means of livelihoods. The result in Table 2 indicates that the majority of the respondents (71%) were male which shows that there are higher proportions of male respondents in the study area. The male dominance over female in information source

might also be linked to rigorous, tedious and strenuous activities involved in getting the information. The finding agrees with that of Balogun *et al.*, (2024) that male seek for information than female especially on agricultural activities due to their free nature. Table 2 further shows that the mean household size of respondents in the study area were 11 persons. Large household size point to availability of more information either from the neighborhood or other sources for agricultural activities. This agrees with Balogun *et al.* (2024) who stated that the large household size is a strong indication that farming families can seek for more information that will benefit them directly or indirectly to better their livelihoods. Table 2 also revealed that the average years of experience in farming activities in the study were between 12 and 18 years respectively, while the mean year of experience for the respondents was 16 years. The fact is that the majority of the respondents in the study area started seeking for information long ago, which signifies that most farmers in the study area earn their innovation on agricultural activities through sourcing for information to better their livelihoods. Experience in sourcing for agricultural information over a long period of time will also go a long way in decreasing constraints associated with agricultural innovation. This finding conforms to that of Hamza (2024) who stated that majority of farming household in the eastern part of Nigeria had long year experience in Agricultural activities which will go a long way in the betterment of their livelihoods. Table 2 shows that 71% of the respondents in the study area lack formal education. The implication of this is that those who are literate will be more informed because of their ability to access information more quickly on agricultural activities will help improve their farming activities. In a related study, Kayode (2024) contends that education is an important factor that influence acceptance of innovations among farming families in Nigeria.

Table 2: Distribution of respondents according to socio-economic characteristics

socio-economic characteristics of respondents	(n=211) Frequency (%)
Age (year)	
≤20	16 (4.1)
21-30	46 (25.2)
31-40	43 (20.3)
41-50	65 (22.4)
51-60	29 (13.9)
>60	12 (2.9)
Mean	43
Marital status	
Single	45 (6)
Married	154 (95)
Widow	12 (1.0)
Separated	-
Sex	
Male	162 (71)
Female	49 (29)
Household size (number)	
1-5	43 (13.7)
6-10	47 (15.6)
11-15	82 (55.4)

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16-20	16 (5.5)
21-25	21 (7.6)
>25	2 (2.2)
Mean	11.0
Experience in resources utilisation(years)	
1-10	64 (31.2)
11-20	75 (32.9)
21-30	46 (26.6)
31-40	19 (6.4)
>40	7 (2.9)
Mean	16
Educational level (year)	
No-formal education	121 (71.0)
Primary education	43 (15.1)
Secondary education	26 (7.6)
Tertiary education	14 (4.1)
Adult education	7 (2.2)

Sources: Field survey, 2025

Effect of mass media on farming families. Table 3 shows the effect of mass media as an outreach to agricultural innovation in the study area. In this respect, the results showed Pseudo R² value of 0.045 was, implying that about 73.2% of variations that occurs in effect of mass media on farming families were explained by the independent variables included in the model, while the remaining 26.8% were due to external factors not counted for by the researcher. The chi-squared statistic 17.34 was significant at 1% level of probability indicating fitness of the model. Television, newspaper and posters had negative and significant effect as source of mass media on the farming families. This suggests that majority of the respondents do not lay hands on these sources of information mentioned

Table 3: Effect of mass media on farming families

Source of information	Coefficient	P-value
Radio	.0000217	3.79***
News paper	.0001055	0.23
Extension bulletin	.0000339	0.26
Posters	.0003002	0.69
Neighbor	-2.44e-07	-1.61
Television	1.27e-06	0.54
Constant	-.0675225	-3.46***
Pseudo R ²	0.045	73.2
Chi ²	17.34	

Sources: Field survey, 2025

* P ≤ 0.05

above due to some factors such as: electricity, funds for buying newspapers, instead they fall back on radio which is a bit affordable and more economical.

However, radio had positive and significant effect on the farming families as an outreach for agricultural innovations in the study area. This result suggests that due to the affordability of radio in the rural settings, it is commonly used as a source of agricultural information and the adoption of innovations. This result is in line with the finding of FAO (2024) that radio has a significant effect on the dissemination of agricultural information among the rural populace in Nigeria.

Identify the types of mass media used by the respondents in the study area. Table 4 indicates that majority (80%) of the respondents receive their agricultural information from radio and neighbors and 17% of the respondents receive their agricultural information from televisions, posters and newspapers. while 3% of the respondents got agricultural information from extension bulletin. The conventionality type of media sources to farmers in

Table 4 shows that 70% of the respondents identified their media sources as highly conventional, 20% of the respondents identified their media sources as moderately conventional, while only 10% respondents identified their media sources as not conventional. Exposure to conventional sources of information accelerates the adoption process of new agricultural innovation by farming families because people are made to be aware of potential benefits associated

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with adopting new agricultural technology which is as a function of the extension personnel employing appropriate communication techniques in communicating with the farming families (Maduka, 2024). Accessibility of media sources to farmers Table 4 reveals that 80% of the respondents identified their media sources as not highly accessible, 11% of the respondents identified their media sources as moderately accessible; while only 9% of the respondents identified

Table 4: Identify the types of mass media used by the respondents in the study area.

Variables	Frequency (n)	Percentage (%)
Radio/ Neighbor	142	80
Television	30	7
Newspaper	15	5
Posters	15	5
Extension bulletin	9	3
Conventionality of the source(s) of media		
Highly conventional	148	70
Moderately conventional	42	20
Not conventional	21	10
Accessibility of the media source(s)		
Highly accessible	24	9
Moderately accessible	35	11
Not accessible	152	80

Source: Field survey, 2025

Constraints faced by farming households in the use of mass media

In Table 5, the Kendall's coefficient of 0.24 was significant at 1% level of probability, implying rather a weak agreement among farming families regarding what really was their most serious constraints in using of mass media as an outreach for agricultural innovation in the study area. The results reveals that mean value of 4.17 identified high cost of purchasing and maintaining media source (battery, television, radio), mean value of 4.53 identified inability to respond to media immediately, while mean value of 4.86 identified power

Table 5: Constraints faced by farming households in the use of mass media

Constraints	Mean (\bar{x}) (n=211)	Ranking
high cost of purchasing and maintaining media source (battery, television, radio)	4.17	1 ST
inability to respond to media immediately	4.53	2 ND
Power failure	4.86	3 RD
high cost of electronics and lack of electricity (power)	5.03	4 TH
language barriers	5.33	5 TH

Source: Field survey, 2025.

Conclusion and Recommendations: From the study conducted, it has been observed that mass media is an efficient modern means of communication which possesses peculiar quality of sound, pictures and practical method of demonstrations; it also serves as an important source of information dissemination to end users (farmers). It has also been concluded that mass media is considered as a source of information to the rural populace and has become an important communicating tool to the farmers in the rural areas. Despite the importance of these media, they are still not within the financial reach of the farmers in terms of purchase and continuous maintenance, e.g. power problem, cost of purchase of the medium,

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the media sources as accessible to them. This finding is based on Nonso (2023) who pointed that the introduction of radio has been longer than any other mass medium, hence; almost every household has a radio set. The use of local languages and dialects is also more, especially in radio than any other channel. Radio is known to be the most effective mass media channel for communicating agricultural information.

failure, mean value of 5.03 identify high cost of electronics and lack of electricity (power) mean value of 5.33 identify language barriers as a constraints in the study area respectively. This study is in line with Abubakar (2024) also revealed high cost of purchasing and maintaining media source (battery, television, radio), are major constraints for mass media as an outreach for agricultural innovation in rural Nigeria.

cost of battery, maintenance of the medium, cost of using generator and unavailability of national power in the study area. It has been observed that almost all the farmers usually receive information on agriculture from mass media sources most especially radio. It is therefore, recommended that the information disseminated through the mass media should be highly utilized in solving problems of the farmers and also means of mass media communication should be made affordable and readily available for rural farming families either by the government or non-governmental organizations.

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