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Challenges to Women Adoption of Agricultural Innovations through Mass Media in Misau Local Government Area of Bauchi State, Nigeria

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Abstract:

This study examined Challenges to Women on Adoption of Agricultural Innovations through Mass Media in Northern part of in Bauchi State, Nigeria. Multi-stage random sampling technique was used in the selection. In stage one, four wards (4) wards were selected using simple random sampling technique. In the second stage, two (2) communities were selected using systematic random sampling technique from each ward, giving a total of 8 communities. The third stage involved the use of purposive sampling in the selection of ten (10) women farmers from each of the 8 communities, thus giving a final sample size of eighty (80) respondents. The study showed that 45% of the respondents fell within the ages of 20 – 30 years with mean age of 38 years. The results also revealed that 55% and 78.75% of the respondents had formal education and were married respectively. The results further showed that 71.25%, 60% and 78.75% of the respondents had household size of 1-10 members, years of experience of 6 – 10 years and cultivated 1-5 ha respectively. On the other hand, substantial number (37.50%) of the respondents revealed that radio was the major source of information. However, 38.75% of the respondent preferred television and majority (71.25%) agreed that programmes were broadcasted using common language. The result of regression analysis revealed that age, educational level, household size and years of experience strongly influence women adoption of innovations at $P < 0.001$. The major constraints toward the use of mass media include timing of the programme (33.75%), nature of the innovation (25%), and language barrier (15%) among others. The study recommended that agricultural programmes should be aired at the early hours of the night. Extension should deliver simple innovations using local language. These would facilitate effective adoption of agricultural innovations and subsequently enhanced the economic wellbeing of rural women.

Keywords: Women, innovations, adoption and mass media

1. Introduction

1.1. Background of the Study

Women play a very important role in agriculture and in improving the quality of life in rural areas. They play role in social and economic development, especially in small scale enterprise, their participation in livestock care, production and management activities is substantial (Saddique *et al.*, 2009). Women are almost entirely responsible for operations such as storage, handling, processing and marketing in rural economies; this is why their work load is enormous (Mbah, 2008 & FAO, 1990) opined that women play a vital role in post-harvest activities of agricultural activities. However, their contribution often remains concealed due to some social barriers and gender bias. Also, government programs often fail to focus on women in agriculture. It is a common knowledge that women in Nigeria contribute more than 50 percent of the Nation's population; also the bulk of the rural women partake in agriculture and produce the bulk of agricultural produce, but still did not achieve a desired results in terms of positive impact and its sustainability (Mohammed, 2003).

Communication is very important for effective transfer of technologies that is designed to boost agricultural production. Farmers that benefit from such technologies must first have access to them and learn how to effectively utilize them in their farming systems and practices. Information is the key ingredients for success in the operation and management process of the agricultural activities. Farmers adopt new technologies and put them to use, when the new idea reach their farms and homes through effective extension communication methods such

as mass media channels. Agricultural information practice is the central role of agricultural extension through which proven technologies are disseminated to the farmers.

Generally, mass media methods in agricultural information dissemination are useful in reaching a wide audience at a very fast rate. They are useful as sources of agricultural information to farmers and as well constitute methods of notifying farmers of new developments and emergencies. They could equally be important in stimulating farmers' interest in new ideas and practices (Ani *et. al.* 1997). Lwoga (2010) observed that mass media channels are important in providing information for enabling the rural community to make informed decisions regarding their farming activities, especially in the rural areas of developing countries. Mass media is increasingly becoming a veritable instrument for transforming Nigerian agriculture through which people will derive pleasure for learning how the food they eat daily is produced and they may be encouraged to develop an interest in growing some food themselves (Patrick, 2001). Mass media have the capacity to uplift the knowledge and having an impact on behaviors of farmers (Nazari and Hassan, 2011).

However, the mass media involve one-way communication from information source to the receivers and delayed feedback, which of course is not essential for effective communication (Muhammad, 2005). An agricultural extension service, which typically has a major responsibility for carrying out this information transfer function, have a number of problems related to staffing ratio, staff training, transportation and resource mobilization to communicate effectively to farmers, they have not been able to make a sufficient change due to several factors militating against them. Therefore, there is a need to examine these factors that actually militates against women on the adoption of agricultural innovation through mass media. The aims of this study include the following;

1. To identify the socioeconomic characteristics of the respondent in the study area.
2. To identify the sources of mass media used in the study area.
3. To examine the socioeconomic factor that influences the adoption of agricultural innovation through mass media.
4. To identify the constraints limiting the used of mass media in dissemination of agricultural innovations.

2. Research Methodology

2.1. The Study Area

The study was conducted in Misau Local Government Area (LGA) of Bauchi State, Nigeria. The LGA is located in the northern part of Bauchi State and its occupies a total land area of 12, 07749,119 km², it lies between the coordinates of 9.3⁰ and 12.3⁰ north of the equator and 9.5⁰ and 11⁰ east of the Greenwich meridian. Misau LGA has a population of 261,410 people. The LGA experienced both wet and dry season with temperatures ranging between 15-29.7 °C in January to 23-32.4 °C in June with an average relative humidity of 40.1 percent. It is also characterized with an average annual rainfall of 85.6mm (CPP, 2011). Agriculture is the major economic activities. Crops cultivated include, maize, rice, sesame, groundnuts, millet, sugarcane etc. Irrigation farming is also practiced mostly around the *fadama* areas.

2.2. Sampling Procedure and Data Collection

The sampling frame for this study was drawn from women farmers in Misau Local Government Area of Bauchi State. Multi-stage random sampling technique was used in the selection. In stage one, four wards (4) wards were selected using simple random sampling technique. In the second stage, two (2) communities were selected using systematic random sampling technique from each ward, giving a total of 8 communities. The third stage involved the use of purposive sampling in the selection of ten (10) women farmers from each of the 8 communities, thus giving a final sample size of eighty (80) respondents.

Descriptive and inferential statistical tools were used for data analysis. Frequency distribution, percentage, means and standard deviation were used to analyze the specific objectives I, and part of objective II, and IV. Rabindra (2008) analyzed and interpreted his data by using simple statistical tools. To achieve objective III multiple regression analysis was used.

According to Udofi (2005), multiple regression measures the effect of numeral independent variables $x_1, x_2, x_3, x_4, \dots, x_n$ on a single variable. Multiple regression technique involves more than one independent variables and it is to predict the single dependent variable by set of independent or explanatory variables. The implicit form of the regression equation is presented as follows:-

$$Y=f(x_1x_2x_3\dots x_n) \dots\dots\dots (1)$$

$$\text{The value of } Y. = a+b_1x_1+b_2x_2+b_3x_3+b_4x_4\dots\dots\dots b_nx_n \dots\dots\dots (2)$$

Where:

y= Estimated value of the dependent variable

a=y intercept

$b_1, b_2, b_3, b_4, \dots, b_n$ = the regression coefficient of the independent variable

$x_1, x_2, x_3, x_4, \dots, x_n$ = independent variables.

However, the explicit form of the regression equation used for the study is mathematically expressed as:-

$$Y= a+b_1x_1+b_2x_2+b_3x_3+b_4x_4+b_5x_5+b_6x_6+u \dots\dots\dots (3)$$

Where:

Y= Adoption of agricultural innovation through mass media

a=Intercept

b_1-b_8 =Regression Coefficient

X_1 = Age

X_2 =Education level

X_3 = Marital status

X_4 = years of experience

X_5 = Household size

X_6 = Farm size

U=error term

3. Results and Discussions

3.1. Socioeconomic Characteristics of the Respondents

The results in Table 1 indicated that 45.00% of the respondents fell within the age range of 31-40 years. This indicates that women farmers in the study area were in their active age and therefore expected to effectively adopt new ideas due to the fact that they can take risks. The results also showed that majority (55.00%) of the respondents had formal education. This is in line with the finding by Ango *et al.* (2012) where majority (64%) of the participating farmers had attended formal education. Lack of adequate education has been identified as part of the major factors militating against institutional support towards agriculture (Nwaru, 2007). The results also revealed that most (78.70%) of the respondents were married, which was expected because of the importance attached to the marriage institution especially in the rural areas where farm labour comes from families. This could be attributed to the fact that people in the study area believed that marriage is an essential obligation of adult and is still cherished in the study area. This finding is in line with the report of Adamu (2005) that said 95.00% of the peasant farmers in Nigeria were married. The result also showed that 40.00% of the respondents had a household size of 6-10. This is similar to the findings of Aina *et al.* (2013) who discovered that 58.60% of their respondents had household size of between 6-8 persons. Furthermore, the result depicted that the majority (60.00%) of the respondents had years of experience of 6-10 years in the study area. Years of farming experience had considerable effects on their farmers' productive efficiency. The result is in line with the findings by Adegbite *et al.* (2008) that the majority of respondents contacted in his study area had 6-10 years of experience in farming. The result also revealed that 78.75% of the respondents cultivated 1-5ha of land. This implies that farmers in the study area were small scale holders. This is not a healthy situation because small land holding is one of the factors for the subsistence nature of agriculture in most Sub-Saharan African countries including Nigeria.

Variables	Freq	Percentage
Age (years)		
20-30	17	21.25
31-40	36	45.00
41-50	18	22.50
Above 50	9	11.25
Total	80	100
X: 38		
S.D: 10.16		
Educational Level		
Primary Education	24	30.00
Secondary Education	15	18.75
Qur'anic Education	36	45.00
Tertiary Education	5	6.25
Total	80	100
Marital Status		
Single	2	2.50
Married	63	78.75
Divorced	7	8.75
Widowed	8	10
Total	80	100
Household Size		
1-5	25	31.25
6-10	32	40.00
11-15	18	22.50
16-20	4	5.00
Above 20	1	1.25
Total	80	100
X: 8		
S.D: 4.69		
Years of experience		
1-5	24	30.00
6-10	48	60.00
11-15	4	5.00
Above 15	4	5.00
Total	80	100
X: 7		
S.D: 3.38		
Farm size (hac)		
1-5	63	78.75
6-10	5	6.25
11-15	12	15
Total	80	100

Table 1: Distribution of socio-economic characteristic of the respondents
Source: Field Survey, 2014, X= Mean values, S.D=Standard Deviation

3.2. Respondents' Use of Mass Media

The result in Table 2 showed that 37.50% and 27.50% of the respondents reported the use of Radio and Television as a source of information for agricultural innovations in the study area respectively. Ani and Baba (2009) observed that radio cuts across the literacy and illiteracy societies and thus enhanced effective dissemination of agricultural technologies. Similarly Nwuzor (2000) opined that radio programme can be done almost anywhere through the use of a tape recorder. Among other sources of information, radio and TV also depicted value for information dissemination (Okwu and Daudu, 2011).

As shown in Table 2 the most preferred source of information by farmers include Television (38.75%), Radio (26.25%) and Newspapers/magazines (11.25%). This may be due to the fact that Television can serve as a means of demonstration of technologies. Shaffril *et al.* (2009) have concluded that the agro-based websites surfing among the rural community is at a low level. Khan (2010) also affirmed that lack of computer literacy and lack of interest appeared as major hurdles in using the internet, thus the role of information in rural development for national development cannot be overemphasized.

On the other hand, the results in Table 2 revealed that most (71.25%) of the respondents affirmed that they preferred the used of common language in transferring innovation and advices in their area. The implication of this is, it facilitates quick adoption and diffusion of agricultural innovations over a short period of time.

However, 37.50% and 25.00% of the respondents preferred night and afternoon hours for listening to agricultural programmes in the study area. This might be due to the fact that afternoon and night hours are considered period of resting and leisure. Audu (2003) in a related study in Bali Local government Area of Taraba State revealed that 62.5% of farmers preferred listening to radio and television programmes in night hours.

Variables	Freq	Percentage
Sources of information		
Newspaper/ Magazine	11	13.75
Radio	30	37.50
Television	22	27.50
Posters/ Pamphlets	8	10.00
Internet	4	5.00
All of the above	5	6.25
Total	80	100
Mass media preferred		
Newspaper/ Magazine	9	11.25
Television	21	26.25
Radio	31	38.75
Posters/ Pamphlets	8	10.00
Internet	4	5.00
All of the above	7	8.75
Total	80	100
Use of common languages in technology dissemination		
Yes	57	71.25
No	23	28.75
Total	80	100
Preferred time of listening to agricultural programme		
Morning (5am – 11.59am)	17	21.25
Afternoon (12noon – 4pm)	20	25.00
Evening (4pm – 7.59pm)	13	16.25
Night (8pm – 11.59pm)	30	37.50
Total	80	100

Table 2: Distribution of respondents according to information need
Source: Field Survey, 2014

3.3. Socioeconomic Factors Influencing the Adoption of Agricultural Innovations through Mass Media

The results of regression revealed that all factors had a positive coefficient with the exception of land size with the negative marginal contribution indication that as land hectareage increase adoption reduces. This is not in line with a priori expectation. However, the results showed that age, education, household size and experience were significant in influencing respondents' adoption of innovations through mass media in the study area at $P < 0.001$. The coefficient of multiple determination (R^2) for the regression was 73.9%, indicating that 73.9% of the variations in adoption of agricultural innovation through mass media (Y) was explained by variations in the explanatory variables (age, education level, marital status, years of experience, household size and farm size) included in the analysis. The remaining proportion can therefore be attributed to the error term.

Socioeconomic factors	B	Std err	T	Sign
Constant	3.740	1.267	-2.952	0.004
Age	2.127	.685	3.103	0.003
Edu level	0.124	.042	2.952	0.004
Marrital status	0.287	.240	1.194	0.236
Household size	1.804	.536	3.366	0.001
Years of experience	0.213	.078	2.727	0.008
Land size	-0.088	1.00	-881	0.381

Table 3: Influence of some selected socioeconomic on the adoption of agricultural innovation through mass media
Source: Field Survey, 2014
R: 73.9

3.4. Factors Affecting Respondents' Attitude toward Mass Media

Table 4 revealed that 33.75% of the respondent reported to have problem in the timing of agricultural programmes. Twenty five percent (25%) of the respondent showed that the nature of the innovation affects their attitude toward the mass media use and 15.00% indicated that language barrier is their problem. Muntaqha (2007) in a related study revealed that 47.62% of his respondent had problems in obtaining information from a media source due to poor airtime of programme.

Factors	Freq	Percentage
Nature of innovation	20	25.00
Time lag in replaying the information	02	2.50
Language barriers	12	15.00
Societal norms	05	6.25
High cost	08	10.00
Timing of the programme	27	33.75
Poor signal	04	5.00
Power failure	02	2.50
Total	80	100

Table 4: Factor affecting attitude toward mass media use
Source: Field Survey, 2014

4. Conclusion

It has been observed that mass media is an efficient means of communication which possesses the peculiar quality of sound, pictures and practical method of demonstrations; it also serves as an important source of farm information dissemination medium to the farmers. It has also been concluded that mass media are 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, cost of battery, maintenance of the medium, cost of using a 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 and television stations, and most of the farmers agreed that the media sources are highly accessible. It is, therefore, concluded that the information disseminated through the mass media is highly relevant and was utilized in solving problems of the farmers.

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