

*Research Article*

# Factors swaying the efficacy of communication network among rural female farmers in Kano state, Nigeria

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## ABSTRACT

The study focused on the factors swaying the efficacy of communication network among rural female farmers in Kano State. Random sampling technique was used to select 80 female farmers from four villages and data were collected by the use of questionnaire. The data were analyzed using descriptive statistic, Likert scale and Logit Regression. The result of the study showed that 43.8% of respondents were above 41 years, 41.3% had no education while 62.5% reported that extension agents visits them monthly. Group contact was also found to be the most effective means of communication among the women farmers. Farming experience and education had significant ( $P>0.05$ ) and positive effect on communication network while age was significant but negative. Constraints faced by extension workers in reaching rural farmers include high illiteracy level among the farmers, cultural and religious challenges and non- inclusion of rural farmers in extension programmes. Based on the findings, it was concluded that group contact method of extension teaching was mostly used by the farmers and thus recommended that group contact should be given highest priority in the study area and adult literacy class should be organized for the rural farmers.

**Keywords:** Efficacy, Communication network, Rural female farmers, Extension agents, Kano

## INTRODUCTION

Communication is "a process by which two or more people exchange ideas, facts, feelings, impressions in a way that each benefits from a clear understanding of the meaning, intent and use of the message" (Ike, 2003). According to him, successful communications in extension requires a skilled communication effectively treated to an appropriate audience that responds as desired. Extension services are essentially communicative (Akeredolu and Ajayi, 1995). The ultimate aim of an extension system is to effectively and efficiently deliver information to end- users in a comprehensible and utilizable manner. Kano state agricultural project (KSADP, 2004) conducted a radio and television programmes aimed at educating farmers on the use of recommended improved maize practices. They also reported that ideally, the ratio of extension workers to farmers should be 1:500 farm families. This is to make extension work easier and effective. Rural women farmers are known to play a vital role in food production and food security.

They account for 70% of agricultural work, 80% of Nigeria food producers and 100% of those who process basic food stuffs consumed in the country and they also under take about 60% to 90% food marketing (Fresco 1998). Women in general actively participate in farming activities and farm produce processing in addition to their domestic and reproductive responsibility (United Nation, 1996). Fabiyi et. al. reported that women are heavily involved in food production especially in places like Billiri Local Government Area of Gombe State.

In most countries extension training and services have been staffed mostly by men (Jiggins, 1998) who are not usually trained in agricultural extension methods on how to communicate with women farmers and in gender specific areas. This may be the reason why in a study of women farmers conducted in four different countries (Syria, Nigeria, Thailand and Trinidad) majority of the respondents of Syria (82.5%), Nigeria (65.6%) and Thailand (82.5%). Nigeria (65.62%) and Thailand (41.25%) expressed a preference for female extension

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agents, while most of the respondents in Trinidad were gender-neutral (Das, 1995). Chale identified some problems of women farmers in Nigeria to include among others: Insufficient and ineffective extension services to farm women, inadequate use of existing women farmers group, urban directed flow of information and few women extension workers. But majority (about 60%) of women farmers in Nigeria are illiterates (Das 1996). Meaning they cannot read and write which makes the use of multimedia such as print to be an unsuitable communication channels to them. This further compounds the problems of communication network with women farmers. Agricultural extension programmes ensure that information on new technologies, plants varieties and agricultural practices industry processing and marketing reaches farmers however in the developing world, it is common practices to direct extension and training services primarily toward men, a survey showed that female farmers receive only 5% of all agricultural extension services worldwide. Ostyina and Resenberg, however further stated that It is due to lack of effective communication strategies and methods, Moreover, agricultural extension networks do not provide female farmers with satisfactory service and hence there is an urgent need for a better understanding in this regard for developing effective extension and communication networks to reach the female farmers.

### Objectives of the study

The main objective of this study is to examine the factors that sways agricultural communication networks with female farmers in Kano State. The specific objectives of the study are to:

- Identify the socio-economic characteristics of the respondents
- Examine the communication network used by extension agents in study area,
- Determine the factors swaying efficacy of means of communication in the study area,
- Identify the factors swaying efficacy of communication network with female farmers
- Determine the constraints of extension in reaching rural female farmers in the study area.

## MATERIALS AND METHODS

### Study area

This study was carried out in Kano State. Kano State is located in the North-western part of Nigeria and it is bordered to the north by Niger Republic, to the north-west and north-east by Katsina and Jigawa States respectively. It is also bordered by Bauchi and Kaduna States to the South and is situated between latitude 10° 25'N and 13° 53'N and longitude 7° 10'E and 10° 35'E. Ecologically, North-Western zone is situated in the guinea savannah region of the country (National Bureau of Statistics (NBS), 2005).

Kano State covers a land mass of 20,131 km<sup>2</sup> (7,773 sq m).

According to the last national census, Kano has a population of 9,383,682 million people making it the most populated state throughout the federation (National Population Commission (NPC), 2006). The climate of the state is tropical. Kano State experiences two seasons, rainy and dry seasons common to tropical regions. The rainy season normally starts in April and ceases in October, while the dry season begins in November and ends in March. The dry season reaches its peak in January and February when the dusty North east trade winds (Harmattan winds and dusts) blow across the State. The climate, soil and hydrology of the State provide conducive atmosphere for the growth and cultivation of most cereal crops, grazing land for animals and fresh water for fishing and forestry. The mean annual rainfall is 57,328.75 mm whereas the maximum is 73,529.82 mm which is usually around August (Kano State Ministry of Agriculture, 2011). The soil tends to be generally fertile ranging from loamy in the wetter southern parts to sandy loam in the drier northern part (Miko, 2010). However, cereals, legumes and horticultural crops are predominantly grown by farmers in the state. Other agricultural possibilities include inland fisheries aquaculture, cattle, sheep, poultry, and wild life.

### Data collection

Respondents were selected using a multi stage random sampling technique. Twenty (20) female farmers were selected from four (4) villages giving a total of 80 farmers. Data were collected using interview schedule with the help of trained ADP enumerators under the supervision of the researcher. Data collected included information on socio economic characteristics (age, sex, marital status, years of farming experience etc.), Also, distance from extension agent's residence, number of contacts with extension agent, income of the female farmers and constraints faced by extension agents in reaching the rural female farmers.

### Data analysis

Descriptive statistics, Likert scale and logit regression were used to analyze the collected data. It was hypothesized that there is no relationship between communication and female farmers. In implicit form, the model is specified as:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, U)$$

Where

Y= the effectiveness of the communication network

X<sub>1</sub>=Age of farmer (years)

X<sub>2</sub>=Level of education (number of years spent in school)

X<sub>3</sub>=Years of farming experience (years)

X<sub>4</sub>=Dialect spoken by the respondent

X<sub>5</sub>=Distance of village from extension agent (Km)

X<sub>6</sub>=Gender (male 1 and female 2)

X<sub>7</sub>=Number of contact with the extension agent

X<sub>8</sub>=Income of the women farmers (I)

X<sub>9</sub>=Farm size (ha)

U=error term

## RESULTS AND DISCUSSION

### Socio-economic and demographic characteristics of the respondents

The socio-economic characteristics of the farmers were analyzed and the result shows that (43.8%) of the respondents were above

41 years of age this implies that farming is gradually been left in the hands of the aged. This is in accordance with the findings of Miko who reported that there is an increasing number of aged farmers in most rural areas of the country. This might be due to the migration of the youths to urban centers in search of white-collar jobs. The results also revealed that a reasonable portion (37.5%) of the female farmers were married which implies that, there will be more members of the family working on the farm (Table 1).

**Table 1.** Socio-economic characteristics of the respondents (N=80).

Description	No of respondents	Percentage (%)
<b>Age</b>		
<30	14	17.5
31-40	31	38.7
≥ 41	35	43.8
<b>Marital status</b>		
Single	3	3.7
Married	70	87.5
Divorced	1	1.3
Widow	6	7.5
<b>Level of education</b>		
Primary	13	16.3
Secondary	9	11.3
Quranic educ	25	31.1
No education	33	41.3
<b>Farm size</b>		
≤ 1.5	25	44
1.6-2.0	10	12.5
2.1-3.0	18	22.5
3.1-4.0	12	15
>4.1 4	4	6
<b>Farming experience</b>		
≤11	19	23.7
11-25	19	23.7
16-20	12	15
≥21	30	37.5
<b>Source:</b> Field survey 2023		

This is in line with a research conducted by Ahmed who reported that, farming communities in Nigeria consider marriage as an important aspect of their tradition, culture and believe that, family members will assist with farming activities. About (41.3%) of the respondents had no any form of education. This implies that there are quite a number of female in the study area who can neither read nor write.

This is in agreement with the findings of Oyetapo who reported that, education helps farmers to cope with complexities associated with technological adoption.

Furthermore, the result on farm size shows that (22.5%) of the respondents had farm size of 2.1 and 3.0. This, according to Onwubuya, is a peculiar characteristic of Nigerian farmers who are mostly small scale holders. Finally, about (37.5%) of the female farmers had 21 years and above of farming experience. This shows that, females have good farming experience. Isa stated that experience in farming is related to the ability of a farmer to have knowledge on an innovation which ultimately increases the impact of agricultural development of the existing technology.

## Extension communication network used by extension agents

Table 2 shows that almost all the female farmers (98.7%) were

visited by an extension agent. This indicates that the women farmers have access to information about innovations.

**Table 2.** Extension communication network used by extension agents (N=80).

Extension contact	Percentage (%)
Extension agent visit	
Yes	98.7
No	1.3
Frequent visit	
Bimonthly	11.3
Quarterly	23.8
Monthly	62.5
Yearly	1.3
Source: Field survey 2023	

This finding agrees with the work carried out by Miko who reported that, extension agents help to transfer improved technologies to farmers through regular extension visit which creates an avenue for one- on- one interaction between the farmers and the extension agent. Moreover, about (62.5%) attested that, they were visited by extension agent once in a month. This finding agrees with Ado who reported that, farmer's responses to adopt innovations can be increased by the number of extension contacts.

## Communication network used by extension agents

Table 3 revealed that, group contact is the most effective means of communication among the female farmers in the study area. This may be due to the fact that, majority of the female farmers are above 41 years and have no any form of Education as shown in Table 1.

**Table 3.** Distribution of respondents by the communication network used by extension agents (N=80).

Communication	Percentage (%)
Group contact	84.33
Audiovisual	8.43
Individual contact	3.61
Radio	2.41
Television	1.22
Total	100.0

Group contact provides the extension agent with the advantage of interacting with a group of farmers at the same time as well as reducing the cost per head. It also increases the coverage of farming community leading to subsequent dissemination of agricultural innovations among farmers.

effective in disseminating information to female farmers. These might be due to age and educational status of the female farmers. However, the use of contact farmers helps in dissemination of innovation because the chosen farmer speaks the local's dialect and cultivates the same soil as other respondents.

## Efficacy of means of communication

Table 4 using a Likert scale of 1-4 indicates that the use of contact farmer, group contact and individual contact were highly

**Table 4.** Distribution of the respondents based on the effectiveness of means of communication.

Means of communication	Mean
Radio	2.36
Television	2.35

Contact farmers	3.55*
Audio visual	1.74
Group contact	3.66*
Newspapers	1.13
Individual contact	3.55*
ADP	3.1
*Highly effective Source: field survey, 2023	

Group contact on the other hand, tends to help members perceive, hear, discuss and participate in various activities. While individual method gives the extension worker relevant information of farm and home conditions, as well as farmer's living standard which in turn builds farmers confidence in the extension agent.

#### Factors influencing the effectiveness of communication network

Table 5 showed the logit regression result. The result revealed that age is negatively significant at (1%). This implies that, as the age of the rural farmer's increases, there is a probability that, the communication network being used by the extension agents will be ineffective. This is in line with the findings of Sofoluwe, Tijjani and Baruwa who reported that, youths who are involved in agricultural activities have been found to be more conversant with innovations and may be willing to take risk and adopt to better farming techniques because of their longer planning perspectives. There is a probability that, the communication

network used by the extension agent will not be effective as the level of education increases. This is because, the result shows that education was negatively significant at (5%) which is not in accordance with the findings of Isa who reported that, formal education has a positive influence on the adoption of new technologies. Farming Experience was negatively significant at (10%). This implies that, as the years of farming experience increase, there is a probability that, the efficacy of the communication network will reduce. This is not in line with the findings of Isa and Miko who collectively reported that, farming experience helps the farmers to be accustomed to farming challenges, increases in crop productivity as well as level of adoption of innovation. Lastly, farm size was also negatively significant at (10%). This implies that as the level of farm size of the rural farmers' increases, there is a probability that, the level of efficacy of communication network used by the extension agents will decrease. This is not in agreement with the findings of Ado, Isa and Miko who reported that, adoption of innovation tends to increase as farm size increases.

**Table 5.** Logit regression estimate for factors influencing the effectiveness of communication network with rural farmers in Kano.

Variable	Co-efficient	Z-values
Age	-0.7368	-1.85*
Education	0.1959	2.26**
Experience	0.1417	2.54***
Distance	-0.417	-0.11
Extension	-0.1278	-0.31
Income	3.44	-0.77
Farm size	1.5898	2.78***
Constant	9.255	3.60***
Chi-square		35.71***
Pseudo R <sup>2</sup>		0.3539
Chi-square=35.71, Logit regression estimate of ***P<0.1, P<0.5, *P<1.0		

#### Constraints of extension in reaching the rural farmers

The result on Table 6 showed that, high illiteracy level, cultural and religious reasons and non-inclusion of rural female farmers in programme planning are among the three most important

challenges faced by extension agents in reaching rural female farmers. High level of illiteracy was found to be the first constraint faced by the extension agents in reaching the rural

female farmers.

**Table 6.** Distribution of respondents according to constraints of extension in reaching rural female farmers.

Constraints	Percentage	Rank
Traditional and religious challenges	23.10	2 <sup>nd</sup>
Non-inclusion of female in programmer	23.08	3 <sup>rd</sup>
High illiteracy among female	27.08	1 <sup>st</sup>
Fewer numbers of female in extension.	21.28	4 <sup>th</sup>
Service not favoring	3.26	5 <sup>th</sup>
Total	100.0	
<b>Source:</b> field survey, 2023, *Multiple responses		

The ability to read, write and communicate helps the rural female farmers to understand and possibly try the innovations introduced by the extension agents. The Nigerian culture and tradition of not engaging female entirely in agricultural activities barred them to own or inherit cultivable land. Non-inclusion of rural female farmers in programme planning was ranked third. The problem of top-bottom approach in programme planning is still been practiced when it comes to solving farmer's problem and this has led to unswerving failure of many projects. Other constraints include few numbers of rural female farmers in extension and telecommunication fluctuating services.

## CONCLUSION

The study showed that (41.3%) of the rural female farmers had no any form of education and were above 41 years and this pretentious the efficacy of communication network. The finding also showed that, group contact method of extension teaching was mostly used by the female farmers. This may be as a result of poor educational background of the female farmers. This is possible because the method brings specific information with extension agents and the female farmer brings benefit.

## RECOMMENDATION

- Based on this study, it was recommended that, appropriate methods must be used in disseminating information to the female farmers.
- More female extension workers should be engaged, trained and motivated by the government and other private organizations.
- Extension organizations should always include rural farmers' representatives in their programme plannings so that, the strategies of reaching rural farmers can be spelt out for the field workers to effectively execute their programmes excellently.

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