



## ASSESSMENT OF CROP FARMERS' PATRONAGE AND PERCEPTION OF AGRICULTURAL PROGRAMMES OF SOLID FM RADIO IN SOUTHERN AGRICULTURAL ZONE OF NASARAWA STATE, NIGERIA

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### ABSTRACT

*The study was carried out to assess crop farmers' patronage and perceptions of the agricultural programmes of Solid FM Radio in the Southern Agricultural Zone of Nasarawa State, Nigeria. A total of 277 farmers were selected through a multi-staged sampling procedure. Data were collected using a structured questionnaire and analysed using descriptive statistics. The results of the analysis revealed that the majority of respondents were male (81.2 %), with a mean age of 40 years, had formal education (81.2 %), had a mean household size of 5 persons, and had a mean farming experience of 9 years. The majority (64.3 %) of the respondents had not accessed loan facilities, but had extension contacts (60.3 %). The majority of respondents (63.9%) belonged to one cooperative group or another, and all respondents owned a radio set or had access to one. The results further showed that all respondents were aware of Solid FM's popular agricultural programmes. While 83.4 % listen to 'Mu koma gona' (let's go back to farming), 84.8 % listen to Noman shinkafa jari (rice farming: a profitable venture). Most respondents (41.5 %) had been listening to Solid FM's agricultural programmes for 1-3 years. They were not regular listeners of 'mu koma gona' (71.1 %) and Noman shinkafa jari (71.8 %). Furthermore, the*

*majority (88.4 %) of respondents were delighted with the information they received from the agricultural programmes, and there was no significant association between the duration of listenership to agrarian programmes on the radio and satisfaction with them. The study recommended that the programmes be sustained and that the radio station do more to increase patronage.*

Key Words: Agricultural programmes, Crop Farmers, Patronage, Radio

## INTRODUCTION

The dissemination of agricultural information through the media to educate farmers and increase their productivity and income cannot be overemphasised. According to Duncan *et al.* (2024), mass media technologies are beneficial for empowering rural farmers by disseminating various forms of production information, which can directly advance farmers' social and economic lives and the broader development of agriculture. Similarly, Adejo *et al.* (2016) and Tijani *et al.* (2019) both asserted that, among the mass media, radio is the most effective at reaching rural areas. According to Omoghene *et al.* (2017), radio is one of the most appropriate media for agricultural communication because it spans distances and thus has immediate effects. It has been identified as the only mass medium with which the rural population is very familiar.

Abdul Aziz *et al.* (2013) observed that the introduction of radio broadcasting in Nigeria over the past century has brought about profound changes in society through Agricultural broadcasting. Various radio programme designs have been used to achieve the greatest reach among farmers. Farm broadcasting or "Farm Casting" refers to the whole system and structure within broadcasting institutions through which agricultural radio programmes are produced and disseminated to the general public, mainly as part of agrarian extension strategies. Olajide and Amusat (2012) report that farm broadcasting in Nigeria started in the 1960s through the regional government ministries of agriculture.

Many Nigerian radio stations now broadcast agricultural programmes to meet farmers' agricultural information needs. Most of these programmes are presented in different formats, predominantly in the local languages understood by the people. Nasarawa Broadcasting Service (NBS) Lafia is also among these stations. The NBS (Solid FM 97.1, as it is popularly called) was established in 1996 by the government of Nasarawa State, Nigeria, and was empowered to disseminate information for the purpose of informing, educating, and entertaining the people of the state.

In an effort to achieve its objectives in agriculture and to meet the information needs of farmers in Nasarawa State, NBS (Solid FM) designed two agricultural programmes: *Mu koma Gona* (let's go back to farming) and *Noman Shinkafa jari* (rice farming: a profitable venture). All the programmes are presented in Hausa. *Noman Shinkafa Jari*, sponsored by Radio Farm International (RFI); the other is produced and hosted by NBS Radio (Solid FM). The programmes cover various aspects of agriculture, including crop production, livestock, and fisheries; post-harvest handling practices; marketing strategies; environmental protection; prices of farm inputs; credit and loan facilities; weather forecasting; and climate change, among others.

Over the years, Solid FM has aired various agricultural programmes aimed at improving agricultural production, rural development, and farmers' livelihoods. Although the programmes are effective means of reaching farmers with agricultural information, their impact on farmers' output, income, and improved livelihoods has not been clearly evident. Moreover, there is a dearth of empirical studies on farmers' patronage and perceptions of Solid FM's agricultural programmes in the Southern Agricultural Zone of Nasarawa State; hence, it is not known whether crop farmers are actually listening to the programmes and adopting the technologies they promote. This leaves a gap that needs to be filled. Although previous studies (Abdulazzi and Ibrahim, 2024; Omoghene *et al.* 2017) have examined the patronage of radio agricultural programmes in Nigeria, no recent studies appear to have explicitly assessed crop farmers' patronage and perceptions of Solid FM Radio's agricultural programmes in the Southern Agricultural Zone of Nasarawa State. This gap underscores the purpose of the present study.

### **Objectives of the study**

The broad objective of this study was to assess crop farmers' patronage and perception of agricultural programmes of Solid FM Radio in the Southern Agricultural Zone of Nasarawa State, Nigeria. The specific objectives were to;

1. described the socio-economic characteristics of the respondents
2. determined the respondents' awareness of the agricultural programmes of Solid FM Radio
3. determined the respondents' level of patronage of the agricultural programmes of Solid FM Radio in the study area

4. determine respondents' level of satisfaction with the agricultural programmes of Solid FM Radio.

### **Hypothesis**

HO: There is no significant association between the duration of listening to agricultural programmes on solid FM and the level of satisfaction with the programmes.

## **METHODOLOGY**

### **Study Area**

The study was conducted in the Southern Agricultural Zone of Nasarawa State, Nigeria. The zone shares boundaries with Benue State to the South, Taraba State to the East, Plateau State to the Northeast, and Nasarawa Eggon Local Government Area to the North, and Nasarawa Local Government Area to the West. The area is located between latitudes 90.330N and 90.320E and covers a land area of 10,644 square kilometres (Nasarawa State Government, 2020), with a population of 811,020 people (National Population Commission, 2006). The study area is characterised by a period of rainy Season from May to October. The average rainfall is approximately 1750 mm, and the annual temperature range from 22.70 °C to 39.00 °C (Nasarawa State Government, 2020).

Agriculture is the dominant occupation in the area. Major crops grown in the study area include: yams, cassava, maize, rice, beni-seed, melon, groundnut, and tree crops such as mangoes, cashews, and oranges. The farmers also raise livestock, including cattle, sheep, goats, and poultry. The zone comprises five local government areas: Lafia, Obi, Awe, Keana, and Doma.

### **Population, Sample and Sampling Technique**

The target population for this study comprised all the crop farmers in the Southern Agricultural zone who listened to Solid FM Radio. A multi-stage sampling technique was employed to obtain the sample size of 277 crop farmers from the 906 registered farmers. Stage 1 involved a random selection of three (3) Local Government Areas from the five Local Government Areas in the study area. Stage II was a random selection of three villages from each of the three selected Local Governments, making up a total of nine villages. Lastly, stage III involved the random selection of farmers from each village based on the list of 906 crop farmers obtained from the Nasarawa Agricultural Development Programme. The list was subjected to Yamane's (1967) formula. This was to ensure proper selection and distribution of respondents accordingly.

The formula is presented in equation 1. According to the Yamane (1967) formula;

$n = N / (1 + N (\alpha)^2)$  to get the sample size  $n$ ----- 1.

Where,  $n$  =desired sample size

$N$  = population under study(906)

$\alpha$  = margin of error (0.05).

The working is summarised as follows:

$$n = \frac{906}{1 + 906} \times 0.0025 =$$

$$\frac{906}{1 + 2.654} = n = \frac{906}{3.265}$$

$$n = 277.$$

### Data Collection and Analysis

Primary data were collected using a structured questionnaire and analysed using both descriptive (frequency, percentage, mean) and inferential (chi-square) statistics.

## RESULTS AND DISCUSSION

### Socio-economic Characteristics of Respondents

The results of the analysis of socio-economic characteristics of respondents are presented in Table 1 and discussed as follows:

**Age Distribution:** The results revealed that the majority (52.0%) of respondents were aged 38 or older, with a mean age of 40 years. This implies that the majority of the respondents were still active and strong enough to participate actively in agricultural activities. This age range has been categorised as economically active, innovative, and productive. This finding is in agreement with Tafida and Sabiu (2021), who studied the utilisation of radio agricultural programmes among crop farmers in Kano State, Nigeria, and found that most crop farmers were active and well-positioned to utilise them.

**Sex:** The results showed that the majority (80.1%) of respondents were male, while only 19.9% were female. These results suggest that males were mainly engaged in farming activities in the study area, probably because farming is more physically demanding, traditional gender roles, and

the fact that men have greater access to land and other farming inputs, as well as limited capital available to female farmers. The results also imply that male farmers listen to Solid FM Radio's agricultural programmes more than female farmers. This result corroborates the findings of Njoku and Ugboaja (2019) that radio-farmer agricultural programme listenership was dominated by male farmers in Imo State, Nigeria.

**Level of Education:** Table 1 further showed that the majority (33.9%) of respondents had secondary education, 31.8% had advanced education, 14.8% had primary education, and 19.5% had no formal education. This indicates that most respondents can read and write, and understanding and comprehending innovation on the radio will not be difficult. This result aligns with the study by Yakubu *et al.* (2019), who examined the effectiveness of radio agricultural programmes in Jibia Local Government Area of Katsina State, Nigeria, and revealed that the majority of farmers had received formal education. According to Omoghene *et al.* (2017), education was found to influence farmers' access to, comprehension of, and adoption of modern agricultural practices.

**Household Size:** The majority (39.0%) of respondents had a household size of 1-5 persons. The mean household size of the respondents was 5 persons. These results imply that the farmer in the area had a reasonably large household size. Reasons behind large family size could be attributed to the polygamous practices among the people and their dependency on family as a source of farm labour. It is expected that listening to agricultural programmes on the radio will be more popular among large farming households, especially if the programmes have the potential of raising productivity and household incomes. This finding aligns with the opinion of Tafida and Sabiu (2021) that crop farmers in Kano State, Nigeria, had high family responsibilities, which required them to utilise improved technologies aired on agricultural radio programmes.

**Farming Experience:** The majority (47.3%) of respondents had 1-10 years of farming experience. The mean years of farming experience in the area was 9 years. This implies that most farmers had extensive experience in crop production. The finding corroborates those of Adikwu (2022), who asserted that yam farmers in Benue State, Nigeria, who listened to Radio Benue agricultural programmes had considerable experience in yam farming.

**Major Crops Cultivated:** Table 1 shows the major crops grown by the respondents. The majority (37.7%) of the farmers grew rice, 35.8% grew maize, and 26.5% grew cassava. This could be

attributed to government policies on homegrown rice and the rising demand for rice by Nigerians, as it is the major staple food for most Nigerians.

**Farm Size:** The result further revealed that the majority (90.3%) of the respondents had farm sizes of 1-5 hectares, 7.2% had 6-10 hectares, and 2.5% had more than 10 hectares. The mean farm size of the respondents was 3.4 hectares. The result indicates that farmers in the area were predominantly engaged in small-scale production. This could greatly affect their adoption of improved technologies from the radio. This finding is consistent with those of Tafida and Sabiu (2021), who reported that farmers in Kano State, Nigeria, were cultivating small farms of less than 5 hectares.

**Extension Contact:** Table 1 shows that 60.3% of respondents reported having extension contact, while 39.7% reported otherwise. Among respondents who had contact, 76.6% of the respondents, which constituted the majority, had contact with extension agents 1-2 times in the last 6 months. The overall mean extension contact was 2 visits in the previous 6 months. This implies that the farmers had very low extension contact. This could be due to an inadequate number of extension agents and a lack of logistical support, among other factors. These reasons had made it necessary to find other means to reach farmers with the required agricultural information. The Food and Agriculture Organization (FAO, 2023) described radio agricultural programmes as the most effective means of delivering reliable information to farmers. This result agrees with the findings of Njoku and Ugboaja (2019), who reported that farmers in Imo State, Nigeria, had very low extension contacts. According to Anag (2022), enhanced extension services could promote better-informed decision-making, improved farming techniques, and, ultimately, greater poverty reduction among staple crop farmers.

**Access to Credit:** The majority of respondents (64.3%) reported not having access to credit facilities, while 35.7% reported having access. These observations imply that accessing loans in the study area was difficult. The result further showed that for respondents who had access to credit, 57.1. % had accessed a loan of above ₦400,000. Access to Credits could facilitate farmers' acquisition and use of radio to increase their knowledge and adoption of new farming practices.

**Membership of Cooperative Group:** Table 1 shows that the majority (63.9%) of the respondents were members of cooperative societies, whereas 36.1% were not. The findings imply that most farmers had access to and benefited from the advantages offered by such groups. Being a member

of cooperative societies gives farmers access to loans, farm inputs, and radios, and also helps them interact with one another on topics presented on the radio. Among cooperative society members, the majority (58.8%) had been members for 1 to 5 years. This indicates that the farmers have been members of the cooperative society long enough to enjoy the benefits. Njoku and Ugboaji (2019) reported that the majority (88.6%) of the farmers in Imo State, Nigeria, belonged to different cooperative organisations.

**Access to Radio Set:** Table 1 further revealed the respondents' ownership or access to a radio set. The results showed that all respondents had a radio or access to one. This indicates that farmers in the study area listen to the radio and have access to agricultural information. Farmers' radio set ownership is a crucial indicator of the information medium available and of farmers' exposure to radio agricultural programmes. The Food and Agriculture Organization (FAO, 2023) reported that the majority of farmers who listened to the Radio Benue agricultural programme owned their own radio sets.

**Table 1: Socio-Economic Characteristics of Respondents**

Socio-economic variable	Frequency	Percentage (%)	Mean
<b>Age (years)</b>			
18- 28	52	18.80	40.3 years
29-38	81	29.20	
Above 38	144	52.00	
<b>Sex</b>			
Male	222	80.10	
Female	55	19.90	
<b>Level of education</b>			
No-formal education	54	19.50	
Primary education	41	14.80	
Secondary education	94	33.90	
Tertiary education	88	31.80	
<b>Household size (no. of persons)</b>			
1-5	108	39.00	5 persons
6-10	104	37.50	
Above 10	65	23.50	
<b>Farming experience (years)</b>			
1-10	131	47.20	9,3 years
11-20	73	26.40	
Above 20	73	26.40	
<b>Major crops cultivated*</b>			
Rice	231	83.40	
Maize	219	79.10	
Cassava	162	58.50	



Farm size (hectares)			
1-5	250	90.30	3.4 hectares
6-10	20	7.20	
Above 10	7	2.50	
Access to extension contact			
Yes	167	60.30	
No	110	39.70	
Number of extension contact (no. of visits received)	128	76.60	2 visits
1-2	14	8.400	
3-4	25	15.00	
Above 4			
Access to credit			
Yes	178	64.300	
No	99	35.700	
Amount of loan accessed (Naira)			
1,000-200,000	19	18.10	
200,001-400,000	20	24.80	
Above 400,000	60	57.10	
Membership of cooperative society			
Yes	177	63.90	
No	100	36.10	
Number of years of cooperative society membership (years)	104	58.80	
1-5	73	41.20	3 years
6-10			
Access to radio set			
Yes	277	100.00	

Source: Field survey. 2024

### **Awareness of Agricultural Programmes of Solid FM Radio**

The results in Table 2 show respondents' awareness of 'Solid FM' Radio's agricultural programmes. All respondents indicated awareness of the agricultural programmes of Solid FM Radio, Mu koma Gona (let's go back to farming), and Noman Shinkafa Jari (Rice farming: a profitable venture). Respondents' awareness of the various agricultural programmes aired on the radio station reflects their popularity. Knowledge of a particular programme and its contents will develop listeners' interest, which could lead to its adoption. This corroborates the findings of Maurice *et al.* (2019) that farmers in Adamawa State were aware of various agricultural programmes aired on the radio stations.

**Table 2: Awareness of Agricultural Programmes of Solid FM Radio by Respondents**

Variable	Frequency	Percentage (%)
<b>Respondents' awareness of agricultural programmes on Solid FM Radio.</b>		
<i>Mukoma Gona</i>		
Yes	277	100.00
No	0	0.00
<i>Noman Shinkafa Jari</i>		
Yes	277	100.00
No	0	0.00

Source: field survey, 2024

### **Patronage of Agricultural Programmes of Solid FM Radio by Respondents**

The results of a patronage survey of Solid FM Radio's agricultural programmes revealed that all respondents listened to them, indicating that farmers in the study area had access to agricultural information. The result also showed that the respondents tuned in to both *Mukoma Gona* and *Noman Shinkafa Jari*, the agricultural programmes aired on Solid FM Radio. Specifically, 83.4% listened to *Mu koma gona* (Let's go back to farming) while 84.8% listened to *Noman shinka jari* (Rice farming: a profitable venture). This reflects the high popularity of these programmes among the respondents.

The majority (41.5%) of respondents had been listening to agricultural programmes for 1-3 years, 39% for 4-6 years, and 19.5% for more than 6 years. Implying that most of the respondents had listened to the farming programmes long enough to acquire some vital information necessary to improve production.

The results in Table 3 also revealed that the majority of the respondents — 71.1% and 71.8%, respectively — listened to *Mu koma gona* and *Noman Shinkafa Jari* agricultural programmes only occasionally, while 28.9% and 28.2%, respectively, reported regular listening to each of the agricultural programmes. This indicates very low patronage of the farming programmes. This could be a result of the wrong timing of the programmes, lack of time to listen, short time allotted to the programmes by the radio station, and the high cost of buying batteries, among others. Mtega (2018) noted in his study that the majority of farmers either did not listen to radio agricultural programmes or only tuned in occasionally. The study attributed it to farmers' lack of awareness, the wrong timing of the programmes, and the programme's short duration. Contrary to these findings, Abdulaziz and Ibrahim (2024) and Orifah *et al.* (2025) both found that farmers in Kaduna and Jigawa States, respectively, regularly listened to agricultural radio programmes and were consistently exposed to farming innovations.

### Satisfaction with the Agricultural Programmes

The results on satisfaction with the agricultural programmes aired on Solid FM Radio revealed that the majority (88.4%) of the respondents were very satisfied with the information they received from the programmes, while 4.3%.% were not. This indicates that the agricultural programmes were supplying farmers with the information needed to increase production. This finding agrees with Antwi *et al.* (2022), who reported that the majority of farmers in Ghana were highly satisfied with the information they get from radio agricultural programme.

**Table 3: Patronage of Agricultural Programmes on Solid FM Radio by Respondents**

Variable	Frequency	Percentage(%)
Farmers who listened to Solid FM Radio agricultural programmes		
<b>Yes</b>	277	100.00
<b>No</b>	0	0.00
Agricultural programmes respondents listen to on Solid FM Radio		
<b><i>Mukoma gona</i></b>	231	83.40
<b><i>Noman shinkafa jari</i></b>	235	84.80
Duration of listening to radio agricultural programmes (years)		
<b>1-3</b>	115	41.50
<b>4-6</b>	108	39.00
<b>Above 6 years</b>	54	19.50
Frequency of listening to <i>Mukoma gona</i> programme		
<b>Regularly (every week)</b>		
<b>Occasionally ( once in several weeks)</b>	47	20.30
	184	79.70
Frequency of listening to <i>Noman shinkafa jari</i> programme		
<b>Regularly (every week)</b>	61	26.00
<b>Occasionally (once in several weeks)</b>	174	74.00

Source: Field survey, 2024

**Table 4: Distribution of Respondents based on Satisfaction with agricultural programmes of Solid FM Radio**

Satisfaction	Frequency	Percentage
Very satisfied	245	88.40
Satisfied	20	7.30
Not satisfied	12	4.30

Source: Field Survey, 2024

### Test of Hypothesis

The chi-square test result ( $\chi^2 = 8.07$ ,  $df = 4$ ,  $P = 0.089$ ), as shown in Table 5, revealed no statistically significant association between the duration of listening to agricultural programmes and respondents' satisfaction levels. The null hypothesis was, therefore, not rejected. This implies that the length of time farmers have been listening to the programme does not necessarily determine how satisfied they are. This finding did not align with those of Duncan *et al.* (2024), who asserted that farmers with more radio exposure were more likely to listen to agricultural programmes on the radio and become satisfied with it.

**Table 4: Association between Duration of Listening to Agricultural Programme and Satisfaction with the Programme.**

Variables	$\chi^2$ -values	df	P -Value
Duration of listening to Agricultural Programs and satisfaction level.	8.07	4	0.890 <sup>NS</sup>

NS= Not Significant at 5%. df= Degree of Freedom,  $\chi^2$ = Chi- Square

## CONCLUSION AND RECOMMENDATIONS

The study revealed that the majority of the farmers were male, married, educated, in their active years, with a mean household size of 5 people, and experienced. The findings of this study also revealed that the majority of the farmers were aware of agricultural programmes aired on Solid FM Radio. However, despite this high level of awareness, the study found that listenership of the two popular agricultural programmes was irregular. This indicates low patronage of the popular agricultural programmes among the respondents. Interestingly, those who listened to the programmes expressed high levels of satisfaction, indicating that the content was relevant and met their agricultural information needs.

The observed gap between awareness and actual patronage may be attributed to factors such as the timing of the broadcast, competing daily activities, and socio-economic factors. Thus, the high satisfaction level suggests a strong potential for the programme to contribute positively if patronage is improved.

Therefore, the study recommended that, although awareness was high, a strategic publicity effort involving local extension officers, community leaders, and farmers-based organisations could help convert awareness into regular patronage. The high level of satisfaction among the farmers indicates they were getting the correct information from the agricultural programmes; therefore, the programmes should be sustained.

The radio station should take a deeper look into the reasons for low patronage. While awareness and satisfaction were established, the low patronage needs to be understood. This could involve research, looking at the time of presentation, duration/slots given to the programmes, format of presentation, language used, and quality of presentation, among others.

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