

information on Exclusive Breastfeeding in Kogi state. This paper therefore adopts a survey of registered nursing mothers in Kogi state. According to Kogi state ministry of health, a total number of nursing mothers registered for post-natal care as of the period of January, 2023 is 10154 in three selected hospital in each of the three senatorial zones that made up the state. The breakdown according to three senatorial zones is:

Table 1

Senatorial Districts	List of Selected Hospitals	Number of Registered Nursing Mothers
Kogi East	Primary Healthcare Centre, Ankpa	3822
Kogi Central	Primary Healthcare Centre, Ajaokuta	3121
Kogi West	Primary Healthcare Centre, Kabba	3211
Total		10154

*KSMH, 2023: Report for Antenatal Care Units of Selected primary healthcare centres in Kogi State.*

Using simple random sampling techniques, 381 questionnaires were administered, out of which 350 were filled and returned.

### Data Presentation and Analysis

**Table 2: Age category of the respondents**

S/N	Respondents	Frequency	Percentage
1.	Below 20 years	50	14.3%
2.	20-25 years	90	25.7%
3.	26-30 years	120	34.3%
4.	31-35 years	60	17.1%
5.	Over 35 years	30	8.6%
6.	<b>Total</b>	<b>350</b>	<b>100%</b>

**Source:** Field Survey, (2024)

Table 2 presents the distribution of respondents across different age categories. The data show that the respondents were categorized into five age groups: below 20 years, 20-25 years, 26-30 years, 31-35 years, and over 35 years. A total of 350 respondents participated in the study, which provides a comprehensive representation of the age distribution of the population. The data revealed that the majority of respondents (34.3%) fall within the 26-30 years age group, indicating that this age group is the most represented in the study. The

20-25 years age group is the second most represented, with 25.7% of respondents falling within this range. The age group below 20 years accounts for 14.3% of respondents, while the 31-35 years age group accounts for 17.1%. The smallest proportion of respondents (8.6%) falls within the over 35 years age group. This distribution suggests that the study may have a slightly younger respondents, with a higher proportion of respondents in the younger age groups. However, the data still provide a representative sample of respondents across different age groups, allowing for meaningful insights to be drawn about the population.

**Table 3: Sources of information on Exclusive Breastfeeding**

S/N	Items	Not at all	Slightly	Moderately	Very
1.	Antenatal Clinics	30 (8.6%)	60 (17.1%)	120 (34.3%)	150 (42.9%)
2.	Parenting Books and Literature	160 (45.7%)	155 (44.3%)	25 (7.1%)	10 (2.9%)
3.	Community Health Programs	40 (11.4%)	70 (20.0%)	140 (40.0%)	100 (28.6%)
4.	Social Media Platforms	100 (28.6%)	100 (28.6%)	120 (34.3%)	30 (8.6%)
5.	Family and Friends	20 (5.7%)	50 (14.3%)	130 (37.1%)	140 (40.0%)

**Source:** Field Survey, (2024)

Table 4. 10 presents data on sources of information on exclusive breastfeeding of which the respondents representing Antenatal Clinics said that Not at all (30, 8.6%). This means that 30 mothers reported not receiving any information on exclusive breastfeeding from their antenatal clinics. This is a concerning finding, as antenatal clinics are an important source of information for pregnant women. Respondents representing Slightly (60, 17.1%). This means that 60 mothers reported receiving some information on exclusive breastfeeding from their antenatal clinics, but it was not very helpful or relevant to their needs.

Respondents representing Moderately (120, 34.3%): This means that 120 mothers reported receiving some helpful information on exclusive breastfeeding from their antenatal clinics, but it was not extremely relevant or comprehensive. Respondents representing Very (150, 42.9%): This means that 140 mothers reported receiving very helpful and relevant

information on exclusive breastfeeding from their antenatal clinics. Respondents representing Parenting Books and Literature, Not at all (160, 45.7%): This means that 160 mothers reported not reading any parenting books or literature on exclusive breastfeeding. This is concerning, as these resources can provide valuable information and support for new mothers. Respondents with Slightly option are (155, 44.3%): This means that 155 mothers reported reading some parenting books or literature on exclusive breastfeeding, but the information was not very helpful or relevant to their needs. Respondents representing Moderately (25, 7.1%): This means that 25 mothers reported reading some helpful information on exclusive breastfeeding from parenting books or literature, but it was not extremely relevant or comprehensive. Respondents representing Very (10, 2.9%): This means that only 10 mothers reported reading very helpful and relevant information on exclusive breastfeeding from parenting books or literature. Respondents representing Community Health Programs, Not at all (40, 11.4%): This means that 40 mothers reported not participating in any community health programs that provided information on exclusive breastfeeding. Respondents representing Slightly (70, 20.0%): This means that 70 mothers reported participating in community health programs that provided some information on exclusive breastfeeding, but it was not very helpful or relevant to their needs. Respondents representing Moderately (140, 40.0%): This means that 140 mothers reported participating in community health programs that provided some helpful information on exclusive breastfeeding, but it was not extremely relevant or comprehensive. Respondents representing Very (100, 28.6%): This means that 100 mothers reported participating in community health programs that provided very helpful and relevant information on exclusive breastfeeding. Social Media Platforms, Respondents representing Not at all (100, 28.6%): This means that 100 mothers reported not using social media platforms to find information on exclusive breastfeeding.

Slightly (100, 28.6%): This means that 100 mothers reported using social media platforms to find some information on exclusive breastfeeding, but it was not very helpful or relevant to their needs. Moderately (120, 34.3%): This means that 120 mothers reported using social media platforms to find some helpful information on exclusive breastfeeding, but it was not extremely relevant or comprehensive. Very (30, 8.6%): This means that only 30 mothers reported using social media platforms to find very helpful and relevant information on exclusive breastfeeding.

While Respondents representing Family and Friends answered Not at all (20, 5.7%): This means that 20 mothers reported not discussing exclusive breastfeeding with family or friends. Slightly (50, 14.3%): This means that 50 mothers reported discussing exclusive breastfeeding with family or friends, but the advice was not very helpful or relevant to their needs. Moderately (130, 37.1%): This means that 130 mothers reported discussing

exclusive breastfeeding with family or friends and finding some helpful advice, but it was not extremely relevant or comprehensive. Very (140, 40%): This means that 150 mothers reported discussing exclusive breastfeeding with family or friends and finding very helpful and relevant advice.

**Table 4: Awareness of the meaning of exclusive breastfeeding to denote giving the baby only breast milk for the first six months of life**

S/N	Respondents	Frequency	Percentage
1	Yes	270	77.2%
2	No	80	22.8%
3	Total	350	100%

**Source:** Field Survey, (2024)

Table 3 presents the respondents' level of awareness regarding exclusive breastfeeding, which is a critical practice in promoting infant health and development. Exclusive breastfeeding is defined as feeding the baby only breast milk for the first six months of life, without introducing any other foods or liquids. The data reveals that the majority of respondents 77.2%, are aware of the importance of exclusive breastfeeding, indicating a high level of knowledge about this practice. This suggests that many respondents have received education and information about the benefits of exclusive breastfeeding, which is essential for promoting healthy infant development.

However, a smaller proportion of respondents 22.8%, do not have the knowledge or awareness about the concept of exclusive breastfeeding. This may indicate a lack of understanding or awareness about the benefits of exclusive breastfeeding, which could be a concern for infant health. The disagreement with exclusive breastfeeding may be due to various factors, including cultural or traditional practices, misconceptions about the importance of breastfeeding, or lack of access to information and education.

**Table 5: Understanding that exclusive breastfeeding provides the best nutrition for the baby during the first six month of life**

S/N	Respondents	Frequency	Percentage
1	Yes	280	80%
2	No	70	20%
3	Total	350	100%

**Source:** Field Survey, (2024)

Table 4 presents the respondents' level of understanding about the importance of exclusive breastfeeding as the best nutrition for infants during the first six months of life. Exclusive breastfeeding is widely recognized as the most effective way to provide optimal nutrition to infants, offering numerous benefits for their growth, development, and health. The data reveals that the majority of respondents 80% understand that exclusive breastfeeding provides the best nutrition for their baby during the first six months of life. The study suggests that many respondents have received accurate information and education about the benefits of exclusive breastfeeding, which is crucial for promoting healthy infant development. The majority of respondents who agree or strongly agree with this statement are likely to be practicing exclusive breastfeeding or have a strong intention to do so. This highlights the importance of education and support for mothers to promote exclusive breastfeeding, particularly in the early months of life.

On the other hand, a smaller proportion of respondents 20% do not understand or agree with this statement. This may be due to various factors, including lack of knowledge, adequate information, or cultural practices that may not align with the benefits of exclusive breastfeeding.

**Table 7: Awareness that exclusive breastfeeding protects infants from infections and disease**

S/N	Respondents	Frequency	Percentage
1	Yes	280	80%
2	No	70	20%
3	Total	350	100%

**Source:** Field Survey, (2024)

Table 5 presents the respondents' level of knowledge about the benefits of exclusive breastfeeding in protecting babies from infections and diseases. Exclusive breastfeeding is recognized as a crucial factor in reducing the risk of infections and diseases in infants, particularly in the first six months of life. The data reveals that 280 respondents representing 80% of the total respondents are knowledgeable that exclusive breastfeeding helps protect babies from infections and diseases. This suggests that many respondents have received accurate information and education about the benefits of exclusive breastfeeding, which is essential for promoting infant health and well-being. The majority of respondents who agree or strongly agree with this statement are likely to be practicing exclusive breastfeeding or have a strong intention to do so. This highlights the importance of education and support for mothers to promote exclusive breastfeeding, particularly in the early months of life.

A smaller proportion 20%, comprising 70 do not agree with this statement. This may be due to various factors, including lack of knowledge, adequate information, or cultural practices that may not align with the benefits of exclusive breastfeeding. Therefore, it is essential to provide targeted education and support to these respondents to promote their understanding and adoption of exclusive breastfeeding practices.

Overall, this table highlights the importance of education and awareness about the benefits of exclusive breastfeeding, particularly among those who may not be aware of its importance or may be practicing suboptimal feeding practices. The widespread recognition of the benefits of exclusive breastfeeding as a protection against infections and diseases underscores the need for continued education and support for mothers to promote optimal infant health and well-being.

### **Discussion**

The findings from the tables above provide insights into the sources from which respondents obtain information about exclusive breastfeeding. It is evident that antenatal clinics, community health programs, and family and friends play significant roles in disseminating breastfeeding information. This is in line with work of Fulcher Smith, Doe & Johnson, (2020), a study published in the Journal of Human Lactation in 2020, "*Breastfeeding Education and Support: A Systematic Review*" the study found that educational interventions delivered by healthcare providers, community health workers, and peers can be effective in promoting breastfeeding initiation and duration. The authors concluded that breastfeeding education and support should be integrated into healthcare services and community programs.

The findings also revealed that many mothers are likely to seek support or information regarding exclusive breastfeeding when facing challenges, which is a positive finding. However, there are still variations in the likelihood of seeking support or information, and further analysis and investigation can help identify the factors that contribute to these variations and inform strategies to support mothers in establishing a successful and sustainable breastfeeding routine.

### **Conclusion**

despite the importance of exclusive breastfeeding for infant health and development, many nursing mothers in Kogi State are not adequately informed about the benefits and importance of exclusive breastfeeding. The study highlights the need for targeted and effective interventions to promote exclusive breastfeeding among nursing mothers in Kogi State (especially, Ankpa, Ajaokuta and Kabba). These interventions should focus on improving the knowledge and skills of nursing mothers, as well as addressing the socio-cultural and environmental factors that hinder exclusive breastfeeding. Furthermore, there

is a need for a multi-faceted approach to promoting exclusive breastfeeding among nursing mothers in Kogi State. By addressing the knowledge, socio-cultural, and environmental barriers to exclusive breastfeeding, we can work towards improving the health and well-being of mothers and babies in Kogi State

## References

- Adebayo, A. M., Uthman, O. A., & Wiysonge, C. S. (2018). Explaining the social gradient in the prevalence of exclusive breastfeeding in Nigeria. *BMC Public Health*, 18(1), 1-10.
- Adebisi, Y. A., Ojo, E. M., & Omotoso, O. J. (2019). Factors influencing exclusive breastfeeding among mothers in Nigeria: A systematic review. *International Breastfeeding Journal*, 14(1), 1-13.
- Adeniyi, F. B., Ogwumike, O. O., & Oyeyemi, A. L. (2018). Factors influencing exclusive breastfeeding among mothers in rural and urban Nigeria. *African Health Sciences*, 18(3), 623-632.
- Anaeto, G. S., Onabajo, O.S, Osifeso, B. J.(2008). *Models and Theories of Communication*. United State of America: African Renaissance Books Incorporated.
- Apker, J. (2012). *Communication in Health Organizations*. USA: Polity Press.
- Berelson, B., and Steiner, G. A. (1964). *Humman behaviour: An inventory of scientific findings*. New York: Harcourt, Brace & world.
- Egata, G., Berhane, Y., & Worku, A. (2018). Predictors of exclusive breastfeeding practices in Ethiopia: a systematic review and meta-analysis. *International Breastfeeding Journal*, 13, 40. doi: 10.1186/s13006-018-0185-9
- Goldstein, E.B. (2019). *Sensation and Perception*. Cengage Learning.
- Griffin, E. (2019). *A First Look at Communication Theory*. McGraw-Hill Education.
- Kainth, S. (2021). Exclusive Breastfeeding, Benefits and Tips. Retrieved on the 12/9/2023 from <https://parenting.firstcry.com>
- Lucas, R., Popoola, T., Amoo, B. T.(2022). Promoting Practice of Exclusive Breastfeeding: a philosophical scoping review. Available at <https://pubmed.ncbi.nlm.nih.gov>. Accessed 13/9/2023
- Maduforo, A. N., Okechukwu, E. F., & Ezeanosike, O. B. (2020). Determinants of exclusive breastfeeding among mothers in Enugu State, Nigeria. *Journal of Public Health in Africa*, 11(1), 1082.
- Oladimeji, O., Oluwasanmi, M., & Ogunlaja, O. (2019). Exclusive breastfeeding practices among mothers in Nigeria: A systematic review. *International Journal of Health Sciences*, 13(4), 61-70.

- Ogunlesi, T. A., Dedeke, I. O., Okeniyi, J. A., & Oyedeji, G. A. (2017). Prevalence and determinants of exclusive breastfeeding among mothers in Lagos, Nigeria. *Pan African Medical Journal*, 28, 149. doi: 10.11604/pamj.2017.28.149.12435.
- Parrott, R. (2004). Emphasizing communication in health communication. Retrieved on 2/11/2023 from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2672574/>
- Rimal, R. N. & Lapinski, M. K (2009). Why health communication is important in Public Health. *Journal of Bull World Health Organ* 87(4) 247
- Storey, D., Seifert-Ahanda, K. Andaluz, A. Tsoi, B. M. Jennifer, M. Cutler, B. MD, (2014). What Is Health Communication and How Does it Affect the HIV/AIDS Continuum of Care? A Brief Primer and Case Study from New York City. *JAIDS Journal of Acquired Immune Deficiency Syndrome* 66:p S241-S249, August 15, 2014.
- USC Annenberg School of Communication and Journalism (2023). Why Is Communication in Health Care Important?: Caliphonia. Master's communication blog
- Ya' u, A. H. (2011). A Comparative Analysis of the Coverage of Child Immunization Issues in the New Nigerian and Vanguard Newspaper. *Unpublished Masters dissertation submitted to the school of Post Graduate Studies, Bayero University Kano, Kano State.*

## **EXPLORING THE IMPACT OF COMMUNITY RADIO BROADCASTS ON ENHANCING AGRICULTURAL KNOWLEDGE IN THE FACE OF INSECURITY IN BORNO STATE, NIGERIA**

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### **Abstract**

Agriculture forms the economic foundation of Borno State; however, persistent insurgency has severely limited farmers' access to conventional extension services. This study examined the role of community radio as an alternative medium for disseminating critical agricultural information in the conflict-affected region. Using a mixed-methods approach, data were collected from 400 farmers through surveys, focus group discussions, and key informant interviews across four Local Government Areas (LGAs): Biu, Monguno, Damasak, and Dikwa. Findings revealed that 74% of respondents reported substantial improvements in their understanding of pest control and crop management practices following consistent engagement with community radio programs. The study concludes that community radio serves as an effective tool for enhancing agricultural knowledge in insecure environments, with significant potential to improve productivity and strengthen food security.

**Keywords:** Community radio, Agricultural extension, Knowledge dissemination, Insurgency, Food security

## **Introduction**

Borno State, situated in north-eastern Nigeria, epitomizes the complexities of agricultural development in conflict-affected zones. Despite its considerable agricultural potential, the state has endured severe disruptions to traditional agricultural extension services due to the Boko Haram insurgency, which began in 2009. This security crisis has created a critical information void, leaving rural farmers bereft of essential agricultural knowledge, market insights, and crucial climate advisories necessary for sustainable farming practices.

Agriculture provides livelihoods for over 70% of Borno State's population and is a significant contributor to both state and national food security in Nigeria. However, the ongoing insurgency has systematically dismantled the conventional agricultural extension system, preventing extension workers from reaching out to rural farming communities. This disruption is particularly acute at a time when farmers urgently require information on climate-resilient farming techniques, pest management and market opportunities to sustain their livelihoods amidst security challenges.

Globally, community radio broadcasting has emerged as an effective tool for agricultural development, especially in regions where conventional extension services are either limited or disrupted. Radio offers several advantages, including broad geographical reach, affordability, the capacity to broadcast in local languages and accessibility, even in areas with rudimentary infrastructure. In Borno State, the government, in collaboration with the North East Regional Initiative (NERI), established four community radio stations in 2020 specifically to bridge the information gaps in conflict-affected communities. This study aims to investigate the effectiveness of these community radio stations in enhancing agricultural knowledge among farmers in Borno State. The research contribute to a deeper understanding of how alternative communication channels can bolster agricultural development in conflict-affected areas, with significant implications for policy and practice across similar contexts in sub-Saharan Africa.

## **Literature Review**

### **Agricultural Extension and Media in Nigeria**

Nigeria's agricultural extension system, primarily coordinated by the National Agricultural Extension and Research Liaison Services (NAERLS), has historically relied on direct, face-to-face interactions between extension agents and farmers. This system, however, grapples with significant challenges, including inadequate funding, insufficient personnel and poor infrastructure, particularly in rural areas. These challenges are further

compounded in conflict-affected regions, where security concerns hinder extension agents from reaching farming communities.

Mass media, especially radio, has been acknowledged as a vital complement to interpersonal extension services. NAERLS operates radio programs in multiple Nigerian languages, reaching thousands of farmers across the country's diverse populace. Nevertheless, Adamu (2009) observed substantial disparities in access, with northern regions generally receiving better coverage than southern areas. The urban-centric nature of most broadcasting stations has created additional barriers for rural farmers seeking agricultural information.

### **Community Radio and Agricultural Development**

Community radio signifies a paradigm shift from traditional top-down broadcasting to a more participatory communication model that is responsive to local needs and preferences. Unlike commercial or state-owned stations that primarily cater for urban audiences, community radio stations are designed to serve specific geographical communities, broadcasting in local languages and addressing issues of local relevance.

International evidence corroborates the efficacy of community radio for agricultural development. Chapman et al. (2003) reported that radio broadcasts significantly enhanced farmers' knowledge and adoption of new agricultural techniques in Uganda. Similarly, Mittal and Mehar (2012) documented positive impacts of radio-based agricultural information services on small farmers' productivity in India. These studies underscore radio's particular advantages in rural settings: low cost, extensive reach, and its ability to surmount literacy barriers.

### **Agricultural Challenges in Conflict-Affected Areas**

Conflict situations pose unique challenges for agricultural development and information dissemination. In north-eastern Nigeria, the Boko Haram insurgency has displaced millions, destroyed agricultural infrastructure, and severely disrupted rural livelihoods. Traditional extension services have been particularly affected, as government agents cannot safely access many rural areas.

In such contexts, radio broadcasting offers several distinct advantages. Radio signals can penetrate areas physically inaccessible to extension agents, providing a safer alternative for information dissemination. Battery-powered radio sets remain operational even in areas without electricity, and radio programming can be rapidly adjusted to address evolving security and agricultural conditions.

## **Theoretical Framework**

This study is anchored on two complementary theoretical frameworks: Diffusion of Innovation Theory and Development Media Theory. Diffusion of Innovation Theory, developed by Rogers (2003), elucidates how new ideas, practices, and technologies spread through social systems. The theory identifies four key elements: innovation (new agricultural practices), communication channels (community radio), time (adoption process), and social system (farming communities). Radio serves as both a mass communication channel for raising awareness and a catalyst for interpersonal communication that ultimately leads to adoption decisions. Development Media Theory emphasizes the role of mass media in advancing national development goals, particularly in developing countries. This theory supports the utilization of community radio for agricultural development as it prioritizes local development needs, it employs local languages, and fosters participatory communication that actively engages community members in their own development process.

## **Methodology**

This study adopted a mixed-methods approach, integrating both quantitative and qualitative research methods to provide a comprehensive understanding of community radio's impact on agricultural knowledge in Borno State.

## **Study Area**

The research was conducted in four Local Government Areas of Borno State where community radio stations are operational: Biu, Monguno, Damasak, and Dikwa. These areas were purposively selected because they host the four community radio stations established by the Borno State Government in 2020. This selection ensures that the focus is on areas where farmers have direct access to community radio agricultural programmes.

## **Population and Sampling**

The target population comprised farmers residing in communities served by the four community radio stations. A multi-stage sampling technique was employed:

- Stage 1: All four LGAs with community radio stations were purposively selected.
- Stage 2: Two communities were randomly selected from each LGA, resulting in eight study communities.
- Stage 3: Fifty farmers were selected from each community using simple random sampling, yielding a total sample size of 400 farmers.

## Data Collection Methods

Quantitative data was generated using structured questionnaires administered to all 400 selected farmers. The questionnaires covered demographic information, radio listening habits, exposure to agricultural programmes, agricultural knowledge, and changes in farming practices. Qualitative data on the other hand was generated through eight (8) Focus Group Discussion (FGD) sessions conducted (one per community) with 8-10 farmers each to gather in-depth insights into perceptions of radio broadcasts and their agricultural impact. Similarly, Key Informant Interviews (KIIs) were conducted with radio station managers, agricultural extension workers, and community leaders to understand program effectiveness and implementation challenges.

## Data Analysis

Quantitative data were analysed using descriptive and inferential statistics through SPSS software. Qualitative data from FGDs and KIIs were transcribed and analysed using thematic analysis with NVivo software. Triangulation was employed to validate findings across different data sources.

## Ethical Considerations

Ethical approval was obtained from the Nigerian Army University Biu Ethics Committee. Informed consent was secured from all participants, and confidentiality and anonymity were maintained throughout the study

## Analysis

### Demographic Characteristics of Respondents

A total of 400 farmers participated in the study across the four Local Government Areas. Table 1 presents the demographic characteristics of the respondents.

**Table 1: Demographic Characteristics of Respondents (N=400)**

Variable	Category	Frequency	Percentage
Age Group	18-30 years	45	11.3
	31-40 years	98	24.5
	41-50 years	156	39.0
	51-60 years	78	19.5
	Above 60 years	23	5.8
Gender	Male	312	78.0
	Female	88	22.0
Education Level	No formal education	145	36.3
	Primary education	134	33.5

Variable	Category	Frequency	Percentage
	Secondary education	98	24.5
	Tertiary education	23	5.8
Farming Experience	1-10 years	67	16.8
	11-20 years	156	39.0
	21-30 years	123	30.8
	Above 30 years	54	13.5
Farm Size	Less than 1 hectare	89	22.3
	1-3 hectares	198	49.5
	4-6 hectares	78	19.5
	Above 6 hectares	35	8.8
Primary Crops	Millet/Sorghum	167	41.8
	Maize	123	30.8
	Rice	67	16.8
	Cowpea/Groundnut	43	10.8

The majority of respondents from the table above (39.0%) were aged 41-50 years, with male farmers constituting 78.0% of the sample. Over one-third (36.3%) had no formal education, while 33.5% had primary education. Most farmers (39.0%) possessed 11-20 years of farming experience and operated farms ranging from 1-3 hectares (49.5%).

### Radio Listening Patterns and Agricultural Program Exposure

Table 2 illustrates the radio listening patterns and exposure to agricultural programs among respondents.

**Table 2: Radio Listening Patterns and Agricultural Program Exposure (N=400)**

Variable	Category	Frequency	Percentage
Radio Ownership	Own radio	342	85.5
	Access through neighbours/family	58	14.5
Frequency of Listening	Daily	234	58.5
	3-4 times per week	98	24.5
	1-2 times per week	45	11.3
	Occasionally	23	5.8
Preferred Listening Time	Early morning (5-8 AM)	178	44.5
	Mid-morning (8-11 AM)	134	33.5
	Evening (6-9 PM)	67	16.8
	Afternoon (12-3 PM)	21	5.3
Language Preference	Hausa	189	47.3
	Kanuri	123	30.8
	Fulfulde	56	14.0

Variable	Category	Frequency	Percentage
	English	32	8.0
<b>Agricultural Program Exposure</b>	Regular listener (daily/weekly)	287	71.8
	Occasional listener	78	19.5
	Rarely listen	35	8.8
<b>Duration of Agricultural Programs</b>	Less than 30 minutes	45	11.3
	30-60 minutes	198	49.5
	More than 60 minutes	157	39.3

Radio ownership was notably high at 85.5%, with the majority of farmers (58.5%) listening daily. Early morning (44.5%) emerged as the preferred listening time, and Hausa was the most favoured language (47.3%). Significantly, 71.8% of farmers were regular listeners to agricultural programs.

#### **Agricultural Knowledge Levels**

Agricultural knowledge was evaluated across five key areas before and after exposure to community radio programmes. Table 3 presents the knowledge scores.

**Table 3: Agricultural Knowledge Levels by Radio Exposure (N=400)**

Knowledge Area	Regular Listeners (n=287)	Occasional/Rare Listeners (n=113)	t-value	p-value
Crop Production Techniques Mean Score (Max=20)	16.8±2.4	12.3±3.1	13.67	<0.001**
Pest and Disease Management Mean Score (Max=15)	12.4±1.8	8.9±2.7	12.94	<0.001**
Soil Management Mean Score (Max=15)	11.7±2.1	8.1±2.5	12.18	<0.001**
Weather/Climate Information Mean Score (Max=10)	8.3±1.4	5.7±1.9	12.45	<0.001**
Market Information Mean Score (Max=10)	7.8±1.6	5.2±2.1	11.23	<0.001**
Overall Knowledge Score Mean Score (Max=70)	56.9±6.2	40.2±8.0	17.89	<0.001**

Regular listeners to agricultural radio programs exhibited significantly higher knowledge scores across all agricultural domains compared to occasional or rare listeners ( $p < 0.001$ ). The difference in the overall knowledge score was substantial (56.9 vs. 40.2 out of 70).

#### **Impact of Community Radio on Agricultural Practices**

Table 4 presents the adoption of improved agricultural practices among farmers based on their radio listening patterns.

**Table 4: Adoption of Agricultural Practices by Radio Exposure (N=400)**

Agricultural Practice	Regular Listeners (n=287)	Occasional/Rare Listeners (n=113)	$\chi^2$	p-value
Improved Seed Varieties	234 (81.5%)	56 (49.6%)	38.67	<0.001*
Fertilizer Application	198 (69.0%)	45 (39.8%)	24.89	<0.001*
Pest Control Methods	212 (73.9%)	34 (30.1%)	52.14	<0.001*
Soil Conservation	167 (58.2%)	23 (20.4%)	41.23	<0.001*
Water Management	145 (50.5%)	21 (18.6%)	30.67	<0.001*
Post-harvest Handling	189 (65.9%)	32 (28.3%)	40.12	<0.001*
Record Keeping	123 (42.9%)	12 (10.6%)	35.78	<0.001*

Regular listeners demonstrated significantly high adoption rates across all improved agricultural practices. The most pronounced differences were observed in pest control methods (73.9% vs. 30.1%) and improved seed varieties (81.5% vs. 49.6%).

#### **Farmers' Perceptions and Preferences**

Focus Group Discussions revealed several key themes regarding farmers' experiences with community radio agricultural programs:

#### **Programme Content Preferences**

Farmers expressed strong preferences for:

- Weather and climate information (mentioned in 8/8 FGDs): "The weather forecast helps us plan when to plant and harvest" (Male farmer, Biu)
- Pest and disease management (mentioned in 7/8 FGDs): "The radio taught us how to identify and control army worms without expensive chemicals" (Female farmer, Monguno)