

## **Radio Broadcasting and the Adoption of Agricultural Innovations Among Farmers in Niger State, Nigeria**

Ucheanya Florence, Tsegysu Santas PhD & Professor Mohammad Sani Rabi

Department of Mass Communication, Faculty of Communication and Media Studies,  
Nasarawa State University, Keffi.

Email: Ucheanyaflourence@gmail.com, [tsegysu@nsuk.edu.ng](mailto:tsegysu@nsuk.edu.ng) & rabiums123@gmail.com

### **Abstract**

This study investigates the theoretical connections between radio broadcasting and the adoption of agricultural innovations by farmers in Niger State, Nigeria. It proposes a framework illustrating how radio broadcasting can impact farmers' adoption of the innovations through pathways such as awareness, knowledge, attitude, and behavior change. The study is conceptual, relying on a review of existing literature and is grounded in the diffusion of innovation theory. The study identifies local languages, direct communication, farmer-focused programming, expert interviews, visual aids, public service announcements, partnerships with agricultural agencies, and interactive programming as a few of the tactics radio broadcasters use to promote agricultural innovations to farmers. It suggests creating a specialized agricultural radio station to deliver pertinent and timely information and creating content that will specifically cater to the requirements and worries of farmers in Niger State.

**Keywords:** Radio Broadcasting, Agricultural Communication, Agricultural innovations, Agricultural Campaign, Communication for Development.

### **Introduction**

Communication, an integral and pervasive aspect of our lives, is vital for human interaction. It stands as one of the oldest and most fundamental human activities. This two-way process involves the exchange of information, where both the sender and receiver actively participate continually switching roles (Asemah, 2022). It has been recognized that effective communication is crucial to the success of agricultural production. For farmers, agricultural scientists, and extension agents, mutual understanding can be facilitated by effective communication. Evans (2021) asserts that competent knowledge gives one a competitive advantage, increases efficiency, and facilitates better decision-making. An agricultural enterprise's administration and functioning depend heavily on information. In all of human pursuits, communication is vital. It encourages societies' expansion and development. Numerous researchers who studied the function of communication in development have acknowledged that it is essential to human growth initiatives. Unwavering in his assertion that communication unquestionably plays a critical role in development and that there is a significant association between the two, Asemah (2011) cites numerous research to support his position (Asemah, Nkwan-Uwaoma & Santas, 2017; Asemah & Santas, 2013). The World Bank (2012) has provided a detailed exposition on the importance of the media in the attainment of development. In fact, the foundation of egalitarian growth is the media. Corruption can be revealed via the media. By shining a focus on policies, they can maintain oversight on actions taken by the government. They can provide a forum for people to express their differing views on reforms and governance and aid in fostering public agreement to effect change. Such media can

improve the efficiency of marketplaces. They can act as mobility multipliers by facilitating trade and the cross-border transmission of ideas and careers. The media play a critical role in human development by disseminating health and educational information to isolated communities in nations ranging from Nicaragua to Uganda (World Bank, 2012). In Nigeria, radio has been deployed by government to execute several policies and initiatives leading to empowering the local farmers (Santas & Ogoshi, 2015). Policies such as operation feed the nation and poverty alleviation programmes received wide media publicity and acceptance.

Various communication channels are employed to deliver agricultural information to farmers. Messages disseminated through the media can significantly enhance audience awareness and influence their behavior. Traditional folk media encompass folk dance, folktales, idioms, storytelling, folk music, and events such as yam festivals, masquerade parties, puppet shows, and street plays. Additionally, social messages, songs, drumming, folk lyrics, bioscope, riddles, farm magazines, leaflets, newsletters, newspapers, pamphlets, and radio are also used. Among these, radio stands out as the most effective medium due to its speed, cost-effectiveness, and ability to reach a broad audience regardless of geographical location, socioeconomic status, or distance (Alabi & Oyedeji, 2016). Radio, a potent instrument for rapid information dissemination, has shown to be the most successful medium for advancing development and agriculture in Niger State. The ability to communicate radio messages in the audience's native tongue means that illiteracy is not a barrier.

These advantages likely explain why numerous organizations prioritize radio programs as a means to connect with farmers (Adebimpe, Abolore & Sanni, 2017). Compared to television or other media, radio is a more accessible medium for farmers in Niger State. It has also been established that radio has been used as a tool for providing agricultural education in most rural communities (Santas, 2013). A higher percentage of farmers in the state have access to radio and lot of them listen to radio programmes that discusses agricultural topics like smallholder farmers' use of irrigation during dry season and the poor adoption rate of dry season irrigated farming among other programmes. Despite the influence of radio in educating farmers, further assistance and intervention are required to consolidate on the efforts achieved so far. When it comes to getting farmers interested in agricultural programs, radio broadcast time and presentation are critical components. Farmers enjoy listening to radio shows that are interesting and engaging while providing useful advice (Zamisa & Taruvinga, 2022).

Nonetheless, farmers utilize technology because they want to increase general well-being and maximize profits. Poor reception quality, messages that are not tailored to the needs of rural populations, the infrequent airing of pertinent information at the appropriate time, and the use of technical language that is difficult for farmers to understand are just a few of the issues with agricultural information and communication that Adeyemo, Oluyide, and Bello (2019) identified as impediments to actualizing the potentials of radio in agricultural communication. Hence, this study examined the role of radio in agricultural communication.

### **Statement of the Problem**

The adoption of agricultural innovations among farmers in Niger State, Nigeria, remains a significant challenge, hindering the country's agricultural development and food security. Despite the potential of radio broadcasting as an effective tool for disseminating agricultural information,

its impact on the adoption of agricultural innovations especially among farmers in Niger State is yet to be fully explored. The limited access to extension services, low literacy levels, and inadequate exposure to modern agricultural practices among farmers in the region further exacerbate the issue.

Furthermore, the existing literature reveals a gap in understanding the specific factors influencing the adoption of agricultural innovations among farmers in Niger State, particularly in relation to radio broadcasting. This study seeks to address this knowledge gap by investigating the role of radio broadcasting in promoting the adoption of agricultural innovations among farmers in Niger State, Nigeria.

### **Objectives of the Study**

The objectives of the study are:

- i. To examine the impact of radio broadcasting on farmers' awareness and adoption of agricultural innovations in Niger State.
- ii. To assess the effectiveness of Agro Panaroma radio program in promoting agricultural innovation adoption among farmers in Niger State.
- iii. To ascertain the role of radio broadcasting in enhancing farmers' knowledge, attitudes, and practices towards agricultural innovations in Niger State.

### **Literature Review**

#### **Radio Broadcasting**

Through radio transmission, information regarding innovations in agriculture, entertainment, and education can be shared with a sizable audience. Broadcasting is the process of distributing digital, audio, or video signals to a large audience using a range of media platforms, including mobile phones, television, radio, and the internet. It functions as a means of reaching a sizable audience and community with news, information, entertainment, education, and advertising. Social media, email, and phone conversations between the audience and the broadcaster can take place via terrestrial, satellite, or cable networks. The simultaneous mechanical distribution of information to a sizable, diverse audience made up of individuals from both inside and outside of a civilization is known as broadcasting. Broadcasting fulfills every human need—social, political, hedonistic, and individual that is focused on the transfer of meaning, making it indispensable in any community (Omolade, 2013).

On December 1, 1935, the Nigerian colonial administration officially launched radio broadcasting by establishing the Rediffusion Broadcasting System (RBS), which used the Rediffusion Box to distribute information. A combination of colonial government programming and chosen BBC content was featured. In order to service more regions of Nigeria, especially those with high population densities, the BBC monitoring station in Lagos grew into a complete Radio Distribution Service (RDS) between 1935 and 1950. Subscription delivery was used to deliver the RDS (Alozie, 2011). Due to the widespread popularity of radio among Nigerians, the National Legislative Council recommended and approved the establishment of the Nigerian Broadcasting Service (NBS) in 1951, ushering in a new age of wireless broadcasting in the country. The NBS, which

launched its own radio station, was created to provide independent, objective, and educational broadcasting services. It was the first public service broadcaster in a British colony. The reinfusion technique dominated Nigeria's radio scene between the mid-1940s and the mid-1950s (Alozie, 2011).

The Nigerian Broadcasting Corporation Act of 1956 created a corporation to assume management of government broadcasting services. Its responsibilities included offering services outside of Nigeria, reflecting Nigeria's unity while expressing regional cultures, characteristics, and opinions, and providing independent and impartial public broadcasting services via wireless telegraphy and television throughout Nigeria (Asemah, 2011).

Every state saw the establishment of new federal radio stations, but these were shut down in 1984 when the military regained control of the country. The government's Structural Adjustment Programme (SAP) decreased public subsidies in the middle of the 1980s, which led to the commercialization of state broadcasters NTA and FRCN. Government control over the radio industry was upheld by the 1990 publication of the first National Mass Communication Policy (Konkwo, 2017). By creating the National Broadcasting Commission (NBC) by decree in 1992, the government reversed course on long-standing policy and permitted private organizations to own and run broadcast stations. Under General Ibrahim Babangida's direction, Nigerian broadcasting entered a new era as he granted licenses for radio and television stations to private persons and groups, thereby deregulating the industry (Omoniyi, Ige & Fagbemi, 2014). One of the goals of the NBC, which was established to supervise and control national broadcasting, is to bring market-driven concepts to the sector. Both domestic and foreign participation were encouraged by the policy. Nine mandates are listed in the NBC charter. Nigeria has fourteen licenses for private television stations and two broadcast stations under government control by 1999. Following their independence, the majority of African countries have kept their state broadcasting monopolies, defending their actions by citing the need for national culture and identity promotion, unity, and progress. Traditionally, Ministries of Information oversaw broadcasting, and the Governor, Minister, and President were the final arbiters of the state broadcaster's accountability. According to Nwosu, Soola, and Nwodu (2013), this arrangement provided the Minister and President complete control over board appointments, management, and programming in the benefit of the country.

In the meantime, the ruling commercial class routinely crossed international borders. The British Broadcasting Corporation (BBC) radio service brought broadcast media to Nigeria in 1932. Lawal and Adebayo (2006) point out that the Nigeria Broadcast Service replaced the BBC when it was founded in 1957. The colonial government hired Mr. Richard Postgonte, a former head of BBC school transmissions, to investigate the possibility of establishing an educational radio station in Nigeria in response to demands from a variety of interest groups for the Nigeria Broadcast station (NBS) to be expanded to include the entire country. His suggestions resulted in the establishment of an NBS school broadcast division. By an act of Parliament No. 39 in 1956, the Nigeria Broadcasting Corporation (NBC) was established, and on April 1, 1957, it started operations. It remained active until 1978 when the Federal Radio Corporation of Nigeria (FRCN) was established by Decree No. 8 of 1979. This decree dissolved the NBC and transferred twenty radio stations to state governments, except those in Ibadan, Lagos, and Enugu, which merged with Northern Nigeria's broadcasting organization to form the FRCN.

## **Agricultural Innovation**

Agricultural innovation is the creation and application of state-of-the-art techniques, equipment, and materials with the aim of increasing agricultural productivity, efficiency, profitability, and sustainability. Modern farming integrates cutting-edge technologies like robots, biotechnology, precision agriculture, and big data analytics to solve problems and seize opportunities (Lwoga, 2010). A few examples include developing drought-tolerant crops, smart agriculture, vertical farming, precise irrigation, and the use of ecologically friendly fertilizers and herbicides. The world's demands for fuel, fiber, food, and feed must be met by this invention in order to protect natural resources and mitigate the effects of climate change. It also entails creating new value chains, markets, and business models to support agriculture's economic sustainability and competitiveness in order to meet consumer expectations for organic or sustainably produced food (Oladejo & Ogunniyi, 2019).

Furthermore, by introducing new technologies and methods, agricultural innovation addresses issues including pests, illnesses, limited access to information and resources, soil degradation, climate change, and water scarcity. To provide customized solutions that address a range of agricultural demands, cooperation between farmers, researchers, governmental organizations, and private businesses is essential (Alabi & Oyedeji, 2016). To improve agricultural results, agricultural innovation entails creating, implementing, and disseminating new technology and knowledge. It encompasses a range of activities, including policy interventions, education, training, technology transfer, and research and development. Its beneficial impacts on food production, agricultural yields, and farm productivity are supported by empirical evidence. Research, for example, shows that the adoption of better varieties of maize in sub-Saharan Africa resulted in notable yield improvements, which raised food output and farmer earnings. Furthermore, it has been shown that innovations such as conservation agriculture practices can minimize environmental harm while reducing soil erosion, improving soil quality, and increasing agricultural output (Olumide, Fakoya, Adeyemo & Olorunsola, 2017).

Moreover, by increasing smallholder farmers' productivity and income levels, agricultural innovation plays a major role in rural development and poverty reduction (World Bank, 2012). But issues including restricted access to funding, technology, and infrastructure support still exist, especially for small-scale farmers. Innovative instruments, inputs, methods, and practices that improve technical efficiency—including better fertilizer application and the use of agrochemicals like pesticides and herbicides—are examples of agricultural innovations in Nigeria. Along with mechanical tools like tractors and harvesters, these improvements also include enhanced management techniques for the best possible farm planning, administration, and production (FAO, 2011).

## **Agricultural Communication**

Agricultural communication involves disseminating information about farming practices to farmers and others in the agricultural sector, with the primary aim of enhancing farmers' profitability. According to Akande and Fabusoro (2016), this form of communication is crucial for helping farmers make well-informed decisions that are tailored to the specific requirements of their

farms and crops. The Benue State Agricultural and Rural Development Authority (2005) utilizes a range of communication strategies to address various agricultural challenges, focusing on promoting the adoption of new technologies to boost production and income.

To effectively use these technologies, it is essential to integrate communication with skill development programs, as skilled farmers are key to maximizing the benefits of technological advancements. Agricultural communication also seeks to positively influence farmers' attitudes and behaviors, aligning them with higher production standards demanded by global agricultural markets (Daudu & Balogun, 2014).

Introducing new technologies to farmers is crucial for achieving these objectives. Agricultural communication serves a dual role: it provides essential information and equips farmers with the skills needed to improve farming practices. Effective change requires not only the transfer of information but also practical training in implementing new technologies (Amaza & Oyawa, 2017).

Additionally, agricultural communication facilitates the exchange of knowledge, supports informed decision-making, and encourages collaborative actions among stakeholders. It includes technical support through various media channels, such as television, radio, mobile phones, and digital platforms, ensuring that farmers receive solutions suited to their needs. Recognizing the importance of skill development, governments and extension agencies continually enhance communication strategies to foster direct interactions between farmers and experts (Akande & Fabusoro, 2016).

### **Radio and Agricultural Campaigns in Nigeria**

The critical role of sharing agricultural knowledge locally and improving farmers' access to information and technology cannot be emphasized. In Nigeria, since 2005, national agricultural extension services and development projects have leveraged radio as a key component of broader communication strategies, particularly through Fadama initiatives, to conduct agricultural campaigns and promote improved farming practices (Kente, 2011). The National Agricultural Extension Research Liaison Services (NAERLS) and Agricultural Development Projects (ADPs) have been tasked with spreading agricultural information nationwide. To overcome the challenge of directly reaching a vast number of farmers, they have turned to radio as a potent communication medium. Radio programs, such as *Agro Panorama* and *The Land is Green*, which broadcast in local languages and involve community participation, have seen substantial engagement in regions like Abuja, Kwara, Niger, Kaduna, Kogi, Cross River, Enugu, Lagos, and Kano. Private stations, including Freedom Radio and Ray Power, have also played a significant role in disseminating agricultural knowledge through various programs on crop production, livestock management, women's involvement in agriculture, and organic farming (Ariyo *et al*, 2013).

Notably, programs like 'Kartau sarkin Noma' and 'Noma jari' on Radio Nigeria Kaduna (FRCN) are fondly remembered by farmers in Northern Nigeria for their impactful dissemination of agricultural innovations. Similarly, Rima Radio in Sokoto and Gotel Radio in Adamawa have been recognized for their contributions to agricultural promotion. This trend is also evident in states such as Gombe, Imo, Katsina, and Ogun (Olumide *et al*, 2017). Additionally, numerous agricultural researchers in Nigeria have investigated advanced technological solutions, utilizing

radio extensively to reach farmers across various regions. Recently, new methods like community-based extension (CBE) have also been introduced (Daudu & Balogun, 2014).

### **Communication for Development**

Human survival on earth hinges on progress, and effective communication is essential for meaningful development in any social setting. The field of development communication emerged to address this need. Following the adoption of a declaration on using mass media for development activities, many developing nations embraced the media philosophy of "communication for development." This approach leverages all available communication channels to promote and raise awareness of development initiatives. It involves intentional and strategic communication aimed at delivering development messages to target audiences (Ibe, Nnadi & Anike, 2016).

According to Santas, Asemah, and Jimbo (2020), "communication for development" serves as a counter to the Western dominance of global information industries. Journalism was created to meet the evolving needs of developing countries. In international development, "communication development" encompasses various processes, methods, and principles designed to improve the living conditions and quality of life for marginalized and underdeveloped populations.

Key distinctions in development communication include enhancing participation in decision-making, strengthening community institutions, bridging knowledge and attitude gaps, fostering consensus, and advancing social justice and democracy. For farmers, generic information is less beneficial than localized content tailored to their needs, language, culture, and education levels. Rural areas often lack access to the latest information due to limited resources, illiteracy, inadequate communication infrastructure, poor road connectivity, and insufficient telecommunication services. These barriers contribute to the exclusion of impoverished and marginalized populations from development processes, perpetuating poverty.

Agricultural communication aims to improve farmers' access to diverse communication channels and involve them in policy formulation and implementation. This approach helps prevent extreme poverty and ensures farmers remain engaged in development efforts. Investment in agricultural extension is crucial, as it has significant potential to increase farmer's income and agricultural output. Developing countries are heavily investing in this area, recognizing its importance. After World War II, many industrialized nations realized the value of communication in development and initiated various relief programs in third-world countries. These programs were designed to keep communication central and to address poverty through societal and agricultural development (Akase Okoro & Nanakaan, 2017; Oyekale, Adeoti & Oyetale, 2015).

### **Review of Related Empirical Studies**

Akande and Fabusoro (2016) carried out a study on the impact of radio programs on agricultural productivity among Nigerian farmers. Their findings indicated that radio programs significantly enhance farmers' knowledge and use of advanced production techniques, thereby boosting agricultural productivity. They recommended developing effective communication strategies that incorporate radio programs tailored to the specific needs of Nigerian farmers.

In a similar vein, Adebimpe, Abolore, and Sanni (2017) examined how radio broadcasts affect crop yields among smallholder farmers in rural Nigeria. Their study revealed that radio broadcasts greatly improve farmers' understanding and adoption of superior production techniques, leading to increased agricultural yields. They advocated for targeted communication strategies that include radio broadcasting for smallholder farmers.

Adeyemo, Oluyide, Ogunleye and Bellol (2019) assessed the impact of radio programs on Nigerian maize farmers' knowledge, attitudes, and practices regarding agricultural extension services. Their research showed that radio programs positively influence farmers' attitudes towards maize production and enhance their understanding of advanced techniques, promoting wider adoption of these practices. They stressed the need for tailored radio communication strategies for maize farmers.

Similarly, Saliu, Raji and Abdulkareem (2017) explored how agricultural media campaigns have facilitated the adoption of fish farming among rural farmers in Southwest Nigeria. Their findings revealed that participation in such campaigns enhances farmers' understanding and adoption of fish farming techniques, leading to increased output and income. They recommended comprehensive communication strategies that include radio and other media to address the specific needs of rural farmers.

Conversely, Omoniyi, Ige, and Fagbemi (2014) investigated how broadcast media can support agriculture and rural development in Nigeria. Their results showed that radio programs substantially improve farmers' access to information and enhance agricultural productivity. They recommended developing and implementing effective communication plans that incorporate media broadcasts suited to rural Nigeria's needs.

Oyekale, Adeoti, and Oyekale (2015) examined the relationship between the adoption of new technologies by farm households in Southwestern Nigeria and family food security. They found that adopting modern agricultural practices, such as improved crop varieties and irrigation, significantly boosts household food security. The study supported the creation and implementation of extension services and policies that encourage farmers to adopt these modern practices.

Furthermore, Daudu and Balogun (2014) analyzed agricultural practices and innovation adoption among smallholder cassava farmers in Nigeria. Their findings indicated that using improved planting materials, spacing techniques, and cultivars significantly increases cassava yields. They recommended implementing policies and extension services to encourage the adoption of these innovations by Nigerian cassava farmers.

In Kura LGA, Kano State, Nigeria, Amaza and Oyawa (2017) explored how smallholder rice farmers access information and adopt innovations. Their study highlighted that key sources of information influencing innovation adoption are interactions with fellow farmers and extension services. To enhance the adoption of innovations among Nigerian rice farmers, the study suggested strengthening extension services and revising relevant policies. Additionally, Ibe, Naadi, and Anike (2016) reviewed the role of mass media in Nigerian agricultural development and found that mass media exposure significantly facilitates the dissemination of agricultural innovations among farmers. They recommended increased collaboration between broadcasters and agricultural extension services to improve information delivery.



## **Theoretical Framework**

### **Diffusion of Innovations Theory**

Aina (2003) emphasizes that the core objective of the diffusion of innovations theory is to disseminate new discoveries or research-based ideas within a social context. Aina explains that diffusion involves the process of spreading these novel concepts among members of a social group, while innovation refers to the new ideas, practices, behaviors, attitudes, or knowledge intended for distribution. The theory also suggests that media play a crucial role in promoting social change by introducing innovations—whether adopted from external sources or developed locally—to potential adopters. These adopters then decide whether to integrate these innovations based on the information provided. This theory is foundational to the current study because it helps in understanding how mass media, especially radio, effectively communicates new ideas to the public. It highlights the media's essential role in bringing innovations to the forefront and facilitating their acceptance and adoption within a social setting (Amaeto, Onabajo, and Osifeso, 2012).

### **Methodology**

This qualitative study used secondary data sources, such as books, journals, personal accounts, and websites, to break down important topics, talk about analysis, reach conclusions, and present the case that radio broadcasting is the most potent medium for advancing agricultural innovations and development. Also in this study, interview was used to collect data from key informants who possess in-depth knowledge and expertise on the role of radio broadcasting in promoting the adoption of agricultural innovations among farmers in Niger State, Nigeria. Specifically, semi-structured interview was conducted with agricultural extension agents, radio broadcasters, and farmers who have successfully adopted innovative agricultural practices. The interview was conducted in person, and lasted approximately from 45 minutes to an hour. An interview guide was used to ensure consistency and comprehensiveness of the data collected. The guide included open-ended questions that explored the respondents' experiences, perceptions, and opinions on the effectiveness of radio broadcasting in disseminating agricultural information, the content and quality of radio programs, and the factors influencing farmers' adoption of agricultural innovations. The interviews were audio-recorded with the respondents' consent, and the recordings were later transcribed verbatim to facilitate data analysis. The data collected through the interview provided rich and qualitative insights into the complex factors influencing the adoption of agricultural innovations among farmers in Niger State and the potential role of radio broadcasting in promoting sustainable agricultural practices.

### **Discussion of Findings**

#### **The Impact of Radio Broadcasting among Farmers in Niger State**

Radio broadcasting significantly influences the adoption of agricultural innovations among farmers in Niger State, Nigeria. Through radio programs, farmers gain access to new agricultural technologies, practices, and ideas, which enhance their knowledge and skills. This results in

improved agricultural productivity, higher incomes, and a better quality of life for farmers in the region. Radio effectively disseminates information about agricultural advancements, reaching a wide audience and enabling farmers to make well-informed decisions about their farming practices (Ferrer *et al*, 2023).

Radio is a powerful communication tool for promoting agriculture and driving development in rural areas like Niger State. It employs various strategies, including broadcasting in local languages, conducting interviews with experts, featuring farmer-focused programs, and using interactive formats to engage the audience. Despite its extensive reach, challenges remain in delivering content in local languages, particularly in areas where literacy rates are low and local dialects, such as Nupe, are predominantly spoken. This highlights the need for radio to continue playing a central role in rural development by ensuring that information is accessible and relevant to the community, thereby potentially transforming agricultural practices and improving farmers' lives (Zamisa & Taruvinga, 2022).

### **Agro Panarama Radio Programme in Niger State**

The Agro Panorama radio program, launched by the National Cereal Research Institute in Badeggi and aired on FM Radio Bida, aims to educate rural farmers about agricultural innovations and encourage the adoption of advanced farming techniques. The findings of this study reveal that Agro Panarama radio program has played a significant role in promoting the adoption of agricultural innovations among farmers in Niger State, Nigeria. The program's ability to reach a large audience, including remote and rural areas, has bridged the information gap and enhanced farmers' awareness and knowledge of new agricultural technologies and practices. The study shows that farmers who listened to Agro Panarama adopted improved seed varieties, fertilizers, and pest management techniques, resulting in increased crop yields and productivity. Moreover, the program's interactive format and use of local languages have facilitated understanding and engagement among farmers, fostering a sense of community and encouraging farmer-to-farmer knowledge sharing (Interview with Peter Kolo, 2024). Initially, there was resistance to using fertilizers among these communities. However, the program has successfully changed attitudes, leading to widespread use of various fertilizers and modern farming practices. Farmers now use diverse seedlings and modern methods, resulting in higher crop yields (Interview with Gana Doko, 2024). The program also encouraged the use of organic fertilizers like cow dung, poultry waste, and burnt tire ash, erosion control, and covers modern preservation techniques for crops such as grains, yams, and cassava. It introduces improved farming tools, basic irrigation methods for rural farms, and strategies for year-round planting. Additionally, the program promotes cage culture for fish farming, which has proven more effective than traditional pond methods, and familiarizes farmers with modern machinery to boost productivity (Interview with Ibrahim Sheshi, 2024).

The findings also indicate that Agro Panarama has complemented existing agricultural extension services, reinforcing messages and promoting a cohesive approach to agricultural development. Overall, the study demonstrated the effectiveness of Agro Panarama radio program in promoting agricultural innovation adoption among farmers in Niger State, highlighting the potential of radio broadcasting as a tool for agricultural development in Nigeria (Interview with Mohammed Isah, 2024).

## Conclusion

This study has demonstrated the significant impact of radio broadcasting, particularly Agro Panorama, on promoting agricultural innovation adoption among farmers. The findings reveal that radio broadcasting is an effective tool for disseminating information on new agricultural technologies and practices, leading to improved productivity, income, and food security among farmers. The study highlights the importance of access to radio, language, and content relevance in influencing farmers' adoption of agricultural innovations. Furthermore, it emphasizes the need for strengthened partnerships between radio broadcasters, extension agents, and farmers to ensure effective agricultural innovation adoption. Overall, the study underscores the potential of radio broadcasting in promoting agricultural development in Niger State, Nigeria, and provides valuable insights for policymakers.

## Recommendations

Based on the findings of the study, the following recommendations are made:

- i. The study advocates the use of radio broadcasting as a primary tool for spreading information about agricultural innovations to farmers in Niger State, Nigeria.
- ii. Agricultural extension agents and organizations should collaborate with radio stations to create and air programs that highlight new farming techniques, technologies, and expert insights.
- iii. There should be increased investment by both government and non-governmental organizations to improve radio coverage and accessibility in rural areas, thereby enhancing the effectiveness of radio communications.
- iv. Radio programs should be produced in local languages to ensure farmers fully understand and implement the information.
- v. The study also recommends encouraging farmers' associations and cooperatives to participate in these programs, sharing their experiences and best practices.
- vi. Lastly, it suggests conducting further research to assess the long-term impact of radio broadcasting on farmers' knowledge and adoption of agricultural innovations.

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