The contribution of SUA FM radio to improving farming practices in Mvomero district, Morogoro region, Tanzania

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ABSTRACT

Radio is one of the most effective agricultural communication tools; with its reach, accessibility, and ability to overcome literacy barriers, radio can be one of the most powerful agricultural communication tools. The community radio station SUA FM Radio, affiliated with the Sokoine University of Agriculture (SUA), is specifically designed to offer agricultural programs based on scientific research and practical advice tailored to farmers in simple language. However, there is no empirical evidence of how this radio has contributed to the transformation of agriculture as a source of agricultural information and a tool for empowering farmers to improve their farming practices and production. The study examined how SUA FM Radio is contributing to the improvement of agricultural practices among smallholder farmers in the Mvomero district of the Morogoro region, Tanzania. Guided by Uses and Gratifications Theory (UGT), the research focused on four specific objectives: assessing how demographic factors influence the use of SUA FM Radio for improving agricultural practices, assessing the SUA FM Radio's influence on improving farming practices in the Mvomero district, determining the timeliness of the agricultural information offered by SUA FM Radio to farmers, and assessing challenges facing farmers in accessing SUA FM Radio programs in the Mvomero district. Study using a cross-sectional design of the study. A multi-stage sampling technique was used, using purposive sampling to select regions, districts, wards, and respondents. Then the sample of 204 farmers who were SUA FM listeners was selected by simple random sampling in three wards, namely Wami Dakawa, Mlali, and Mzumbe. Data was collected through questionnaires and interviews and analyzed using inferential statistics, which was linear regression, and descriptive statistics, which were based on frequency and percentages. The results through the regression analysis indicated that education and marital status were negative (-0.303) with an odds ratio of 0.74, and the variable was statistically significant ($p < 0.05$), indicating the most significant predictors of how much SUA FM Radio contributed to improved farming; age had a slight negative effect, and gender did not. Analysis showed that 91.6% of farmers agreed that SUA FM Radio programs had enhanced farming practices, particularly on crop cultivation, use of better seeds, weather, and pest control, while over 51% found the information timely and relevant to the agricultural calendar (although 44.3% reported that the information was sometimes delayed), with key challenges being poor radio signal reception (25.6%) and lack of program timetables (16.3%). The study concludes that SUA FM radio is important for increasing agricultural knowledge, but that improvements are needed to enhance its impact on knowledge; for example, age and gender had no statistically significant effect on the contribution of SUA FM radio to increasing agricultural knowledge, but education and marital status did. The study recommends that SUAFM Radio align its programs with the agricultural calendar, expand its content, improve the coverage of its signals, and provide a clear timetable; also, efforts to improve agricultural practices should be focused on educating farmers and supporting married couples.

Keywords: Agriculture Production, Extension Services, Farming Practice, ICT Use, Mvomero District, Radio Programs, SUA FM Radio

I. INTRODUCTION

Most Tanzanians, and certainly in rural parts of Morogoro, where smallholder farming is widespread, are still dependent on agriculture for survival (Gupta, 2020). According to, lack of access is caused by an insufficient number of agricultural extension workers in Tanzania, who are the primary source of agricultural extension services and information. Despite being potential, a lot of farmers still do not adapt to technology, with many of them practicing traditional methods while attaining very low productivity due to poor access to modern agricultural methods and technologies (Mapiye et al., 2023). In response to the challenge of agricultural extension services, several

communication tools have been used, with radio being a primary medium due to its widespread access, low cost, and its capacity to penetrate literacy obstacles, making it ideal for use in rural areas (Abdulai et al., 2021; Prakas, 2024; Salam & Khan, 2020).

Radio continues to remain a useful tool for agricultural extension in rural regions, filling in knowledge gaps among smallholder farmers who often lack access to the internet or mobile phones (Tafida & Sabiu, 2021). For instance, according to Food Agriculture Organization (FAO), the debut of National Network of Small-Scale Farmers Groups in Tanzania (MVIWATA FM Radio) in August 2020 in Tanzania provided an opportunity for everyone in the community to tune in to agricultural programming, which focused on sustainable production, insect control, soil fertility, crop diversity, and connecting farmers with markets (FAO, 2021). Farm Radio International (FRI) and Consultative Group on International Agriculture Research (CGIAR) have conducted larger studies in sub-Saharan Africa that show how radio can make extension services more effective on a large scale (CGIAR, 2022). FRI disseminates content in interactive formats through more than 700 partner radio stations. For instance, its Uliza call-in system, which received over 12 million listener responses and helped to shape program design by using the voices of farmers themselves, has led to more responsive and locally-relevant advisory content (Mhlaba & Yusuf, 2020).

A recent study reveals that radio does effectively encourage the farmers' use of recommended agronomic practices. A radio-facilitated participatory campaign on integrated soil fertility management (ISFM) in Ghana enhanced farmer understanding and acceptance of crop rotation and fertilizer application, especially during a period when fertilizer costs were rising. A 2024 study found that rural radio forum formats significantly improved farmers' abilities, expertise, and adoption of innovations in Oyo and Ogun states (Shodipe et al., 2024). In light based on this research, radio has been influential in promoting behavior change through interactive, participative, and language-specific programming, leading to an increase in crop production and developing livelihoods.

According to Kalungwizi et al. (2013), SUA FM Radio, a community-based station established by the Sokoine University of Agriculture, was designed to make academic agricultural research more accessible to farmers in Tanzania. SUAFM Radio broadcasts in the Swahili language and features different programs aimed at optimal agronomic practices considerations, pest and disease control, meteorological reports, post-harvest considerations, and market updates. Each segment is accompanied by expert guest commentators, guest farmers who have shared similar experiences, and opportunities for call-ins to ensure it's as helpful as possible (Mhlaba & Yusuf, 2020).

Thus, the research aims to investigate the contribution of SUAFM Radio in improving farming practices to farmers in the Morogoro region, particularly in Mvomero district, and identify the challenges that hinder effective utilization to propose suggestions aimed at enhancing the station's goal in agricultural transformation. Understanding radio strength as an extension service tool will allow stakeholders to plan and contribute to more informed strategies for farmers in rural areas where agricultural information access is low.

1.1 Statement of the Problem

Radio is known as one of the powerful communication tools for disseminating agricultural information to farmers, especially in rural areas around the world, due to its strength in overcoming literacy, timeliness, wide reach, and affordability (Abdulai et al., 2021). It plays a vital role in transforming agriculture and improving production when farmers embrace best farming practices aired by radio programs through expert interviews, farmers' engagement in these programs, and local language use, which makes them easy to understand (Mhlaba & Yusuf, 2020). SUAFM Radio was introduced as a bridge between agricultural research and rural farming communities with the ideal goal of making scientific and practical farming knowledge widely accessible (Kalungwizi, 2013). The vision is for SUAFM Radio to deliver timely, relevant, and simple language of agricultural information that farmers could understand and adopt the modern farming practices, enhance productivity, and address common farming challenges, including pest control, soil fertility, Market access, and climate change impacts (Kalungwizi et al., 2013).

In Tanzania, particularly in Morogoro, smallholder farmers face several challenges, including limited access to timely and reliable agricultural information, inadequate knowledge of modern farming techniques, poor post-harvest handling practices, and low adoption of climate-smart agriculture methods (Mligo et al., 2022). These challenges lead smallholder farmers to make an informed decision, which leads to the use of poor farming practices and lower agricultural production, and finally results in food scarcity and poverty (Mtega et al., 2016). If functioning as intended, SUA FM Radio would serve as a powerful tool to complement extension services, reduce the knowledge gap, and empower farmers in Morogoro, especially in Mvomero, where agriculture is vital to livelihoods.

It is necessary to investigate the contribution of SUA FM Radio to improve access and use of agricultural information as a means of improving farming practices in Morogoro, without a clear understanding that it is difficult to know the impact of SUA FM Radio on farming practices and the challenges that hinder effective access and use of its agricultural programs in Morogoro.

1.2 Research Objectives

i. To assess how demographic factors influence the use of SUA FM Radio for improving agricultural practices
ii. To assess the SUAFM Radios' influence on improving farming practices in the Mvomero district.
iii. To determine the timeliness of the agricultural information offered by SUA FM Radio to farmers
iv. To assess challenges facing farmers in accessing SUA FM Radio programs in the Mvomero district.

II. LITERATURE REVIEW

2.1 Theoretical Review

According to Liestia (2023) the theoretical framework is a key part of the research process, as it provides the basis for the study by linking the research problem with existing theories and knowledge, ensuring that the study is not conducted in a vacuum but is based on previous scientific work; it also provides a lens through which to interpret the results, and it makes the study more robust and comparable with other studies.

2.1.1 Use and Gratifications Theory (UGT)

The study adopted Uses and Gratifications Theory, which explains that people seek media content to fulfill their information and social needs. The theory provides a way for understanding the motivations and factors influencing farmers' use of SUA FM Radio to access agricultural information. The theory explains the gratifications which are offered by SUA FM Radio to farmers, the kind of agricultural practices which farmers find suitable to improve productivity, and which satisfy their need for knowledge, guidance, and support in improving farming practices (Hajdarmataj & Paksoy, 2023).

2.2 Empirical Review

2.2.1 Radio Contribution to Improving Farming Practices

Radio plays an important role and also promotes the dissemination of information on improving agricultural practices, particularly in rural areas where access to formal agricultural education and extension services is limited (Haruna & Ibrahim, 2024). Radio provides access to agricultural information and can help bridge the knowledge gap between farmers and agricultural experts in order to encourage them to adopt better farming practices (Nthama & Oladele, 2024). Regular radio agricultural programs provide farmers with information on crop production, pest control, weather forecasts, new agricultural technologies, and best practices (Wilson et al., 2025).

Moreover, studies on radio as a channel for access to agricultural programs in Tanzania show that farmers who regularly listen to such programs are more likely to adopt modern agricultural practices (Salik et al., 2021). In addition, radio also plays an important role in increasing farmers' acceptance of new technologies and innovation, as radio programs often reach them, and as farmers hear success stories from peers or radio experts, they are more likely to try them on their own, which in turn will lead to greater acceptance of modern farming (Attuh & Kankam, 2024). For example, agricultural radio programs help farmers adapt to climate change by providing them with weather forecasts and advice on how to adapt their farming practices to the changing climate (Tham-Agyekum et al., 2025). Radio provides immediate information, which is important for smallholder farmers in order to reduce the risk of food insecurity and food insecurity (Kumar et al., 2020). Local radio produces content that addresses local competition with seasonal challenges such as market prices and local farming practices (Moylan, 2023).

2.2.2 Demographic Factors influencing the use of SUA FM Radio for Improving Agricultural Practices

On the other hand, other researchers who have studied the role of the radio in disseminating agricultural information have found that family factors such as marital status, household size, and income allow radio programs to be influential for improving farming practices (Musinguzi et al., 2024). Family unity is known to enhance learning within families and can increase the benefits of radio-based programs, although fewer studies directly link marital status to radio use (Oyinloye et al., 2024).

However, other studies show that age may sometimes hamper the adoption of technologies, including radio-based farming education (Alant & Bakare, 2021). Older farmers prefer traditional media, such as extension agents, to new media technologies for access to agricultural information (Nkuba et al., 2023). This resistance reflects cognitive and experiential barriers to the uptake of innovations delivered via broadcast media.

Meaning while, other scholars found that educated people have a lower chance of using radio as their source of agricultural information due to their wide range of information sources (Shukla & Ansari, 2024). According to Magesa et al. (2023), farmers with low literacy levels tend to use radio as their primary source of agricultural information because it overcomes literacy and reaches even remote communities.

2.2.3 The Timeliness of Agricultural Information Offered by Radio to Farmers

Timely agricultural information is increasingly important for effective decision-making by farmers, and agriculture in the region is highly vulnerable to unpredictable weather, diseases, and pests (Muita et al., 2021). Radio is a medium that can convey important agricultural information in urgent situations quickly and efficiently, such as weather forecasts, the emergence of pests and diseases, and market prices, which can help farmers to make informed choices (Laor, 2022). Rapid dissemination of information to farmers is crucial for planning agricultural activities for the season (Palvi et al., 2018).

Research has shown that information provided to farmers at the right moment in their agricultural calendar is of value (Bizo et al., 2024). Farmers also prefer to receive information on farming practices, which are broadcast continuously over the radio throughout the growing season (Ben-Enukora et al., 2023). Real-time data on various burning issues, such as the invasion of the American autumn armyworm and locusts, and other issues, such as rainfall, help farmers plan and minimize losses (Jat et al., 2021).

Benard et al. (2020) found that due to a lack of proper coordination, the timeliness of information could sometimes be jeopardized by agricultural experts and program producers. Likewise, due to delays in obtaining accurate information from agricultural and institutional experts, information is sometimes out of date and does not reach farmers in time; in some areas of Tanzania, farmers have complained that rainfall forecasts and planting recommendations are delivered too late for them to be useful (Babu, 2025; Sawe, 2025). This shows the importance of a good information channel from source to media to ensure timely production of information and the provision of relevant information to farmers, and the importance of the involvement of local extension staff and farmers themselves in the planning and feedback process for broadcasters to adapt their programs to the real conditions in the field (Norton & Alwang, 2020).

2.2.4 Challenges in Accessing Agricultural Information through SUAFM Radio

Nevertheless, radio-based agricultural programs are recognized as an effective means of informing farmers, especially in rural areas, but many problems are encountered by farmers wishing to benefit from radio-based agricultural programs (Haruna & Eze, 2024). These include lack of access to radio equipment and reliable energy sources, poverty, and lack of access to fuel and batteries (Choruma et al., 2024; Komodromos, 2024). If farmers do not have access to radio for access to agricultural programs, they are deprived of information that could help them improve their practices (Awuah-Frimpong et al., 2024).

Additionally, if this language is not widely known by farmers, it will become an obstacle for them to listen to the broadcasts and to follow the recommendations of the practice (Raza et al., 2023). Agricultural programs broadcast in a foreign language or at times inconvenient for farmers, either because they tend their crops during the day or sleep at night, are not accepted by farmers (Adeyeye & Amodu, 2021). In other parts of the world, such as in many African countries, agricultural information is provided in national or official languages rather than in local dialects, which makes it inaccessible to farmers with less education.(Mhlaba & Yusuf, 2020; Ragasa et al., 2021),

According to Attuh and Kankam, (2024) and Yessoufou et al., (2022), in their study on the use of radio in rural development, the timing of agricultural programs is crucial for farmers to be aware of and to tune in to the program in question, given that in this age of multiple radio stations in most communities, the lack of proper publicity for the programs leaves farmers confused about which agricultural programs are on air and when. Moreover, research shows that in some areas of Tanzania, farmers are not even aware of the agricultural programs (Msangi, 2020).

Furthermore, problems include technical constraints and poor signal coverage; weak or inconsistent radio signals lead to farmers receiving partial or distorted information, which may lead to misapprehension or misapplication of agricultural advice, especially in remote mountain areas (Ishengoma, 2024). This challenge is also faced by farmers in areas where there are no or few community radio stations (Sibanda & Nkomo, 2025).

Likewise, another major problem for farmers is the participation-based programs, where farmers follow the programs and are not given a chance to ask questions or to be further informed (Ragasa et al., 2022). Radio is a one-way medium, but farmers want two-way communication in the interests of feedback and dialogue. The lack of audience interaction during the program, whether via call-in or SMS, makes it unproductive (Silvestri et al., 2021). The lack of interaction during the program, such as questions or sharing experiences, can lead to a feeling of disconnection among farmers (Cubos & Vargas, 2021).

2.3 Conceptual Framework

The conceptual framework is the tool that scientists use to map the key concepts, variables, and relationships that underlie the study. One definition describes it as a description of how a researcher perceives the factors and variables in a study and their relationship to one another (Varpio et al., 2020); this helps to explain how the research is organized and how it builds upon existing literature.

The conceptual framework of the study is based on the premise that relevant agricultural information available to farmers through SUA FM radio can have a significant impact on their knowledge, decision-making, and adoption of better farming practices. This shows the independent variable (agricultural information provided by SUA FM programs) and the dependent variable (improved agricultural practices of farmers), and the intervening factors (the socio-demographic characteristics of farmers, radio access, and the availability of complementary support services) to examine how SUA FM Radio can contribute to improving farming practices of smallholder farmers in Mvomero.

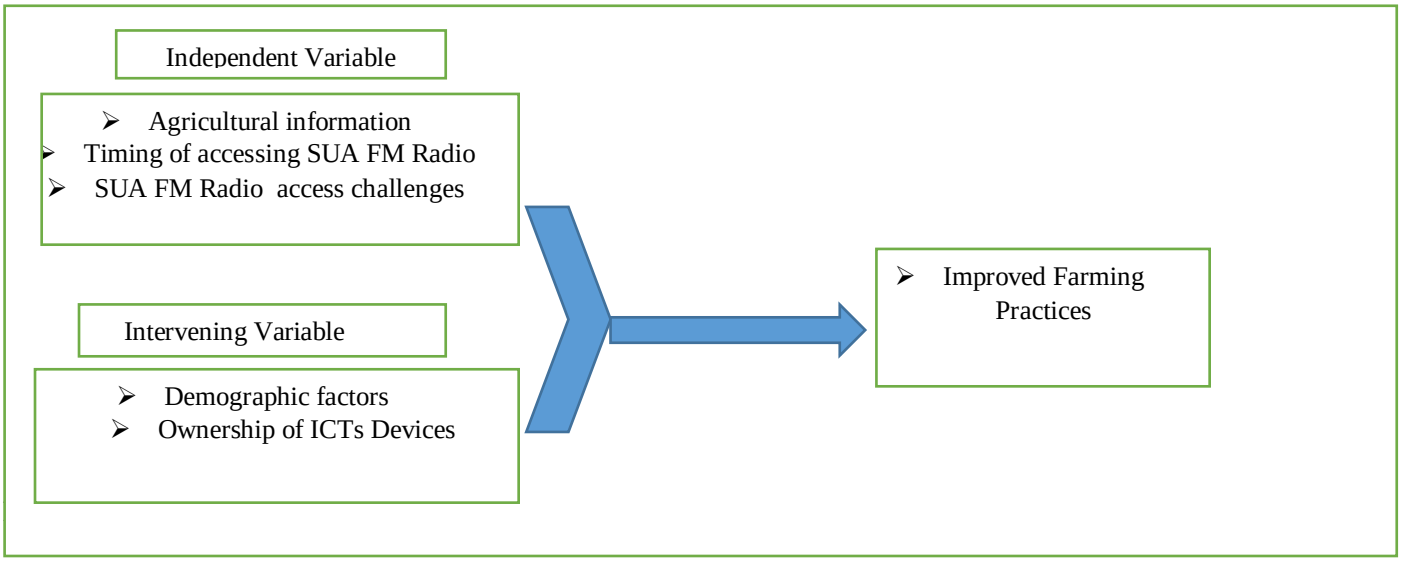

Figure 1
Conceptual Framework

III. METHODOLOGY

3.1 Study Area

This study was conducted in the Mvomero District in Morogoro Region, Tanzania. The Mvomero District, one of seven districts in the Morogoro Region, was officially constituted on August 2, 2002, following the division of the former Morogoro District Council. It is located in eastern Tanzania and shares borders with Kilosa District to the north, Morogoro District to the south, Ulanga District to the east, and Morogoro Rural District to the west. The District is administratively segmented into four divisions: Mlali, Mvomero, Mgeta, and Turiani. It has 30 Wards, 130 Villages, and 687 hamlets (URT, 2024). The major economic activity in the District is Agriculture, which engages about 80- 90 percent of the district's labor force. The district was chosen because accessible to SUAFM Radio compared to other districts in the Morogoro Region.

3.2 Research Design

The study used a cross-sectional research design, which involves the collection of information only once at a time from any given sample of the population (Salter, 2023). This design is suitable for this study because it enables researchers to capture farmers' current experience, perception, and experiences and practices on SUAFM Radio agricultural programs within a specific time frame.

3.3 Study Population

The study population consisted of farmers who regularly listened to SUAFM Radio to obtain agricultural information. These farmers were selected because they actively engaged with the radio programs for guidance on farming practices.

3.4 Sample Size

The sample size was obtained by using the Sample Size Determination Table, which states that if the total population is between 50,000 to 100,000, the sample size is 204 at a precision level of ±7% of respondents.

3.5 Sampling technique

The multistage sample technique was employed in this study, with the first stage comprising the selection of the region, Morogoro, which was deliberately selected given that SUAFM Radio is officially recognized by the Tanzania Communication Regulatory Authority (TCRA) as the district radio in the region. The second stage was the selection of a district, in which the Mvomero district was chosen purposively because SUAFM Radio frequency covers the district better than the other remaining districts, which allows farmers to access agricultural information and makes it the best area for this study. A purposive sampling technique was used to select wards involving three Wards, namely, Mlali, Wami Dakawa, and Mzumbe, because these are the wards that receive the SUAFM Radio signal more clearly than the other wards in the district, and make them the best wards to get respondents. Respondents in these wards were found through the list of farmers in each ward register, and then the researcher used the list to get phone numbers and called them randomly to get those who listened to SUAFM Radio in each ward. Those who were listening to SUAFM Radio were randomly selected using simple random sampling and were given a self-administered questionnaire.

3.6 Methods and Instruments used for Data Collection

The study used both questionnaires and interview guides as data collection tools. Questionnaires were applied to gather structured and measurable information from a large number of respondents, allowing efficient analysis. They are particularly suitable for generating statistical evidence and comparing demographic variables. On the other hand, interview guides facilitated open and flexible discussions that provided deeper insights. These interviews helped uncover participants' experiences, perspectives, and motivations, making them valuable for qualitative exploration.

3.7 Data Analysis

The quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics, such as frequencies and percentages, were utilized for analyzing the improved farming practices as the contribution of SUAFM Radio in Mvomero district respondents' socio-demographic characteristics, to determine the timeliness of the agricultural information offered by SUA to farmers, to assess challenges facing farmers in accessing SUAFM Radio programs in Mvomero district, while Inferential statistics were done using linear regression to predict how demographic factors influence the use of SUAFM Radio for improving agricultural practices.

3.8 Instruments' Validity and Reliability

The research borrowed the already validated instrument and customized it according to the study objectives. Moreover, the research instrument's reliability was ensured by pretesting to verify its reliability. The researcher pretested the reliability of an instrument using a random sample of 20 farmers who were listening to SUAFM Radio from Mikese Ward. Data was analyzed, and pre-testing results yielded a Cronbach alpha of 0.741, which is above the commonly accepted threshold of 0.70 (Pandarathodiyil *et al.*, 2024). This means the instrument is sufficiently correlated to measure the study variables.

3.9 Ethical Consideration

Ethical principles were strictly observed to safeguard the rights of participants and ensure the credibility of the study. Before data collection, the researcher sought official permission from relevant authorities and obtained informed consent from all respondents after clearly explaining the study's purpose, procedures, and the voluntary nature of participation. Confidentiality and anonymity were maintained by avoiding the disclosure of identifying information in both the dataset and the final report. Participants were also assured of their right to withdraw from the study at any stage without any negative consequences. Overall, the research was conducted in full compliance with institutional and professional ethical standards, reflecting respect, transparency, and fairness in the handling and reporting of data.

IV. FINDINGS & DISCUSSION

4.1 Social-Demographic Characteristics of Respondents

Social demographics of respondents in this study refer to basic social attributes that define the background of farmers and shape how they access, interpret, and utilize agricultural information. For this study chose to look at Age, gender, marital status, and education level to determine if they influence both the extent of exposure to SUAFM Radio programs and the likelihood of adoption of improved farming practices. Understanding these characteristics is crucial because they provide insights into differences in information needs, listening behavior, and adaptation capacity among farmer groups.

Table 1

Social-Demographic Characteristics of Respondents

Sociodemographic Characteristics		**Frequency**	**Percentage**
Marital status	Single	49	24.0
	Married	129	63.2
	Divorced	26	12.7
Sex	Male	103	50.5
	Female	101	49.5
Education level	No formal education	44	21.6
	Primary education	112	54.9
	Secondary education	39	19.1
	Diploma/certificate	5	2.5
	Bachelor degree	4	2.0
	Postgraduate degree	0	0.0
Age	18-25	39	19.1
	26-35	55	27.0
	36-45	42	20.6
	46-55	33	16.2
	56+	35	17.2

The social-demographic characteristics of respondents in the study area are presented in Table 1above. The study found that most respondents were married, indicating that farming is always practiced within family settings. These findings are consistent with (Mwalukasa et al., 2018), who also reported a high proportion of married farmers in similar contexts. This implies that married respondents may have greater responsibilities and are more likely to seek liable agricultural information, and make them active users of SUAFM Radios' agricultural information.

Sex distribution among respondents was nearly balanced, with 50.5% male and 49.5% female, indicating that both male and female farmers are actively involved in farming practices but also depend on SUAFM Radio for agricultural information. This supports the study by Busindeli (2024), who found that gender does not significantly influence preference for using Radio over other media types like Television and Newspapers in rural areas, but they are similarly dependent on radio for agricultural information. These results justify the need for SUAFM Radio to design agricultural programs that are inclusive and responsive to the information needs of both men and women farmers.

In terms of education, most respondents, 112 out of 204, had attained only primary education, followed by secondary school, 39 respondents, with a notable portion having no formal education. As Chen and Lu (2020) observed, farmers with lower educational levels tend to rely more on radio for agricultural information, while those with higher education levels diversify their information sources. This means that there is a need for radio programs to use clear and simple accessible language to ensure effective communication.

Age distribution drawn from diverse age groups led by those who were ranging from 36 – 35, who were 27% followed by those aged 36 – 45, who are 20.6%, 18-25 with 19.1% and lastly a few older farmers. The Results correlated with those found by Rehman et al. (2022), that these age groups are more actively looking for knowledge to improve their farming practices and finally productivity. These results mean SUAFM Radio is reaching the targeted age groups who are at the age of productivity and actively seeking agricultural knowledge and applying it to improve production.

4.2 Perceived Influence of SUAFM Radio in Improving Farming Practices in Mvomero district

The findings show that SUAFM Radio has had a highly positive impact on improving farming practices in Mvomero District, with 91.6% of respondents stating that the information received from the station has helped

improve their agricultural practices, while only 8.4% disagreed. This information includes pest and disease control, improved seed varieties, weather forecasts, crop cultivation techniques, post-harvest handling, and market information. These results correlated with the previous study by Ragasa et al. (2021), who found that radio programs broadcast to impact knowledge to farmers showed positive adaptation. The general positive acknowledgement of farmers in this study means SUAFM Radio's agricultural programs address farmers' information needs in the study area. The findings aligned with Musinguzi et al. (2024), who found that people have different attitudes and perceptions, which can limit or facilitate both listenership and the application of information they hear from the radio.

4.3 Timeliness of the Agricultural Information Offered by SUAFM Radio to farmers

Examining the timing of agricultural information disseminated by radio is crucial, as the efficacy of radio prog rams is contingent not only on the quality of the information but also on farmers' ability to receive it promptly. Ample airtime guarantees that programs address agricultural subjects with sufficient detail to be practical and actionab le, while the suitability of program timing influences farmers' availability to listen, considering their daily farming and household commitments. For the case of this study of SUAFM Radio synchronizing broadcast schedules with the routines of farmers in Mvomero District enhances the probability that both male and female farmers can reliably access, comprehend, and implement the disseminated agricultural knowledge, thus optimizing the station's impact on enhancing farming practices.

Table 4

Timeliness of the Agricultural Information Offered by SUAFM Radio to Farmers

Aspect	Category	Frequency	Percent %
Timing of Agricultural Information	Very timely	40	19.3
	Timely	66	32.5
	Occasionally timely	90	44.3
	Not timely	8	3.9
Sufficient program airtime	Yes	129	63.5
	No	74	36.5
Appropriateness of program time	Yes	167	82.3
	No	36	17.7
Total		**203**	**100**

The findings of the study show in Table 4 that the agricultural information provided by SUAFM Radio is generally seen as timely, with 51.7% of respondents, while a large portion (44.3%) found the information to be occasionally timely, and only 3.9% found it not timely. These findings are supported by the study conducted by Farayola et al. (2020) found that farmers said that the quality of information they got through radio was timely. This means that sometimes there is a delay in the information broadcast. These findings mean that, apart from the good work and strength of radio in disseminating agricultural information to farmers, but number of these contents comes at a delayed time than was needed.

Regarding the sufficiency of agricultural program duration, 63.5% of respondents acknowledged that the duration of the programs on SUAFM Radio was enough for them to get the intended knowledge from the program. However, 36.5% of respondents indicated that the airtime was insufficient, pointing to the potential for extending the programs to meet the audience's needs. The finding aligned with the study done by Yahaya et al. (2020) that the limited time available for farmers to listen to radio programs was a key constraint. The short program's airtime. Insufficient program airtime to some farmers could be due to their low ability to catch the complex topic message and knowledge, which makes them unsatisfied with the content.

The results show that a significant majority of respondents (82.3%) find the airtime for SUAFM Radios' agricultural programs appropriate, indicating that the station has effectively scheduled its broadcasts to align with farmers' farming season, while 17.7% feel that not appropriate with the farming season. This implies that SUAFM Radio airs programs according to the farming season from weather forecast, land preparation, planting, harvesting, post-harvest handling, and market so that the program is useful to farmers in the area. The findings aligned with Yahaya et al. (2020), who found that high relevance, uptake, and acceptability among farmers were guaranteed by this meticulous synchronization with the agricultural cycle.

4.4 Challenges Facing Farmers in Accessing SUAFM Radio Programs in Mvomero district.

Analyzing challenges such as inadequate signal reception, signal loss, absence of pertinent content, lack of a programming schedule, restricted access to radios, inconvenient broadcast times, and language barriers is crucial, as

these elements directly affect farmers' capacity to access, comprehend, and utilize agricultural information disseminated by SUAFM Radio.

Recognizing these obstacles elucidates both the degree of farmers' exclusion from essential information and t he particular domains where SUAFM must enhance its delivery to guarantee inclusivity and efficacy. In Mvomero District, knowing about these problems is important for understanding why some farmers may not get the full benefits of SUAFM Radio programs. This can help make suggestions on how to make the radio more useful for improving farming methods.

4.4.1 Poor Signal

The analysis from a point Likert scale of challenges shows that many farmers noted that poor signal coverage was a major challenge in accessing SUAFM Radio agricultural programs, whereby about 25.6% of respondents thought it was a major issue, while 30.0% said it was a normal challenge. Only 18.7% said it was not a challenge at all, indicating that signal issues constitute a significant barrier to effective program access in the district. This is supported by the study by Mtega (2018), who found that farmers in Morogoro revealed low radio signal quality and incorrect or missing broadcast schedules as major hurdles to getting agricultural information through radio. The findings are also supported by the study conducted by MCT (2023) reports that most radio stations have good signals in urban areas, that in rural areas. These findings highlight the need for infrastructure improvement and better transparency in scheduling to enhance accessibility and usability of the broadcasts

4.4.1 Signal Loss

Signal loss was another part of concern, with 16.7% of respondents explaining it in five Likert scale points as a major challenge and 31.0% as a normal challenge. Although 20.2% of farmers claimed it was not a problem, intermittent signal loss appears to impair consistent access to agricultural programs for a large number of the Audience. The findings are consistent with the results by Busindeli (2024), who found that there is a significant challenge in the rural part of Tanzania hampering farmers' access to radio programs to improve their farming practices. This implies that farmers are unable to have continuous following knowledge due to frequent signal loss and missing intended knowledge.

4.4.2 Lack of Relevant Content

Lack of relevant content was less common than signal-related issues, whereby only 3.9% of respondents rated it on a scale as a major issue, with 7.9% describing it as a normal challenge. The majority of farmers (57.1%) said that this was not a problem at all, which implies that SUA FM Radio broadcasts information that is seen as useful and relevant to most farmers in the study area. This was also reported by Musinguzi et al. (2024) in their study that Agricultural programs on radio have a huge impact in improving farming practices when they address farmers' needs with the advantage of their wider coverage to farming communities.

4.4.3 Absence of Program Timetable

The lack of a program timetable was an important concern for some of these farmers in the district, with 16.3% marking it as a major obstacle and 32.5% as a normal challenge. While 27.6% said it wasn't a problem. The findings supported with the one done by Rahman et al. (2010), who found that not knowing the exact time for a specific topic or program was mentioned as one of the biggest challenges to most of the farmers in the study area. This means that not knowing the program timetable can make it difficult for farmers to manage their listening plans and utilize what the radio offers in these programs.

4.4.3 Lack of Access to Radio

Farmers in the study area rated in a five Likert scale that access to a radio as not a challenge at all, with only 2.5% recognizing it as a severe issue and 3.9% as a minor challenge, while in contrast, 66.5% said it was no problem at all. This means the majority of farmers in the district own or have access to a radio set. This finding is supported by the study conducted by Yusuf (2020), who found that farmers in rural areas own radio sets than televisions, which gives them more advantages of listening to agricultural programs.

4.4.4 Inconvenient Broadcast Time

According to the findings, the majority of respondents (66.5%) stated that inconvenient broadcast times were not a problem, while 12.3% rated it as a major challenge, 17% normal challenge. This result is contradicted by the study conducted in Uganda by Musinguzi et al. (2024), who acknowledged that agricultural radio programs have a great impact in transforming farming practices, but they are broadcast at a bad time among farmers in the area, and

recommended that they need to be aired in the evening when farmers are back from farming work. These results imply that most farmers in Mvomero District are typically satisfied with the scheduling and accessibility to SUAFM Radio's agricultural programs.

4.4.5 Language Barrier

The analysis of the data shows that 85.7% of respondents reported that SUAFM Radio uses the Swahili language, which is their first language of farmers in Mvomero District, while the Swahili language was only a major element, with only 1.5% of respondents, but also described it as a normal challenge by 4.4% of respondents. This result is aligned with the study conducted by Ernest and Jacobs, (2023) farmers can access direct agricultural information in the Swahili language because it is the first language of Tanzanians. This finding means that the adoption of Swahili as the broadcast language by SUAFM Radio makes agricultural information readily accessible to the majority of farmers in Mvomero District, this is because farmers know Swahili as their mother tongue.

Table 7

Challenges Facing Farmers in Accessing SUAFM Radio Programs in Mvomero District

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Challenge	Not a challenge at all	Neutral	Minor challenge	Normal challenge	Major challenge
Poor signal reception	38(18.7%)	52.5%)	47(23.2%)	61(30.0%)	52(25.6%)
Signal loss	41(20.2%)	5(2.5%)	60(29.6%)	63(31.0%)	34(16.7%)
Lack of relevant content	116(57.1%)	20(9.9%)	43(21.2%)	16(7.9%)	8(3.9%)
Absence of program timetable	56(27.6%)	6(3.0%)	42(20.7%)	66(32.5%)	33(16.3%)
Lack of access to Radio	162(66.5%)	4(2.0%)	24(11.8%)	8(3.9%)	5(2.5%)
Inconvenient broadcast time	135(66.5%)	3(1.5%)	23(11.3%)	17(8.4%)	25(12.3%)
Language Barrier	174(85.7%)	2(1.0%)	15(7.4%)	9(4.4%)	3(1.5%)

4.5 Demographic Factors Influencing the use of SUAFM Radio for Improving Farming Practices

The model assumption was tested using the parallel lines regression assumptions in order to assess the validity of the model. The results showed that the model was valid since the proportional odds assumption appears to have held, since the significance of the Chi-Square statistic at $p > .05$.

The regression model aimed to determine how age, sex, marital status, and education level of respondents influence improved farming practices. The R-squared value of 0.031 shows that the model only explains 3.1% of the differences in better farming techniques. This is a relatively small percentage, which means that these demographic factors are not good at predicting things. The adjusted R-squared of 0.01 demonstrates that the model doesn't explain anything after taking into account the number of variables it includes. The F statistic of 1.574 with a significance value ($p = 0.18$) also shows that the model is not statistically significant overall. This means that the combination of age, sex, marital status, and education does not significantly predict better farming practices.

Table 2

Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.175a	.031	.011	.79340	.031	1.574	4	199	.183

a. Predictors: (Constant), Education level of respondent, Sex of respondent, Marital status of respondent, Age of respondent (years)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.097	.334		9.275	.000		
	Age	-.006	.004	-.111	-1.501	.135	.889	1.125
	Marital status	.190	.098	.142	1.938	.054	.909	1.100
	Sex	-.048	.112	-.030	-.431	.667	.978	1.023
	Education level	.074	.070	.076	1.063	.289	.947	1.056

a. Dependent Variable: Improved farming practices

The age of the responder resulted in a negative coefficient (B = -0.006), indicating that as the age increases, the likelihood of improved farming techniques drops significantly. However, the p-value of 0.13 suggests that this effect is not statistically significant, and we cannot definitely conclude that age has a real influence on agricultural farming practices improvement in the study area. The standardized beta value of -0.111 suggests a small negative effect, and the Variance Inflation Factor (VIF = 1.125) confirms that multicollinearity is not a problem for this variable. This means that as farmers age, they lower their information seeking to improve farming practices by adopting new farming techniques. The findings were consistent with those found by Issahaku and Awudu (2020) that adoption of new technologies among farmer is low as their age increases.

Moreover, Marital status has a positive coefficient (B = 0.190), indicating that being married is associated with a slight improvement in farming practices. The p-value is 0.05, indicating that marital status may have a significant impact. The beta value of 0.142 indicates a positive standardized effect. The findings were consistent with those of Badstue et al. (2020), who discovered that family commitment and responsibilities are the reasons for married men to seek better farming techniques to improve production and gain income for their families. This implies that needs in households motivate married families to look for better farming knowledge to get a higher income.

The regression shows a negative coefficient for sex (B = -0.048), implying that one gender may be associated with slightly less improvement in farming practices. This result is not statistically significant (p = 0.667), and the low influence is indicated by the beta value of -0.030. This result is consistent with the findings of Awoke et al. (2024), who found that contemporary farming methods that copy better practices typically mirror household-level decisions rather than an individual's gender. This means that gender has no significant influence on improved farming practices in this study because when both men and women contribute to and agree on farming strategies, gender becomes less predictive, and farming behavior reflects household-level participation rather than individual gender aspects.

The results on education level reveal a positive coefficient (B = 0.074), showing that more education is connected with better farming practices. However, the p-value of 0.289 indicates that this link is not statistically significant, and the beta value of 0.076 represents a minor influence. Although logically, one might expect education to influence adoption of better practices, this result implies that in this particular sample, education alone is not a strong predictor. Still, it may interact with other factors, like farming experience. The finding is consistent with that of Arslan et al. (2022), who discovered that educated farmers easily catch knowledge and information from the extension service. The results also integrated with Chidimbah Munthali et al. (2025), who found that the use of sustainable farming technologies is connected to those with a higher education level. This means that education helps farmers to be proactive and have more ability in digesting information, evaluating, planning, choosing the best techniques, and utilizing them for more positive results.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

SUAFM Radio serves as a useful agricultural extension tool and a significant agent of change in farming in Mvomero District. The majority of farmers are using the information obtained through radio in crop production, pest management, and the varieties of seed to be used. The use of market access and agricultural credit as topics is less widespread as a result of low coverage or complexity. SUAFM's agricultural information is often regarded as timely, closely coinciding with farming seasons and demands. However, there are instances where delays in broadcasting reduce the usefulness of the information for urgent farming needs. In addition, the limited duration of some programs restricts the depth of coverage, making it difficult for farmers to fully benefit from the content.

Farmers face several obstacles in accessing SUAFM Radio programs. The most common issues are poor signal reception, absence of a published broadcast timetable, and program timing that conflicts with farming hours. Nevertheless, language and access to radios are not significant barriers for most. Education level and marital status have been found to significantly influence the adoption of better farming practices. These demographic factors play an important role in determining how farmers in Mvomero benefit from SUAFM Radio programs. However, age and gender were not statistically significant, indicating the need to investigate additional behavioral and environmental factors.

5.2 Recommendations

The study recommends that SUAFM Radio Programs producers continue to produce practical programs on major crops like maize and rice while expanding to underrepresented topics like agricultural finance and post-harvest handling. Key agricultural topics should be aired more frequently to strengthen farmers' understanding. Doing so will also help address the diverse information needs of the farming community.

SUAFM Radio to align its programs with the farming calendar to ensure that topics follow seasonal farming activities, land preparation, planting, harvesting, and marketing to boost real-time adoption, but also to extend airtime for agricultural segments and consider repeating programs during evening hours for those unavailable during the day.

Strengthen Signal Reach by improving radio signal coverage in remote parts of Mvomero, and provide Clear Timetables by announcing schedules several times during the programs, and make sure the programs follow it. Finally, programs aimed at improving farming practices should prioritize farmer education and support married households with targeted extension services.

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