

Indigenous Language Use by Newspaper and Radio in Promoting Climate-Smart Agribusiness and Rural Development in Oyo State, Nigeria

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Abstract

Climate change threatens Nigeria's agricultural sector, making the adoption of Climate-Smart Agribusiness (CSA) practices urgent among rural farming communities. While indigenous language media are recognised as critical channels for CSA communication, no study has systematically compared the coverage and impact of Yoruba-language newspapers and radio stations in Oyo State. This study examined the extent of CSA and rural development coverage by indigenous language newspapers and radio stations, and determined which medium had a statistically significant impact on farmers' CSA adoption and rural development outcomes. Anchored on the Development Media Theory and Social Responsibility Theory, a mixed-method design comprising content analysis and survey was adopted. Three indigenous newspapers (*Alaroye*, *Irohin Yoruba*, and *Isokan Omo Oodua*) and three radio stations (*Amuludun FM*, *Ajilete FM*, and *Oke-Ogun FM*) were purposively and stratifiedly sampled. Editions and programmes were content-analysed across one year (June 2024–2025) using the Composite Week technique, yielding 288 editions and 288 radio programme-days respectively. A questionnaire administered to 300 farmers yielded 295 usable responses, analysed using frequency counts, simple percentages, and chi-square (χ^2) goodness-of-fit tests. Radio devoted a consistently greater proportion of programming to CSA and rural development than newspapers. Inferential testing confirmed radio's statistically significant advantage in perceived impact on rural development [$\chi^2(1) = 17.09$, $p < 0.001$] and CSA adoption [$\chi^2(1) = 8.14$, $p < 0.01$]. Stakeholders are urged to invest in indigenous radio programming and integrate it formally into agricultural extension policy.

Keywords: Agribusiness, Climate-Smart Practices, Indigenous Language, Newspaper, Radio, Rural Development

Introduction

The Nigerian economy is structurally dependent on agriculture, which is a major employer of labour and a significant contributor to the national Gross Domestic Product (GDP). However, this sector faces existential threats posed by escalating climate change, including unpredictable rainfall patterns, increased temperatures, and pest migration. In response, global and national efforts are pushing for the adoption of Climate-Smart Agribusiness (CSA), an integrated approach that aims to sustainably increase productivity, enhance resilience to climate change, and reduce greenhouse gas emissions (Olorunfemi, Olorunfemi & Oladele, 2020). The successful scaling of CSA innovations, such as drought-resistant crop varieties, precision farming techniques, and improved post-harvest management, depends on the efficient flow of technical information to the predominant demographic of smallholder farmers and rural entrepreneurs.

Agribusiness, according to Ogunniyi and Ojebuyi (2016), encompasses various activities including the harvesting and transportation of crops such as maize and cassava, storage and preservation of farm products like livestock and fish, and their sale, which often requires specialised skills. It also involves animal husbandry, where livestock like goats, sheep, and cattle are raised to meet rural and urban meat demands as well as the production of commodities that serve household needs and other purposes (Ogunniyi & Ojebuyi, 2016). Climate change represents one of the most significant economic and social challenges of the 21st century, profoundly impacting environmental sustainability and global food systems (Biró, Szalmáné & Németh, 2021). The agricultural sector, as both a major contributor to and victim of these changes, must prioritise adaptation and prevention to meet emission reduction targets (Biró *et al.*, 2021). In response to the growing concerns regarding the unsustainable consequences of the industrial agri-food system, the concept of Climate-Smart Agriculture (CSA) has been developed and mainstreamed within the international community (Hisano, 2022). Climate-Smart Agribusiness is an integrative framework that merges the principles of CSA – aimed at sustainably increasing productivity, enhancing resilience, and reducing/removing greenhouse gases (GHGs) – with the economic realities and supply chain considerations of the commercial agricultural sector (Noutchie, 2025).

The integration of indigenous languages in media is essential for enhancing the reach and effectiveness of climate-smart agricultural practices among rural communities in Oyo State. This approach not only fosters greater understanding of climate-smart techniques but also strengthens the cultural identity and community engagement of farming initiatives

(Adeyeye, Amodu, Oscar, Omojola, Adesina & Ben-Enukora, 2020; Saawuan, Aernyi & Ubong-Archibong Umoh, 2023). This strategy aligns with findings that emphasise the importance of using indigenous languages in agricultural programming to engage farmers effectively and promote sustainable practices (Sanusi, Taiwo & Adekilekun, 2025). By utilising indigenous languages, media can effectively bridge the gap between agricultural knowledge and local farmers, ensuring that essential information is accessible and culturally relevant to rural communities (Adeyeye & Salawu, 2025; Akin-Morakinyo & Ogunniyi, 2026). Moreover, as highlighted in previous studies, leveraging indigenous languages in agricultural radio programming can significantly enhance farmers' access to vital information regarding climate-smart practices and resources (Adeyeye *et al.*, 2020; Akin-Morakinyo & Ogunniyi, 2026).

Despite the critical need for this knowledge transfer, a significant communication barrier persists across agrarian communities in Nigeria, particularly in states like Oyo. This challenge is rooted in the high rate of rural illiteracy and the reliance of official development communication channels on non-native languages, primarily English. Communication effectiveness, particularly in development contexts, is intrinsically tied to the language used for message encoding and decoding (Servaes, as cited in Adeyeye, Salawu & Adesina, 2024).

Oyo State, one of the most agriculturally significant states in southwestern Nigeria, hosts a predominantly rural population for whom farming constitutes the primary livelihood. The state is also home to a relatively rich indigenous Yoruba-language media landscape, including long-established print titles and community radio stations that theoretically possess the capacity to serve as critical CSA information channels for rural farmers. Despite this favourable media environment, no study has specifically examined the extent to which these indigenous language media are actualising this potential in Oyo State, nor which medium, newspaper or radio, yields a greater impact on farmers' adoption of climate-smart practices and rural development outcomes (Adeyeye & Salawu, 2025; Akin-Morakinyo & Ogunniyi, 2026). This study addresses that gap.

According to Olatunji, Sanyaolu, and Akin-Morakinyo (2025), development encompasses the application of innovative solutions to address real-world challenges, driving positive societal transformation. At its core, development communication seeks to harness strategic communication approaches to foster meaningful social change. This involves a collaborative process of information sharing, gathering, and exchange, ensuring that all stakeholders, particularly those directly impacted by development initiatives, have a voice and contribute to sustainable growth (Olatunji *et al.*, 2025). Importantly, when technical information is delivered in a language foreign to the target audience, the desired

behavioural change and adoption of new practices are severely hampered (Adeyeye *et al.*, 2024).

Statement of the Problem

The attention of scholars has been drawn to the agricultural sector from various perspectives, particularly as regards the media and indigenous languages. Ojo & Koledoye (2022) analysed the indigenous language content of Nigerian print media as regards agricultural information dissemination. Also, Saawuan *et al.* (2023) explore the significant role of indigenous media in facilitating rural mobilisation for development initiatives within Nigeria.

Furthermore, Adeyeye *et al.* (2024) studied the impact of indigenous language use for agricultural radio programmes on farmers' behavioural change towards agricultural practices in Nigeria, focusing on three States (Benue, Nasarawa, and Plateau). Moreover, Adeyeye and Salawu (2025) investigated the impact of agricultural radio programmes, specifically those broadcast in indigenous languages like Hausa and Tiv, on agricultural development within North-Central Nigeria.

From the foregoing, there exists a notable gap in research examining the extent and comparative impact of indigenous language use across both print and broadcast media, specifically Yoruba-language media, in promoting climate-smart agribusiness and fostering sustainable rural development in Oyo State. Oyo State, home to one of the largest concentrations of indigenous Yoruba-language media in Nigeria and a predominantly agrarian rural population, represents a critical but understudied site for such an inquiry. By systematically comparing the coverage and perceived impact of indigenous language newspapers and radio stations, this study provides empirical evidence to support the strategic integration of indigenous language media into CSA communication and agricultural extension policy in southwestern Nigeria.

Research Questions

This study seeks to answer the following research questions:

1. What is the extent of indigenous language newspaper coverage of climate-smart agribusiness and rural development issues in Oyo State?
2. What is the extent of indigenous language radio coverage of climate-smart agribusiness and rural development issues in Oyo State?
3. What comparative impact do indigenous language newspapers and radio have on rural farmers' adoption of climate-smart agribusiness practices and rural development in Oyo State?

Indigenous Language Media

Indigenous languages serve as the “key to people’s hearts,” effectively circumventing the scepticism and resistance often associated with top-down, foreign-language policy communication (Adeyeye *et al.*, 2024). Indigenous language media encompasses all channels of communication that transmit content using a native tongue, thereby functioning as a crucial vehicle for cultural preservation, identity assertion, and community mobilisation (Mberia, as cited in Onyenakeya, 2022). In the development communication paradigm, the use of indigenous languages is not merely a preference but a necessity for achieving genuine, sustainable societal transformation (Mefalopulos, as cited in Adeyeye *et al.*, 2020).

The efficacy of development messages, particularly those relating to technical agricultural innovations, is vastly enhanced when conveyed in the mother tongue. Research consistently highlights that communication efficiency is maximised in the native language, making the process of creating awareness, facilitating learning, and instigating behavioural change significantly smoother (Adeyeye *et al.*, 2024).

Newspaper as a Medium of Agricultural and Rural Development

The history of the press in Nigeria is deeply intertwined with the Yoruba language, tracing back to the publication of *Iwe Irohin* in 1859. Historically, these newspapers were foundational in disseminating early commercial and technical information related to cash crops like cocoa and cotton, which are central to the region’s economy (Onyenakeya, 2022). In the current era of CSA and sophisticated agribusiness models, the indigenous newspaper’s strengths lie in detailed and permanent record providing a printed, detailed, and lasting record of information, especially for the more literate segment of the rural and semi-urban population, including agribusiness investors, extension agents, and co-operative leaders, who require precise data on policy, technical specifications, and market analysis (Onyenakeya, 2022).

Therefore, the indigenous newspaper is the medium for deeper, archived technical reference, policy advocacy, and targeting the entrepreneurial class driving agribusiness investment. Its synergy with indigenous radio – radio for mass, motivational awareness; newspaper for detailed, documented technical depth – creates a robust communication ecosystem essential for promoting climate-smart practices and ensuring comprehensive rural development in Oyo State.

Radio as a Medium of Agricultural and Rural Development

Radio remains arguably the most potent mass communication medium for rural development across Africa due to its universality, cost-effectiveness, and ability to reach

geographically isolated populations regardless of electricity or literacy constraints (Adeyeye *et al.*, 2020; Akin-Morakinyo & Ogunniyi, 2026). For the dissemination of CSA knowledge in Oyo State, indigenous language radio, specifically Yoruba radio programmes, assumes a primary role as the most democratic and accessible tool for agricultural extension.

The critical advantage of Yoruba radio lies in its direct link to behavioural change in agricultural practices (Adeyeye *et al.*, 2024). Studies have shown that when agricultural extension and training utilise indigenous languages, the communication of new agro-technologies, pest control methods, and climate-resilient farming skills becomes significantly less demanding for the audience (Adeyeye & Salawu, 2025). In sum, the use of Yoruba in radio programming transforms a passive listening experience into an active learning and engagement process, essential for the widespread adoption of complex CSA strategies required for food security and rural economic advancement.

Climate Change Impacts and Agribusiness Vulnerability

The imperative for Climate-Smart Agribusiness is driven by the demonstrable and increasing vulnerability of the sector to climate change. African agribusiness ecosystems, for instance, are severely threatened by multifaceted impacts such as erratic rainfall, rising temperatures, and frequent extreme weather events, which pose significant risks to food security and rural livelihoods (Noutchie, 2025).

According to Mohapatra, Han, Ariza-Montes & López-Martín (2022), an increase in temperature, high variations in rainfall, and a consistent rise in emissions negatively impacted crop yields. Specifically, cereal productivity was reduced by 26% while oilseed productivity was reduced by 35%. The vulnerability of crops was found to be a combination of exposure to temperature and heavy rainfall, sensitivity to an average operational land holding size, and adaptive indicators such as cropping intensity and agricultural machinery (Mohapatra *et al.*, 2022). These findings underscore the urgent need for a more inclusive agribusiness model that caters to small and remote farmers, facilitating the adoption of climate-smart financial innovations.

Empirical Review

Indigenous language media, including local radio broadcasts and print newspapers, serve as vital conduits for information flow to rural populations who often have limited access to national or foreign-language media. Studies confirm that indigenous media channels are powerful tools for rural mobilisation and the implementation of development programmes in Nigeria (Saawuan *et al.*, 2023). Specifically in the agricultural sector, indigenous language radio programmes have been demonstrated to play a crucial, foundational role in

supporting overall agricultural development by addressing topics relevant to local farming seasons and practices (Adeyeye & Salawu, 2025).

Also, recent empirical work by Adeyeye *et al.* (2024) confirms that exposure to agricultural programmes in local languages influences farmers' adoption of improved farming practices, but that to maximise the impact on agricultural development, these radio programmes require urgent support, specifically in the form of technical and financial partnerships with organised agricultural sector entities. This suggests that while the channel (indigenous radio) is effective, the quality and technical depth of the content, particularly for advanced topics like CSA, depends heavily on external input and collaboration.

Moreover, a content analysis conducted by Ojo and Koledoye (2022) focused on the indigenous national newspapers in Nigeria (including *Akede* and *Alaroye*), revealed a critical shortfall that newspapers, in general, featured less agricultural-related information compared to other topics, and the indigenous language papers often feature even less agricultural content than their national counterparts, while the few available agricultural information was primarily published through conventional formats such as hard news, features, and advertisements (Ojo & Koledoye, 2022). This finding raises a critical concern that if media channels with high rural penetration devote minimal space or airtime to agriculture, their potential to promote specialised knowledge, such as complex climate-smart practices, is inherently limited.

Theoretical Review

This study is driven by the Development Media Theory (DMT) and the Social Responsibility Theory (SRT), initially proposed by Siebert, Peterson, and Schramm (1956), and later elaborated by scholars on African communication like Salawu (2020). The DMT proposes that media in developing nations must abandon neutrality to support national development goals actively, while the SRT stipulates that media freedom comes with a corresponding obligation to society, compelling them to serve the public interest, particularly that of the vulnerable rural populace. These two theories form a cohesive theoretical lens for this study, proposing that the media are obligated to use the local language (DMT) to disseminate vital development information with responsibility and public interest at the core (SRT), thereby explaining the direct relationship between indigenous media communication and the intended outcome of the adoption of sustainable farming practices by rural farmers.

Methodology

The population of this study included the indigenous newspapers and radio stations in Oyo State. Also, the farmers, particularly in the rural areas, were part of the population of this study.

The research design employed in this study was a mixed-method approach combining both the quantitative and qualitative methods of data gathering, using various sampling techniques. This research design involved the use of Content Analysis and Survey methods. Multi-stage sampling techniques were used to select samples for this study. First, for the newspapers, the purposive sampling technique was used to select *Alaroye*, *Irohin Yoruba*, and *Isokan Omo Oodua* newspapers, because they are the three most prominent Yoruba-language newspapers. Second, for the radio stations, the stratified sampling technique was used to divide indigenous language radio stations into three strata: Federal-owned, State-owned and privately-owned. Thus, *Amuludun FM*, *Ajilete FM*, and *Oke-Ogun FM* were selected based on the stratified categories of Federal-owned, State-owned, and privately-owned stations accordingly.

For Content Analysis, the publications of the selected newspapers were content analysed for the period of 1 year (from June 2024 to June 2025), being the most recent period of the year. The Composite Week sampling technique was used to select the editions of the newspapers. According to Wimmer and Dominick (2011), the Composite Week sampling technique is a rotational technique in which a day of the week is picked for each selected newspaper till the total number of selected newspapers is reached, and it is rotated again till all the weeks and months of the period are completed. Therefore, because this study considered all the editions of the newspapers from Monday to Saturday, only the editions of two days of each newspaper are picked in a week, such that editions of *Alaroye* were picked only on Mondays and Thursdays, *Irohin Yoruba* editions are picked only on Tuesdays and Fridays, while editions of *Isokan Omo Oodua* are picked only on Wednesdays and Saturdays. Thus, there are two editions of each newspaper picked in a week, making eight editions for each newspaper in a month, and 96 for each newspaper in a year. Therefore, 288 newspaper editions were selected altogether.

For the radio stations, the same Composite Week sampling technique was similarly applied. Programmes broadcast by the three selected stations (*Amuludun FM*, *Ajilete FM*, and *Oke-Ogun FM*) were monitored during the same study period (June 2024–June 2025). Each station was assigned specific monitoring days on a rotational basis: *Amuludun FM* programmes were monitored on Mondays and Thursdays; *Ajilete FM* programmes were monitored on Tuesdays and Fridays; and *Oke-Ogun FM* programmes were monitored on Wednesdays and Saturdays. This yielded two monitored programme-days per station per

week, eight per month, and 96 programme-days per station over the full study year, for a total of 288 radio programme-days monitored across all three stations. Only programmes falling within agricultural, rural development, or climate-related broadcast slots were retained and coded against the established content categories.

For the Survey, the stratified sampling technique was again used to divide the Local Governments in Oyo State into three strata, namely: urban, semi-urban, and rural areas. This study focused on the rural areas, which are Afijio, Akinyele, Atiba, Atisbo, Ibarapa East, Ido, Irepo, Itesiwaju, Iwajowa, Ogo-Oluwa, Olorunsogo, Orelope, Oriire, and Surulere. Then, the simple random technique was used to select Afijio (in Ogbomosho) and Ido (in Ibadan). Furthermore, the Simple Random technique was again employed to select three communities in each rural local government, such that in Afijio, Akinmorin, Awe, and Jobele were selected; while in Ido, Araba Village, Bode-Igbo, and Eleso were selected, making six communities altogether. Finally, the Convenience sampling technique was used to select the 50 farmers from each community, making 300 farmers sampled altogether. In total, the sample size for this study was three newspapers (*Alaroye*, *Irohin Yoruba*, and *Isokan Omo Oodua* newspapers) and three radio stations (*Amuludun FM*, *Ajilete FM*, and *Oke-Ogun FM*). Also, there were 288 newspaper editions, and 300 rural farmers.

The research instruments used to gather data for this study were content categories and coding sheets for the Content Analysis method and a questionnaire for the Survey method. Also, it should be stated that questionnaire copies were administered to 300 farmers, but 295 were retrieved and analysed using frequency count, simple percentages, and the chi-square (χ^2) goodness-of-fit test. The chi-square goodness-of-fit test was employed to determine whether the observed distribution of farmers' perceived preference between radio and newspaper differed statistically from a chance or equal (50:50) distribution, thereby providing inferential statistical support for the comparative impact findings.

Content Categories

The content analysis was performed on the contents relating to climate-smart agribusiness and rural development from the three selected newspapers (*Alaroye*, *Irohin Yoruba*, and *Isokan Omo Oodua*) between June 2024 and June 2025, as well as the radio stations' programmes.

The climate-smart agribusiness contents were categorised as follows:

1. **Sustainable Crop Production:** This includes drought-resistant crops, early-maturing varieties, organic farming, and crop rotation
2. **Soil and Water Management:** This involves irrigation techniques, soil conservation, mulching, or rainwater harvesting

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3. **Agroforestry:** This includes tree planting, windbreaks, or integrating trees with crops and livestock
 4. **Livestock Management:** This involves climate-resilient breeds, improved feed, or waste management, and
 5. **Technology and Innovation:** These involve the use of modern tools, weather apps, precision agriculture, or mobile agricultural extension services

The rural development issues were categorised as follows:

1. **Economic issues:** These are access to market, profitability, access to credit, or value chain improvements
2. **Socio-cultural issues:** These include gender roles in agriculture, community-led initiatives, or the role of youth; and
3. **Policy and Governance:** These involve government policies, grants, or the role of ministries and NGOs.
4. **Operational Note on Indigenous Language Use:** All three selected newspapers, *Alaroye*, *Irohin Yoruba*, and *Isokan Omo Oodua*, exclusively publish their editorial content in the Yoruba language. Similarly, all three selected radio stations, *Amuludun FM*, *Ajilete FM*, and *Oke-Ogun FM*, broadcast entirely in Yoruba across their agricultural and rural development programming slots. Therefore, by operational definition, all content units analysed in this study constitute indigenous language (Yoruba) content. Indigenous language use is thus treated in this study as a constant characteristic of all sampled media, rather than as a variable. All thematic coverage and impact findings reported herein accordingly represent the output and influence of indigenous Yoruba-language communication. Future research may investigate more granular indigenous language features, such as dialect variation, code-switching frequency, use of indigenous proverbs and oral traditions, and linguistic accessibility across varying rural literacy levels, as distinct analytical variables.

Results and Findings

Research Question One: To what extent do the newspapers cover climate-smart agribusiness and rural development issues?

Table 1: Newspapers' Coverage of Climate-Smart Agribusiness and Rural Development Content

Theme Categories	Specific Themes	<i>Alaroye</i>	<i>Irohin Yoruba</i>	<i>Isokan Omo Oodua</i>
Climate-Smart Agribusiness	Sustainable Crop Production	5%	8%	2%
	Soil and Water Management	10%	3%	7%
	Agroforestry	4%	4%	3%
	Livestock Management	5%	3%	4%
	Technology and Innovation	4%	2%	1%
Total		28%	20%	17%
Rural Development Issues	Economic Issues	3%	7%	2%
	Socio-cultural Issues	5%	6%	5%
	Policy and Governance	9%	5%	3%
Total		17%	18%	10%
Overall Total		45%	38%	27%

Source: Content Analysis 2025

From Table 1, findings show that *Alaroye* published more climate-smart agribusiness content with 28% (focusing more on land management at 10%), over 20% content by *Irohin Yoruba* (with more focus on drought-resistant cropping at 8%), followed by *Isokan Omo Oodua* 17% (focusing more on irrigation 7%). Also, concerning the rural development contents, *Irohin Yoruba* had a total of 18% (with a major focus on market access information at 7%), followed by *Alaroye* with a total of 17% (focusing on government policies at 9%), and *Isokan Omo Oodua* with a total of 10% (mainly focused on gender involvement at 5%).

Research Question Two: To what extent does the radio cover climate-smart agribusiness and rural development issues?

Table 2: Radio Stations' Content on Climate-Smart Agribusiness and Rural Development

Theme Categories	Specific Themes	<i>Amuludun FM</i>	<i>Ajilete FM</i>	<i>Oke-Ogun FM</i>
Climate-Smart Agribusiness	Sustainable Crop Production	4%	3%	2%
	Soil and Water Management	2%	14%	3%
	Agroforestry	15%	4%	1%

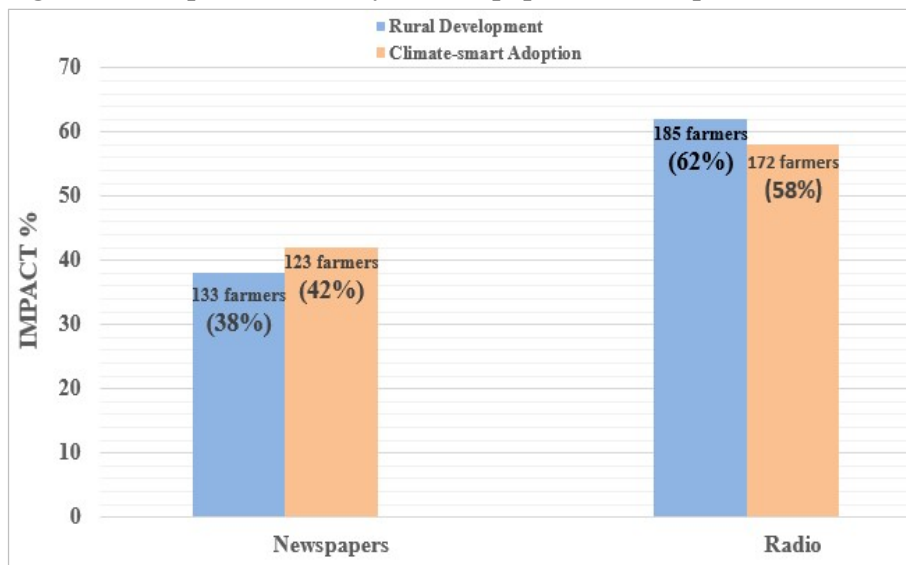
	Livestock Management	2%	2%	12%
	Technology and Innovation	2%	1%	4%
Total		25%	24%	22%
Rural Development Issues	Economic Issues	18%	8%	7%
	Socio-cultural Issues	5%	6%	12%
	Policy and Governance	7%	10%	4%
Total		30%	24%	23%
Overall Total		55%	48%	45%

Source: Content Analysis 2025

Findings in Table 2 reveal that *Amuludun* FM had the highest overall 55% content on climate-smart agribusiness (25%) and rural development content (30%) focusing mainly on agroforestry (15%) and market access information (18%) respectively, while *Ajilete* FM had an overall 48% content, at 24% climate-smart (with focus on soil management 14%), and 24% rural development content (focusing on government support 10%). The last is *Oke-Ogun* FM, having 45% total content, with 22% climate-smart (livestock management 12%), and 23% rural development (gender roles 12%).

Research Question Three: What comparative impact do *indigenous language* newspapers and radio have on farmers' adoption of climate-smart agribusiness practices and rural development in Oyo State?

Figure 1: Comparative Survey of Newspaper-Radio Impact



Source: Survey 2025

According to the findings in Figure 1, the radio had a greater overall impact compared to newspapers. Specifically, 183 farmers (62%) perceived indigenous radio content to have a higher impact on rural development, compared to 112 farmers (38%) who indicated a greater impact from newspapers. Additionally, radio's perceived impact on the adoption of climate-smart agribusiness practices was reported by 172 farmers (58%), compared to 123 farmers (42%) who attributed greater impact to newspapers.

Table 3: Chi-Square (χ^2) Goodness-of-Fit Test Results for Comparative Indigenous Language Media Impact on Rural Development and CSA Adoption (N = 295)

Dimension	Radio (%)	Newspaper (%)	$\chi^2(1)$	p-value	Decision
Rural Development Impact	183 (62%)	112 (38%)	17.09	< 0.001	Significant*
CSA Adoption Impact	172 (58%)	123 (42%)	8.14	< 0.01	Significant**

* $p < 0.001$; ** $p < 0.01$. $df = 1$ for all tests. Critical value: $\chi^2(1) = 3.841$ at $p < 0.05$.

The chi-square results in Table 3 confirm that the observed differences in farmers' preferences were not attributable to chance. For rural development impact, $\chi^2(1) = 17.09$, $p < 0.001$ significantly exceeded the critical value of 3.841, establishing a statistically highly significant preference for radio over newspapers among the sampled farmers. For CSA adoption, $\chi^2(1) = 8.14$, $p < 0.01$, also surpassed the critical value, confirming that radio's perceived superiority in driving farmers' adoption of climate-smart agribusiness practices was statistically significant. These inferential results establish, beyond descriptive observation, that indigenous language radio had a statistically significant advantage over indigenous language newspapers in both rural development impact and CSA adoption among the sampled farmers in Oyo State.

Discussion of Findings

Regarding the findings on the indigenous newspapers (research question one) presented in Table 1, the combined coverage for CSA and rural development across the three titles ranged from a high of 45% (*Alaroye*) to a low of 27% (*Isokan Omo Oodua*). The finding revealed that newspaper coverage remains below 50% for critical agricultural and development topics, which aligns with the findings by Ojo and Koledoye (2022) that indigenous language newspapers in Nigeria often feature less agricultural content compared to other topics. However, the depth of coverage on certain specific themes, such as *Alaroye's* focus on Soil and Water Management (10%) and Policy and Governance (9%), is aligned with the indigenous newspaper's role as the medium for detailed, archived technical reference (Onyenakeya, 2022). This suggests they are fulfilling their mandate

to inform the literate entrepreneurial class on policy changes and complex technical specifications.

Similarly, for the findings on research question two, presented in Table 2, the indigenous radio stations, on average, demonstrated a higher dedication to the core issues, with total development content ranging from 45% (*Oke-Ogun* FM) to 55% (*Amuludun* FM). This increased commitment validates the foundational role of radio in disseminating information in rural Africa (Adeyeye *et al.*, 2020). The thematic focus across the radio stations was also comprehensive, addressing various CSA pillars: *Amuludun* FM prioritised Agroforestry (15%) and Economic Impact/Market Access (18%); *Ajilete* FM focused on Soil and Water Management (14%); and *Oke-Ogun* FM highlighted Livestock Management (12%) and Social Impact/Gender Roles (12%). This varied and high-volume content delivery is crucial for the successful scaling of CSA innovations, as it ensures that diverse aspects of climate resilience are communicated to the predominant demographic of smallholder farmers (Olorunfemi *et al.*, 2020).

Furthermore, the third research question, focusing on the comparative impact of the two media forms on rural development and CSA adoption, yielded the most salient finding of the study (Figure 1). Radio was confirmed, through both descriptive analysis and inferential chi-square testing [$\chi^2(1) = 17.09$, $p < 0.001$ for rural development; $\chi^2(1) = 8.14$, $p < 0.01$ for CSA adoption], to have a statistically significant advantage in perceived impact on both rural development (62% compared to 38% for newspapers) and the adoption of climate-smart agribusiness practices (58% compared to 42% for newspapers). This outcome aligns with reviewed empirical findings that the use of the Yoruba language on these radio channels is the mechanism that maximises communication efficiency (Adeyeye *et al.*, 2024), translating passive listening into active learning and engagement, which is essential for behavioural change (Adeyeye *et al.*, 2020). Also, the finding that radio has a profound impact on the adoption of CSA practices (58%) strongly corroborates the conclusions of Adeyeye *et al.* (2024).

Overall, this study further affirms that the considerable reach of indigenous media extends across a wide range of issues, including the complex domain of climate-smart interventions. The higher impact on rural development (62%) also supports the consensus that indigenous media are powerful tools for rural mobilisation (Saawuan *et al.*, 2023).

These findings are consistent with the theoretical framework underpinning this study. The Development Media Theory (DMT), as elaborated for African communication contexts by Salawu (2020), prescribes that media in developing nations must actively support national development goals rather than maintain detached neutrality. The data from both radio

stations (45%–55% combined CSA and rural development content) and newspapers (27%–45%) confirm that both indigenous language media forms are, to varying degrees, fulfilling this developmental mandate. Radio's higher coverage volume and its greater perceived impact on farmers, however, identify it as the more potent vehicle for DMT-aligned agricultural communication in the Oyo State context. The Social Responsibility Theory (SRT) further illuminates these findings: the higher perceived impact of radio on rural development (62%) and CSA adoption (58%) reflects the successful execution of a socially responsible communication strategy directed at vulnerable rural publics, delivered in culturally intelligible indigenous Yoruba. Together, the DMT and SRT provide a coherent explanatory lens: indigenous language radio, by virtue of its accessibility, reach, and cultural resonance, is better positioned to discharge the development communication obligation to rural farming communities in Oyo State.

Conclusion and Recommendations

It could be concluded that while indigenous radio remains the foundational tool for mass awareness and driving the necessary behavioural change among the majority of rural farmers, indigenous newspapers serve as the essential reference source for the literate entrepreneurial class and extension agents requiring detailed, archival policy and technical information.

Based on the findings, this study recommends that media stakeholders leverage radio's demonstrated comparative impact by enhancing its role as the primary channel for agricultural behavioural change communication. Practitioners should ensure increased and consistent quality of indigenous radio content by actively pursuing stable funding and technical partnerships with organised agribusiness entities to resolve challenges and reporting inconsistencies. Government bodies and NGOs should officially prioritise indigenous radio in agricultural extension policy, strategically directing financial resources toward co-producing culturally and context-specific CSA programmes to maximise accuracy and rural reach. Indigenous newspapers, though demonstrating a comparatively lower perceived impact on the broader rural farming population, should be sustained and strengthened as archival reference channels for literate agribusiness stakeholders and extension agents. The strategic coordination of indigenous radio and newspaper in a complementary communication framework, radio for mass awareness and behavioural change, newspapers for technical archival depth, represents a potentially productive but empirically untested approach that warrants future longitudinal investigation. Future research should also shift from perceived to measured impact, empirically quantifying changes in farmer outcomes (such as yield, income, or adoption rates) resulting from media exposure, and assessing the efficacy of multi-platform convergence campaigns involving radio, print, and mobile technologies.

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