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ENHANCING INDIGENOUS LANGUAGE PROGRAMMING THROUGH ARTIFICIAL INTELLIGENCE: A QUALITATIVE STUDY OF RADIO BROADCASTING IN ABAKALIKI, NIGERIA

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Abstract
The adoption of Artificial Intelligence (AI) in broadcasting presents transformative opportunities for enhancing indigenous language programming, a critical avenue for preserving linguistic diversity and reinforcing cultural identity. This study investigates the role of AI as a tool for promoting indigenous language broadcast programmes in Ebonyi State, Nigeria. Specifically, the study examines the current state of indigenous language programming, explores potential applications of AI technologies in advancing such programmes across three selected radio stations, evaluates the effectiveness of AI-driven solutions in addressing linguistic marginalization, and assesses the challenges hindering AI adoption.Anchored on the theoretical lens of technological determinism, the study employed a qualitative research design, utilizing in-depth interviews with On-Air Personalities (OAPs) from Legacy 95.1 FM, EBBC Radio Salt 98.1 FM, and Glorious 88.3 FM. Findings revealed a strong demand for indigenous language programming; however, integration with AI technologies remains minimal due to barriers such as high implementation costs, limited technical expertise, and inadequate linguistic databases. The study recommends the development of localized AI solutions, capacity-building initiatives for media practitioners, increased funding, and government support through targeted policies and subsidies. By addressing these constraints, AI can serve as a vital instrument for fostering cultural inclusivity, mitigating linguistic marginalization, and advancing the preservation of indigenous languages within Nigerian broadcasting.

Keywords: Artificial Intelligence, Indigenous Language, Broadcasting, Cultural Identity, Ebonyi State

Introduction

Background to the study

Artificial Intelligence (AI) has emerged as a transformative force in global broadcasting, enabling media organizations to create, curate, and disseminate multilingual content with unprecedented efficiency. Technologies such as natural language processing, machine learning, and speech synthesis have facilitated real-time translation, transcription, and voice generation, thereby bridging linguistic gaps and expanding audience reach in

multilingual societies (Schmidt, 2020). International initiatives, including UNESCO's 2019 International Year of Indigenous Languages, underscore the urgency of preserving linguistic diversity through modern technologies. Broadcasters in countries such as Canada have already adopted AI-driven tools to revitalize endangered languages and integrate them into mainstream programming (UNESCO, 2019).

Africa, with its vast linguistic diversity of over 2,000 languages, faces acute challenges of language endangerment due to the dominance of colonial languages in formal communication (Simons & Fennig, 2020). AI offers significant potential to reverse this trend by fostering inclusivity and cultural preservation. Projects such as Masakhane have advanced machine translation for African languages, while AI-driven text-to-speech and subtitling tools have enhanced accessibility in radio and television (Nekoto, 2020). In Nigeria, a nation with over 500 indigenous languages (Eberhard, 2022), English continues to dominate broadcasting, marginalizing local languages. Yet, emerging initiatives, including speech-to-text technologies for Yoruba, Igbo, and Hausa, demonstrate AI's promise in promoting indigenous language programming (Oladipo, 2021).

Within Ebonyi State, this study focuses on three radio stations, Salt FM 98.1, Legacy FM 95.1, and Glorious FM 88.3, to examine the application of AI in indigenous language broadcasting. While integration remains limited due to challenges such as high costs, inadequate training, and concerns over authenticity, these stations illustrate the potential of AI to enrich indigenous language content, enhance accessibility, and contribute to cultural preservation.

Statement of problem

Indigenous languages are central to the preservation of cultural identity, the promotion of community cohesion, and the assurance of equitable access to information. Yet, in Nigeria, as in many multilingual societies, the dominance of colonial languages such as English in broadcasting has marginalized indigenous languages, threatened their vitality and limited their representation in mainstream media. Despite Nigeria's rich linguistic diversity, with over 500 indigenous languages, broadcasting continues to prioritize English, thereby excluding large segments of the population from culturally relevant programming.

Although some Nigerian studies have examined the potential of Artificial Intelligence (AI) in broadcasting and language technologies, they have not sufficiently addressed its role in promoting indigenous languages within the broadcasting sector. For example, Oladipo (2021) highlighted AI's promise in Nigeria's media landscape but provided little empirical evidence on its application to indigenous language programming. Similarly, Nekoto (2020) discussed African language machine translation but did not focus on broadcasting-specific implementations in Nigeria. This gap underscores the underutilization of AI in addressing linguistic marginalization in Nigerian broadcasting.

The problem, therefore, lies in the limited integration of AI technologies into indigenous language programming, particularly within local radio stations that serve as vital platforms for cultural preservation and grassroots communication. In Ebonyi State, stations such as Salt FM 98.1, Legacy FM 95.1, and Glorious FM 88.3 have demonstrated interest in indigenous language programming but face challenges including high implementation costs, inadequate technical expertise, insufficient linguistic databases, and concerns about the authenticity of AI-generated content. Consequently, while demand for indigenous language programmes remains strong, their reach and effectiveness are constrained.

This study seeks to fill this knowledge gap by investigating the use of AI in enhancing indigenous language programming in broadcasting, with a focus on selected radio stations in Ebonyi State. By examining current practices, potential applications, effectiveness, and challenges, the study aims to provide empirical insights into how AI can be strategically adopted to promote linguistic diversity, mitigate marginalization, and advance cultural preservation in Nigerian broadcasting.

Objective of the study

The overarching objective of this study is to investigate the potential of Artificial Intelligence (AI) as a tool for promoting indigenous language broadcast programmes in Ebonyi State, Nigeria. To achieve this, the study pursues the following specific objectives:

1. To critically examine the current state of indigenous language programming in three selected radio stations in Ebonyi State.
2. To explore the potential applications of AI technologies in enhancing indigenous language programmes within the selected radio stations.
3. To evaluate the effectiveness of AI-driven solutions in mitigating linguistic marginalization in broadcasting practices across the selected stations.
4. To assess the challenges constraining the adoption and integration of AI technologies in indigenous language programming among the selected radio stations.

Research Questions

In line with the stated objectives, the study seeks to address the following research questions:

1. What is the current state of indigenous language programming in the three selected radio stations in Ebonyi State?
2. In what ways can AI technologies be applied to promote and enhance indigenous language programmes in these stations?
3. How effective are AI-driven solutions in addressing issues of linguistic marginalization within broadcasting practices in the selected radio stations?
4. What challenges hinder the adoption and integration of AI technologies in indigenous language programming among the selected radio stations in Ebonyi State?

LITERATURE REVIEW

Artificial Intelligence in Nigerian Broadcasting: Leveraging Descript AI to Enhance Indigenous Language Radio Programmes

Artificial Intelligence (AI) has increasingly become a transformative force in global broadcasting, which enables automation in content creation, personalization, and multilingual dissemination. In Nigeria, broadcasters such as Channels TV and Arise News have begun adopting AI tools for real-time reporting, automated captioning, and audience analytics (Akinyemi & Oladapo, 2022). These innovations streamline operations and enhance engagement, yet their application to indigenous language programming remains limited.

The potential of AI to promote inclusivity lies in tools such as speech-to-text, machine translation, and voice synthesis, which can integrate Nigeria's over 500 indigenous languages into mainstream broadcasting. However, progress is constrained by inadequate digitized linguistic resources and limited technical expertise (Nekoto, 2020). While

streaming platforms like iROKOtv and Netflix Nigeria employ AI-driven recommendation systems to tailor content to user preferences (Ibrahim & Salawu, 2023), traditional radio stations face challenges in leveraging similar technologies for indigenous language programming.

Recent innovations such as Descript AI demonstrate how transcription, translation, text-based editing, and voice cloning can enhance indigenous language broadcasting. These features support documentation, accessibility, and content refinement, while also enabling continuity in programming through AI-generated voiceovers (Oyeleke & Nsude, 2024). By addressing structural challenges such as limited language support and financial constraints, AI tools can democratize content production and preserve linguistic heritage (Babalola & Adeyemo, 2023).

Anchored on technological determinism theory, this study situates AI as a driver of social and cultural change in broadcasting. Technological determinism posits that media technologies shape societal structures and cultural practices. In this context, AI adoption in Nigerian broadcasting has the potential to reconfigure linguistic hierarchies, challenge the dominance of colonial languages, and foster cultural inclusivity. Thus, examining the integration of AI into indigenous language programming provides critical insights into how technology can serve as both a catalyst for linguistic preservation and a mechanism for addressing marginalization in the Nigerian media landscape.

Impact of Artificial Intelligence on Indigenous Language Preservation

Artificial Intelligence (AI) represents a significant opportunity to preserve and promote indigenous languages in Nigerian broadcasting. By digitizing and integrating local languages into radio and television programming, AI ensures their survival in the digital era while fostering inclusivity and cultural identity. Tools such as speech recognition, machine translation, and text-to-speech systems enable broadcasters to make content accessible to diverse linguistic communities, thereby strengthening the connection between media and local audiences. Broadcasting in indigenous languages not only sustains Nigeria's cultural heritage but also reinforces identity among linguistic groups. Moreover, AI enhances efficiency in content creation and facilitates the documentation of endangered languages through digital archives, speech datasets, and corpora, which can be repurposed for educational and media use (Oladipo, 2021).

Scholars emphasize the need for comprehensive digital databases to support AI language models, including dictionaries, grammar rules, and corpora for Nigerian languages (Ayoade & Eze, 2022). Government and private sector investment in indigenous language technologies is critical, alongside training programs for broadcasters, linguists, and technology professionals. National policies mandating indigenous language content in public broadcasting and supporting community radio stations with AI-driven tools would further strengthen preservation efforts. Bridging the digital divide through expanded internet access, improved electricity supply, and affordable digital tools is essential to ensure rural communities benefit from AI innovations. Advocacy campaigns that engage local communities can foster ownership and participation in linguistic preservation, reinforcing AI's role as a catalyst for cultural sustainability.

Empirical Review

Azeem, Maranatha, Amarachi, and Lydia (2024), in their study *Corpus Intellectual Analysis of the Roles of Artificial Intelligence in News Programme Production at Select Commercial*

Radio Stations in Southwest Nigeria, examined the growing influence of AI in broadcast media. Anchored on the Diffusion of Innovation Theory and the Metamorphosis Concept, the study employed a survey design involving 122 members of the Association of Nigerian Radio Broadcasters. Findings revealed increasing awareness of AI applications, particularly in audio editing, transcription, voiceovers, program summarization, automated announcements, and news script generation. While this study highlights AI's role in enhancing efficiency in news production, the current research addresses a distinct gap by focusing on AI's cultural and linguistic applications, specifically its potential to support indigenous language programming in Ebonyi State.

Ogbuoshi (2021) investigated the adoption of AI in Nigerian broadcast media, emphasizing its gradual replacement of human and machine labour. Using a conceptual approach and grounded in technological determinism, the study observed that incomplete digital migration has hindered AI integration in Nigeria's broadcasting industry. It recommended expedited government action to achieve full digital migration, thereby unlocking broader AI opportunities. Unlike Ogbuoshi's emphasis on infrastructural barriers, the present study explores the cultural and linguistic dimensions of AI adoption, highlighting how AI can promote inclusivity and indigenous language preservation within localized broadcasting contexts.

Akudoh, Nsude, and Oyeleke (2021), in their study *Awareness of Artificial Intelligence for News Production among Journalists in Ebonyi State, Nigeria*, assessed AI awareness among 250 journalists registered under the Nigeria Union of Journalists (NUJ). Using the Diffusion of Innovation and Mediamorphosis theories, the study found widespread awareness of AI's role in news production, alongside concerns about job displacement and ethical implications. While their focus was limited to news production, the current study expands the scope to indigenous language programming, encompassing translation, speech recognition, and cultural preservation. Methodologically, whereas Akudoh et al. adopted a quantitative survey design, this study employs a qualitative approach through in-depth interviews with On-Air Personalities (OAPs) and radio listeners, thereby offering richer insights into broadcaster readiness and audience reception of AI-driven indigenous programming.

Ezaka (2017) in *Radio Programmes in Indigenous Languages and Rural Development in South-Eastern Nigeria* examined the developmental impact of indigenous language radio programmes. Using survey research with 538 respondents across three states and anchored on Development Media and Uses-and-Gratification theories, the study found that indigenous language programmes enhanced rural dwellers' knowledge and application of development messages. While Ezaka underscores the socio-developmental value of indigenous language broadcasting, it does not address how modern technologies such as AI can sustain and scale these programmes. The current study fills this gap by investigating AI-driven innovations that can enhance linguistic diversity and cultural preservation in broadcasting, with a specific focus on radio stations in Ebonyi State.

While prior studies have examined AI in news production, infrastructural barriers to adoption, and the developmental role of indigenous language programming, none have adequately explored the intersection of AI and indigenous language broadcasting. This study contributes to that discourse by situating AI as both a technological and cultural tool, capable of advancing inclusivity, linguistic preservation, and media diversity in Nigeria.

Theoretical Framework

This study is anchored in Technological Determinism Theory, originally advanced by Marshall McLuhan in the 1960s. McLuhan's seminal work, *Understanding Media: The Extensions of Man* (1964), is widely regarded as a cornerstone of the theory, introducing the influential concept that "the medium is the message." At its core, technological determinism posits that technological innovations are primary drivers of societal transformation, shaping cultural practices, social structures, and modes of communication. Media technologies are understood as extensions of human faculties that fundamentally alter how information is produced, distributed, and consumed. The theory assumes that new technologies generate new patterns of interaction and relationships, thereby restructuring the dynamics of social life.

The relevance of this theoretical lens to the present study lies in its emphasis on the transformative role of technology in communication systems. Artificial Intelligence (AI), as a contemporary technological innovation, exemplifies this dynamic by redefining the operational processes of media organizations. AI applications in broadcasting, ranging from content creation and personalization to audience engagement, illustrate how technology reshapes both production and consumption practices. In the Nigerian context, where traditional media institutions grapple with digital migration and infrastructural challenges, AI offers a critical pathway for maintaining relevance and competitiveness. By investigating the integration of AI into indigenous language broadcasting, this study aligns with the central tenets of technological determinism, which demonstrates how technological innovations not only enhance efficiency but also influence cultural preservation, inclusivity, and the broader dissemination of information in society.

Methodology

Research Design

This study adopts a qualitative research design, employing in-depth interviews to investigate the use of Artificial Intelligence (AI) in enhancing indigenous language broadcasting in Nigeria. A qualitative approach is particularly appropriate for exploring complex, context-specific, and under-researched phenomena, as it allows understanding of participants' experiences, perceptions, and challenges. In-depth interviews provide rich, detailed insights by enabling participants to articulate their perspectives in their own words and allowing the researcher to probe responses and adapt questions dynamically. This design thus facilitates the exploration of both opportunities and constraints shaping AI adoption in indigenous language programming, offering depth and flexibility that quantitative methods may not capture.

Sampling Technique

A purposive sampling technique was employed to select participants with relevant expertise and experience in indigenous language broadcasting. The sample comprised nine (9) On-Air Personalities (OAPs), with three drawn from each of the selected radio stations, Legacy FM, EBBC Salt FM, and Glorious FM. The inclusion criteria required that OAPs have at least 2 years' experience in hosting or producing indigenous language programmes, ensuring that participants had sufficient exposure to the operational realities of indigenous language broadcasting. This purposive selection strategy enabled the study to capture diverse yet comparable perspectives across the three stations, thereby enhancing the richness and relevance of the data.

Measuring Instrument

Data were collected using a semi-structured interview guide, designed to elicit detailed responses from two categories of participants: OAPs from the selected radio stations and radio listeners in Abakaliki metropolis. The guide was structured to include an introduction explaining the purpose of the study, assurances of confidentiality and voluntary participation, and consent for audio recording. For OAPs, the guide included questions on professional role, years of experience, and station affiliation, alongside thematic questions on AI adoption, indigenous language programming, and perceived challenges. For listeners, questions focused on programme accessibility, relevance, and perceptions of AI-driven innovations. The semi-structured format allowed for consistency across interviews while providing flexibility to explore emergent themes.

Method of Data Collection

Data collection involved semi-structured in-depth interviews with the two participant categories. Interviews with OAPs were conducted at the three selected radio stations, while listeners were randomly selected within Abakaliki metropolis to ensure representation of the audience base. This dual perspective of producers and consumers enabled a holistic understanding of AI's role in indigenous language broadcasting. The semi-structured format facilitated open dialogue, allowing participants to elaborate on their experiences while ensuring coverage of key thematic areas.

Validity of Instrument

To ensure content validity, the interview guide was pre-tested with a small sample of participants. Feedback from this pilot exercise was used to refine the wording, sequencing, and relevance of questions, thereby enhancing clarity and appropriateness. This iterative process ensured that the instrument was well-aligned with the study's objectives and capable of eliciting meaningful data.

Reliability of Instrument

Reliability was assessed through test-retest procedures. A pilot study involving one OAP and five radio listeners, who were not part of the main sample, was conducted to evaluate the consistency of responses. Based on the feedback, modifications were made to improve clarity and coherence. These measures enhanced the credibility, dependability, and reproducibility of the instrument, thereby strengthening the trustworthiness of the findings.

Findings from In-Depth Interviews with On-Air Personalities (OAPs)

Objective 1: Current State of Indigenous Language Programming

Across the three selected radio stations, Legacy FM 95.1, EBBC Radio Salt FM 98.1, and Glorious FM 88.3, indigenous language programming was consistently described as integral yet secondary to English-language content. At Legacy FM, daily slots are allocated to Igbo-language programming, including news, cultural segments, and talk shows, though airtime remains limited compared to English broadcasts. EBBC Radio Salt FM dedicates approximately 40% of its schedule to indigenous language content, primarily Igbo, encompassing news, talk shows, and traditional music. Glorious FM positions indigenous language programming as central to its identity, offering broadcasts in Igbo, Hausa, and Yoruba, covering news, storytelling, and religious content. Audience reception was reported as generally positive, particularly among older and rural listeners, though younger audiences demonstrated a preference for English and pidgin programming.

Objective 2: Challenges Hindering AI Adoption

None of the stations currently employs AI tools for indigenous language programming. Respondents identified several barriers: high financial costs, limited technical expertise, and the absence of AI systems capable of accurately processing local dialects. Legacy FM emphasized concerns about the ability of AI to capture linguistic nuances, while EBBC Radio Salt FM highlighted the lack of reliable Igbo language databases. Glorious FM underscored prohibitive costs and insufficient training for practitioners, noting that existing AI tools are not adequately localized. Collectively, these findings reveal systemic infrastructural, financial, and linguistic challenges that constrain AI adoption in indigenous language broadcasting.

Objective 3: Potential Applications of AI Technologies

Despite current limitations, respondents expressed optimism regarding AI's potential to enhance indigenous language programming. Legacy FM envisioned AI applications in automated translation, subtitle generation, and voiceovers, which could broaden accessibility. EBBC Radio Salt FM emphasized transcription services, bilingual translation, and AI-generated jingles as valuable innovations. Glorious FM identified AI-driven voice synthesis and audience analytics as transformative tools, capable of accelerating content production and tailoring programming to listener preferences. Across stations, respondents prioritized speech-to-text capabilities, real-time translation, and culturally sensitive AI solutions as critical features for future adoption.

Objective 4: Effectiveness of AI in Addressing Linguistic Marginalization

Respondents unanimously acknowledged AI's potential to mitigate linguistic marginalization, if technologies are accessible, reliable, and culturally attuned. Legacy FM suggested that AI could reconnect younger audiences with indigenous languages, while EBBC Radio Salt FM cautioned that success depends on developers' ability to capture linguistic nuances rather than privileging global languages. Glorious FM emphasized AI's capacity to increase visibility of indigenous languages, foster youth engagement, and support educational initiatives. Measures of success were consistently framed in terms of increased indigenous language programming, enhanced audience engagement, and balanced representation within mainstream broadcasting.

Synthesis of Findings

The interviews reveal a paradox: while indigenous language programming is valued and positively received, its scope remains limited, and AI integration is virtually absent. Financial constraints, inadequate technical expertise, and insufficient linguistic resources constitute major barriers. Yet, OAPs across the three stations articulated clear visions of how AI could transform indigenous language broadcasting through translation, transcription, voice synthesis, and audience analytics. Importantly, respondents linked AI adoption not only to operational efficiency but also to cultural preservation and inclusivity, aligning with the broader discourse on technological determinism.

Discussion of Findings

Objective 1: Current State of Indigenous Language Programming

The findings reveal that all three radio stations, Legacy FM, EBBC Salt FM, and Glorious FM, allocate portions of their daily schedules to indigenous language programming, predominantly in Igbo. These programmes include news, cultural segments, talk shows, and traditional music. However, airtime dedicated to indigenous languages remains significantly lower than that allocated to English or pidgin broadcasts. Audience feedback indicates strong appreciation among older listeners and rural communities, underscoring the cultural relevance of indigenous language programming. Conversely, younger audiences

demonstrate limited interest, gravitating towards English and pidgin content. Both On-Air Personalities (OAPs) and listeners expressed dissatisfaction with the limited variety of indigenous language programmes, noting the absence of entertainment and youth-oriented content. This reflects a gap in programming diversity that undermines broader audience engagement. This pattern mirrors Ezaka's (2017) findings that indigenous language programmes in southeastern Nigeria are culturally valued but structurally marginalized. Similarly, Azubuike and Uchegbuo (2022) reported that radio remains a key medium for ethnic identity preservation, yet indigenous content is often secondary to mainstream programming.

Objective 2: Potential Applications of AI Technologies

Respondents emphasized that AI could play a transformative role in indigenous language broadcasting by automating translations, transcriptions, and voiceovers. Such applications would streamline production processes, reduce costs, and enhance accessibility. Participants also highlighted the potential of AI-driven innovations to engage younger audiences through interactive and gamified language learning, as well as culturally enriched content. Furthermore, tools such as real-time translation and speech recognition could extend accessibility to non-native speakers and individuals with disabilities, thereby broadening the inclusivity of indigenous language programming. These expectations are consistent with Oladipo (2021), who highlighted AI's capacity to support speech recognition and machine translation for Nigerian languages. The optimism expressed by OAPs also aligns with Umar et al. (2025), who demonstrated that AI-enabled digital tools significantly enhance indigenous language preservation in Niger State.

The study's findings further resonate with Nwankwere (2022), who showed that integrating big data and linguistic technologies into radio broadcasting can strengthen indigenous language revitalization.

Objective 3: Effectiveness of AI in Addressing Linguistic Marginalization

Both OAPs and listeners agreed that AI has significant potential to mitigate linguistic marginalization by increasing the visibility and representation of indigenous languages in mainstream media. However, respondents stressed that AI-driven solutions must be culturally sensitive, preserving the nuances and identities embedded within indigenous languages. Failure to do so risks homogenization and the erosion of linguistic diversity. Thus, effectiveness is contingent not only on technological capability but also on cultural contextualization. The emphasis on cultural sensitivity echoes Michael (2023), who found that digital tools must reflect local linguistic nuances to avoid homogenization.

The study's findings also support Mbey et al. (2023), who argued that digital communication technologies including AI offer new pathways for revitalizing endangered Nigerian languages, provided that communities are involved in the design and deployment of such tools.

Objective 4: Challenges Hindering AI Adoption

The study identified several barriers to AI adoption in indigenous language broadcasting. Chief among these is the absence of AI systems tailored to local languages such as Igbo, Yoruba, and Hausa, and the high financial costs associated with acquiring and implementing AI technologies. Radio stations often prioritize operational expenses over technological investment, limiting innovation. Additionally, the lack of technical expertise among media practitioners and the absence of robust linguistic databases pose significant obstacles. These challenges highlight the structural and resource constraints that impede AI

integration in Nigerian broadcasting. These challenges are consistent with Ogbuoshi (2021), who noted that incomplete digital migration and infrastructural deficits hinder AI integration in Nigerian broadcasting. They also align with Akudoh et al. (2021), who found that although journalists in Ebonyi State are aware of AI, adoption is constrained by fears of job displacement and lack of training.

The absence of digitized corpora for Igbo and other local dialects mirrors the concerns raised by Nekoto et al. (2020) in the Masakhane project, which highlighted the scarcity of high-quality African language datasets as a major obstacle to AI development. Similarly, Umar et al. (2025) found that indigenous language preservation efforts in Niger State were limited by poor digital infrastructure and insufficient institutional support.

Conclusion

This study investigated the role of Artificial Intelligence in enhancing indigenous language programming within Nigerian broadcasting, using three radio stations in Abakaliki metropolis as case examples. Through qualitative in-depth interviews with On-Air Personalities and radio listeners, the study established that indigenous language programming remains central to cultural preservation, identity reinforcement, and audience engagement particularly among rural communities and older listeners. Despite this relevance, current programming remains limited in scope, variety, and technological innovation.

Findings reveal a growing awareness among practitioners about the potential of AI-driven tools; however, actual adoption is minimal. Financial constraints limited technical expertise, and the absence of robust linguistic databases continue to hinder meaningful integration. These barriers highlight the gap between interest and implementation, especially in smaller media markets such as Abakaliki.

The study underscores that AI holds significant promise for transforming indigenous language broadcasting. Potential applications include automated translation, transcription, speech recognition, and culturally relevant content generation. These tools can expand accessibility, support language preservation, and reduce linguistic marginalization. Measures of successful AI integration include increased airtime for indigenous languages, enhanced audience participation, and strengthened cultural identity.

The findings align with existing scholarship. Adeleke (2021) and Agyemang (2022) emphasize AI's potential in language preservation through automation and speech technologies, while Akanbi (2019) highlights AI's ability to generate culturally resonant content echoing this study's insights on engaging younger audiences. Conversely, challenges identified by Sibusiso and Nyathi (2020), such as high costs, inadequate expertise, and weak linguistic infrastructure, mirror the constraints observed in Abakaliki. Although Ogbu and Akanbi (2023) argue that AI adoption in African broadcasting is accelerating, this study demonstrates that progress remains uneven, with smaller stations lagging due to structural limitations. The findings also support Adejumo's (2020) caution that AI tools must preserve cultural nuances to avoid homogenization.

Overall, the evidence points to the need for localized, culturally sensitive AI solutions tailored to Nigeria's linguistic diversity. Collaborative efforts among media organizations, AI developers, linguists, and policymakers are essential to ensure that emerging technologies strengthen rather than dilute indigenous language broadcasting.

Recommendations

Enhancing Indigenous Language Programming: To strengthen the role of indigenous language broadcasting in Ebonyi State, radio stations should expand the scope and diversity of their programming. Beyond news and cultural segments, stations are encouraged to incorporate educational, entertainment, and youth-oriented content that resonates with local communities. Such diversification would not only broaden audience engagement but also ensure that indigenous language programmes remain relevant across demographic groups.

Integration of AI-Powered Tools: The adoption of Artificial Intelligence (AI) technologies offers significant opportunities for enhancing accessibility and efficiency in indigenous language broadcasting. Radio stations should integrate AI-powered translation and transcription tools capable of supporting local dialects such as Izzi, Ezza, Ikwo, and Afikpo Igbo. These tools would facilitate bilingual programming, improve inclusivity, and enable content to reach wider audiences, including non-native speakers and individuals with disabilities.

Pilot Implementation and Evaluation: It is recommended that the selected radio stations initiate pilot projects deploying AI-driven indigenous language programmes. These pilots should be accompanied by systematic audience feedback mechanisms to assess effectiveness in promoting linguistic inclusivity and cultural preservation. Regular evaluations should be conducted to measure the impact of AI adoption on programme quality, audience engagement, and the mitigation of linguistic marginalization.

Governmental and Institutional Support: Sustainable integration of AI into indigenous-language broadcasting requires coordinated support from government and academic institutions. The Ebonyi State Ministry of Information and the State Broadcasting Commission should provide targeted funding and establish policy frameworks that incentivize AI adoption. Furthermore, partnerships with Ebonyi State University (EBSU) and Alex Ekwueme Federal University Ndufu-Alike (AE-FUNAI) should be fostered to deliver AI literacy and capacity-building programmes for broadcasters. Such collaborations would ensure that media practitioners acquire the technical expertise necessary to effectively deploy AI tools in indigenous language programming.

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Appendix 1

IN-DEPTH INTERVIEW QUESTIONS AND ANSWERS

FOR ON-AIR PERSONALITIES (OAPS) LEGACY 95.1 FM

Objective 1: To examine the current state of indigenous language programming in Nigerian broadcasting.

Question: How often does your station air programs in indigenous languages?

Answer: "At Legacy FM, we have daily slots for indigenous language programming, particularly in Igbo. These programs include news, cultural segments, and talk shows. However, the airtime is limited compared to English programs."

Question: **What is the audience reception of these programs?**

Answer: The response has been positive, especially from older audiences and rural listeners. However, younger listeners seem to prefer English or pidgin programs."

Objective 2: To assess the challenges hindering the adoption of AI in indigenous language programming in Nigeria.

Question: Are there AI tools currently in use for indigenous language programming at your station?

Answer: "No, we haven't implemented AI tools yet. One challenge is the lack of available AI systems that support local languages like Igbo. Another is the high cost of acquiring such technologies."

Question: What are the barriers to adopting AI at your station?

Answer: "The main barriers are the financial cost and the technical expertise required. Additionally, there is a concern about whether AI systems can accurately capture the nuances of our local dialects."

Objective 3: To explore the potential applications of AI technologies in promoting indigenous language programming in broadcasting.

Question: How do you think AI can improve indigenous language programming?

Answer: "AI could help us automate translations, create subtitles, and even generate voiceovers in indigenous languages. This would save time and make the content accessible to a wider audience."

Question: What specific AI features would you like to see implemented?

Answer: "A real-time translation tool for Igbo, Yoruba, and Hausa would be ideal. Also, speech recognition in indigenous languages could revolutionize how we engage with our audience."

Objective 4: To evaluate the effectiveness of AI-driven solutions in addressing linguistic marginalization in Nigerian broadcasting.

Question: Do you think AI could address linguistic marginalization in broadcasting?

Answer: "Yes, but only if the technology is accessible and reliable. For example, AI tools could help us reach younger audiences who are losing touch with their native languages."

Question: What would be the measure of success for AI in this area?

Answer: "The success would be reflected in increased audience engagement and more balanced representation of indigenous languages in mainstream programming."

Appendix 2

IN-DEPTH INTERVIEW QUESTIONS AND ANSWERS OAPs FROM EBBC RADIO SALT 98.1 FM

Objective 1: To examine the current state of indigenous language programming in Nigerian broadcasting.

Question: How does EBBC Radio Salt FM approach indigenous language programming?

Answer: "We dedicate about 40% of our daily schedule to indigenous language content, mostly in Igbo. These include news, talk shows, and traditional music segments."

Question: What has been the feedback from your audience about these programs?

Answer: "Our audience loves it, especially in rural areas. People call in to appreciate the effort, but we also get complaints about the lack of variety in the programs."

Objective 2: To assess the challenges hindering the adoption of AI in indigenous language programming in Nigeria.

Question: Is your station using any AI tools for indigenous language programs?

Answer: "Not yet. The main issue is that most AI tools available are tailored for English and not our native languages. Also, funding is a significant limitation."

Question: What specific challenges have you encountered in adopting AI technologies?

Answer: "The technical expertise required to operate AI tools is a major challenge. We also lack reliable databases for Igbo language, which makes it difficult for AI to process and generate content accurately."

Objective 3: To explore the potential applications of AI technologies in promoting indigenous language programming in broadcasting.

Question: How do you think AI could be used to enhance your station's indigenous language programs?

Answer: "AI could help us improve transcription services, automate translation for bilingual audiences, and even generate content such as jingles in indigenous languages."

Question: What features would you prioritize in an AI tool for broadcasting?

Answer: "I'd prioritize speech-to-text capabilities for Igbo, real-time translation tools, and AI-powered audience analytics to understand what content resonates most with our listeners."

Objective 4: To evaluate the effectiveness of AI-driven solutions in addressing linguistic marginalization in Nigerian broadcasting.

Question: Do you believe AI can bridge the gap in linguistic marginalization?

Answer: "It can, but only if developers focus on creating solutions that truly understand the nuances of our languages and dialects. Otherwise, it risks being another tool that favors global languages over local ones."

Question: How would you measure the success of such AI-driven solutions?

Answer: By the increased number of programs in indigenous languages and listener feedback indicating that the programs are meeting their cultural and informational needs.

Appendix 3

IN-DEPTH INTERVIEW QUESTIONS AND ANSWERS OAPs FROM GLORIOUS 88.3 FM

Objective 1: To examine the current state of indigenous language programming in Nigerian broadcasting.

Question: What role does indigenous language programming play at Glorious FM? **Answer**: "It's a core part of our identity. We have programs in Igbo, Hausa, and Yoruba. They cover news, traditional storytelling, and even religious broadcasts."

Question: What challenges have you faced in sustaining these programs?

Answer: "One of the major challenges is finding presenters fluent in indigenous languages who can also appeal to a younger audience. Another issue is funding, as sponsors often prefer programs in English or pidgin."

Objective 2: To assess the challenges hindering the adoption of AI in indigenous language programming in Nigeria.

Question: Have you explored using AI in your station's indigenous language programs?

Answer: "We've looked into it, but the cost of implementing AI solutions is prohibitive. Also, the existing AI tools aren't sophisticated enough for our local dialects."

Question: What do you think is the biggest obstacle to AI adoption?

Answer: "Apart from cost, there's a lack of training for media practitioners to effectively use AI tools. We need more localized AI solutions that cater to our specific needs."

Objective 3: To explore the potential applications of AI technologies in promoting indigenous language programming in broadcasting.

Question: What specific AI applications would be most useful for your station?

Answer: "An AI-driven voice synthesizer for indigenous languages would be a game-changer. It could help us create more content quickly. Also, tools that analyze audience preferences could guide our programming decisions."

Question: Do you see AI as a long-term solution for indigenous language preservation?

Answer: "Absolutely, but it will require a collaborative effort between technology developers, media houses, and the government to make it effective and sustainable."

Objective 4: To evaluate the effectiveness of AI-driven solutions in addressing linguistic marginalization in Nigerian broadcasting.

Question: What impact do you think AI could have on indigenous language representation?

Answer: "If implemented well, AI could increase the visibility of indigenous languages and make them more appealing to younger generations. It could also help create content for educational purposes."

Question: What would success look like for AI in indigenous programming?

Answer: "Success would mean more indigenous language programs on air, improved listener engagement, and a renewed interest in native languages among the youth."