



## Human–AI Collaboration in Broadcast Journalism within Nigerian Public Media

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**Abstract.** The increasing adoption of artificial intelligence (AI) technologies has transformed contemporary journalism by fostering new forms of collaboration between human journalists and intelligent systems. However, empirical evidence regarding human–AI collaboration within public broadcasting institutions in developing countries remains limited. This study examines the nature, extent, and challenges of human–AI collaboration in broadcast journalism within Nigerian public media, using the News and Current Affairs Department of the Nasarawa Broadcasting Service (NBS), Lafia, as a case study. The study employed a mixed-methods research design combining quantitative and qualitative approaches. Quantitative data were collected through structured questionnaires administered to 54 journalists and production personnel, while qualitative data were obtained through in-depth interviews with six senior editorial staff and departmental managers. Data were analyzed using descriptive statistics and thematic analysis. The findings reveal that awareness of artificial intelligence technologies among journalists was relatively high, with 70.4% of respondents reporting familiarity with AI applications; however, only 29.6% had received formal AI-related training. The study further found that human–AI collaboration remained limited and task-specific, with AI primarily utilized for transcription (74.1%), translation (57.4%), audio editing (44.4%), and content summarization (38.9%), while editorial decision-making remained under human control. Organizational and professional barriers, including inadequate training (42.6%), insufficient technological infrastructure (29.6%), ethical concerns (18.5%), and limited institutional support (9.3%), significantly constrained AI integration.

*Keywords: Human–AI collaboration; broadcast journalism; artificial intelligence; public media; newsroom transformation; Nigeria*

### 1. Introduction

Artificial intelligence (AI) technologies has fundamentally transformed the contemporary communication ecosystem, particularly within journalism and media production (Arnaout et al., 2025; Kessler et al., 2025a, 2025b). Artificial intelligence is no longer perceived merely as a technological innovation but increasingly functions as an

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active collaborator in journalistic processes, influencing news gathering, content production, verification, dissemination, and audience engagement. According to Lindén (2020), AI technologies have introduced new forms of algorithmic mediation that are reshaping traditional journalistic practices and redefining the relationship between human journalists and technological systems. Similarly, Guzman (2019) argue that the emergence of automation and intelligent systems in journalism has shifted scholarly attention toward human–machine communication, where artificial intelligence serves as a collaborative agent rather than a simple production tool. Ideally, human–AI collaboration in journalism should enhance efficiency, creativity, and editorial decision-making while preserving professional autonomy, ethical accountability, and public trust.

The growing importance of AI in journalism has attracted considerable scholarly attention worldwide. Previous studies have demonstrated that AI technologies contribute significantly to newsroom transformation through automated reporting, content recommendation, audience analytics, fact-checking, transcription, and personalized news production (Chen et al., 2024; Thomson et al., 2025). H. Zhang & Long (2025) argues that AI-enabled journalism represents a paradigm shift in media production by introducing algorithmic decision-making into editorial processes. Likewise, Westlund and Ghersetti (2023) emphasize that successful integration of artificial intelligence in news organizations requires not only technological investment but also organizational adaptation and ethical governance. Recent studies have further shown that human–AI collaboration can improve newsroom efficiency and productivity while simultaneously creating challenges related to transparency, accountability, professional identity, and editorial authority (Grimme & Zabel, 2025; Parratt-Fernández et al., 2025; Steyn & Derik Steyn, 2009).

Despite these developments, the adoption and utilization of artificial intelligence in journalism remain uneven across different media systems. Existing literature suggests that while media organizations in North America, Europe, and parts of Asia have increasingly institutionalized AI technologies within newsroom operations, many media organizations in developing countries continue to experience infrastructural, organizational, and professional barriers to AI adoption (De Cooker et al., 2025; Li & Wang, 2025). In Africa, studies by Danso et al. (2025) indicate that journalists generally possess conceptual awareness of AI technologies but often lack institutional support, technical competencies, and organizational frameworks necessary for effective implementation. Similarly, research conducted in Nigeria has shown that although journalists demonstrate growing awareness of artificial intelligence, actual utilization remains limited due to inadequate infrastructure, insufficient training opportunities, financial constraints, and concerns about professional displacement (Etumnu et al., 2024; Uwalaka et al., 2025; Uwalaka & Amadi, 2023).

Within the context of Nigerian public broadcasting, the integration of artificial intelligence technologies presents both opportunities and challenges. Public media institutions are increasingly confronted with pressures to modernize newsroom operations and adapt to emerging digital communication environments while simultaneously maintaining journalistic integrity, public accountability, and institutional sustainability. However, empirical evidence regarding how human journalists interact with AI technologies within Nigerian public broadcasting institutions remains scarce. Existing studies have predominantly focused on AI adoption in commercial media organizations, digital journalism platforms, and technologically advanced news ecosystems (Evens & Smith, 2024; Vanninen et al., 2023). Consequently, limited attention



has been given to understanding the dynamics of human–AI collaboration within public broadcasting institutions operating in resource-constrained media environments.

This study addresses several important gaps in the existing literature. First, previous studies have largely conceptualized AI adoption in journalism as a process of technological implementation rather than as a collaborative communication process involving interactions between human actors and intelligent systems. Second, empirical investigations of AI-enabled journalism have predominantly focused on Western media organizations, leaving public broadcasting institutions in developing countries significantly underrepresented in the literature. Third, existing scholarship has rarely integrated organizational and individual-level theoretical perspectives to explain how institutional conditions and journalists' perceptions jointly influence AI adoption and utilization. Consequently, there remains insufficient understanding of how organizational readiness, technological perceptions, and professional practices interact to shape human–AI collaboration in broadcast journalism within African public media contexts.

The novelty of this study lies in its conceptualization of artificial intelligence not merely as an automation technology but as a collaborative communication agent within broadcast journalism practices. Specifically, this study contributes to the emerging field of AI-mediated communication by examining the interaction between journalists and AI technologies within a public broadcasting environment characterized by infrastructural and institutional constraints. Furthermore, the study integrates Rogers' Diffusion of Innovations Theory (Uskali *et al.*, 2020) and Davis's Technology Acceptance Model (Galatsopoulou *et al.*, 2022; Mambwe, 2025) to provide a multidimensional explanation of how organizational factors and individual perceptions influence human–AI collaboration in broadcast journalism. By focusing on a Nigerian public broadcasting institution, this study also contributes empirical evidence from the Global South, thereby extending existing scholarship on newsroom transformation beyond dominant Western contexts (English, 2016; Kusumawati, 2023; S. Zhang & Feng, 2019).

The significance of this study is both theoretical and practical. Theoretically, the study advances scholarly discussions on AI-mediated communication, human–machine communication, digital journalism, and newsroom transformation by providing empirical evidence from an underrepresented media environment. Practically, the findings are expected to provide insights for policymakers, media managers, journalists, and communication scholars regarding effective strategies for integrating artificial intelligence into public media organizations while maintaining editorial integrity and professional accountability. Accordingly, the primary objective of this study is to examine the nature and extent of human–AI collaboration in broadcast journalism within Nigerian public media. Specifically, the study seeks to investigate journalists' awareness of AI technologies, assess the extent of AI utilization in newsroom operations, identify opportunities and challenges associated with human–AI collaboration, and examine the organizational and individual factors influencing artificial intelligence adoption within the News and Current Affairs Department of the Nasarawa Broadcasting Service, Lafia.

## 2. Method

This study adopted a mixed-methods research design to examine the dynamics of human–AI collaboration in broadcast journalism within Nigerian public media (Adnan, 2025; de-Lima-Santos & Mesquita, 2023; Yang, 2025). The mixed-methods approach was considered appropriate because it enabled the integration of quantitative and qualitative data to provide a comprehensive understanding of journalists' experiences, perceptions,



and practices regarding the adoption and utilization of artificial intelligence in newsroom operations. According to Robinson (2007), mixed-methods research facilitates methodological triangulation by combining statistical analysis with contextual interpretation, thereby enhancing the validity and depth of findings. In the context of this study, the quantitative component was employed to assess levels of awareness, utilization patterns, and perceived challenges associated with AI technologies, while the qualitative component explored organizational experiences, professional perceptions, and institutional factors influencing human–AI collaboration in broadcast journalism.

The study was conducted at the News and Current Affairs Department of the Nasarawa Broadcasting Service (NBS), Lafia, Nigeria. NBS is a state-owned public broadcasting organization responsible for producing and disseminating news and current affairs programs to diverse audiences across Nasarawa State. The department comprises three operational units: the Editorial Unit, the Current Affairs Unit, and the Hausa Language Unit, all of which play critical roles in news gathering, production, editing, translation, and broadcasting. The study population consisted of all sixty (60) professional staff members working within these units, including journalists, editors, producers, broadcasters, and technical personnel. Given the relatively small and accessible population, a census sampling technique was adopted to ensure comprehensive representation and reduce sampling bias.

Data collection involved both quantitative and qualitative instruments. The quantitative data were collected through a structured questionnaire administered to fifty-four (54) respondents who were available during the data collection period. The questionnaire consisted of closed-ended and Likert-scale items designed to measure respondents' awareness of artificial intelligence technologies, extent of AI utilization, perceived opportunities, and challenges affecting human–AI collaboration in newsroom operations. In addition, qualitative data were obtained through six (6) semi-structured in-depth interviews conducted with heads of operational units and senior editorial personnel. The purposive selection of key informants was intended to capture managerial perspectives and professional experiences relating to AI adoption, newsroom transformation, and organizational readiness for technological innovation. The interview sessions were audio-recorded with participants' consent and subsequently transcribed for analysis.

To ensure the validity and reliability of the research instruments, the questionnaire and interview guide underwent expert review by specialists in communication studies and information technology. Their recommendations contributed to improvements in clarity, content relevance, and alignment with the study objectives. Furthermore, a pilot study involving ten journalists from a neighboring broadcasting station was conducted to evaluate the internal consistency of the questionnaire. The reliability analysis produced a Cronbach's Alpha coefficient of 0.82, indicating satisfactory reliability and internal consistency of the measurement instrument (Pallant, 2020). Ethical considerations were also observed throughout the study, including informed consent, voluntary participation, anonymity, and confidentiality of respondents' information.

The analysis of data was conducted using both quantitative and qualitative analytical techniques. Quantitative data obtained from the questionnaires were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistical techniques, including frequencies, percentages, and mean scores, were employed to summarize respondents' perceptions and experiences regarding AI utilization in broadcast journalism. Meanwhile, qualitative data derived from the



interviews were analyzed thematically using the framework proposed by Braun & Clarke (2006), involving data familiarization, coding, theme development, review, and interpretation. The integration of quantitative and qualitative findings through methodological triangulation enabled a comprehensive analysis of the organizational, technological, and human dimensions of AI adoption and human–AI collaboration within Nigerian public media institutions.

### 3. Results and Discussion

This section presents the findings of the study based on data collected from 54 journalists and production personnel and six key informants from the News and Current Affairs Department of the Nasarawa Broadcasting Service (NBS), Lafia, Nigeria. The findings are organized according to the study objectives and focus on the nature and extent of human–AI collaboration in broadcast journalism within Nigerian public media. Quantitative findings are presented using frequencies and percentages to illustrate patterns of awareness, utilization, and challenges associated with artificial intelligence adoption, while qualitative findings derived from in-depth interviews provide contextual explanations and professional insights into journalists' experiences with AI technologies. The integration of both data strands enables a comprehensive understanding of how organizational, technological, and human factors influence the development of human–AI collaboration in public broadcasting environments.

#### 3.1. Human–AI Collaboration Awareness among Journalists in Nigerian Public Media

The findings revealed that awareness of artificial intelligence technologies among journalists and production personnel at the News and Current Affairs Department of the Nasarawa Broadcasting Service (NBS) was relatively high. Of the 54 respondents surveyed, 38 respondents (70.4%) indicated that they were familiar with at least one artificial intelligence application relevant to journalism practice, while 16 respondents (29.6%) reported limited or no familiarity with AI technologies. The findings suggest that exposure to digital technologies and global media trends has contributed significantly to journalists' awareness of AI applications in news production. Respondents identified several AI-powered tools that they had encountered or utilized, including ChatGPT, automated transcription software, machine translation applications, AI-assisted audio editing software, and content summarization tools. However, despite this relatively high level of awareness, familiarity with AI technologies did not necessarily translate into professional competence or institutional adoption within newsroom operations.

Further analysis of respondents' awareness levels revealed variations in the types of AI technologies recognized by journalists. Among the respondents who indicated familiarity with AI technologies, 32 respondents (59.3%) identified ChatGPT and other generative AI platforms as the most recognizable AI applications in journalism. This was followed by speech-to-text transcription software identified by 29 respondents (53.7%), automated translation applications identified by 25 respondents (46.3%), AI-powered audio editing tools identified by 18 respondents (33.3%), and AI-supported data analytics applications identified by only 11 respondents (20.4%). These findings suggest that journalists' awareness of artificial intelligence technologies remains concentrated around highly accessible consumer-oriented AI platforms rather than specialized newsroom technologies. Consequently, journalists' understanding of AI applications appears to be influenced more by individual digital exposure and public discourse surrounding generative AI than by professional newsroom experiences.



Despite the relatively high level of AI awareness, the findings demonstrated a significant gap between awareness and institutional preparedness for human–AI collaboration. Only 16 respondents (29.6%) reported having participated in any form of formal training, workshop, or professional development program related to artificial intelligence in journalism. Conversely, 38 respondents (70.4%) indicated that they had never received institutional training on AI applications in media practice. Furthermore, 41 respondents (75.9%) stated that their knowledge of AI technologies had been acquired independently through social media platforms, online tutorials, webinars, and personal experimentation rather than through organizational capacity-building initiatives. These findings suggest that awareness of artificial intelligence among journalists in Nigerian public media remains predominantly self-driven and lacks institutional support mechanisms necessary for sustainable technological integration.

The qualitative findings provided additional insights into the nature of journalists' awareness of artificial intelligence technologies. Interview participants consistently emphasized that their understanding of AI remained largely conceptual rather than operational. One senior editor in the Editorial Unit observed:

*“Most of our younger staff members have heard about ChatGPT and AI transcription tools through social media and online platforms, but very few of us have received any professional training on how these technologies can be integrated into our newsroom operations.”*

Similarly, a unit head in the Current Affairs Department explained:

*“We understand that artificial intelligence is transforming journalism globally, but our institution has not yet developed a formal framework for introducing these technologies into our everyday news production activities.”*

Another senior producer added:

*“The awareness is there because everyone talks about artificial intelligence now, but awareness alone does not mean we are ready to work collaboratively with these technologies in our newsroom.”*

These qualitative findings demonstrate that journalists' awareness of AI technologies is largely informed by external technological discourse rather than by structured organizational learning processes.

The findings indicate that although awareness of artificial intelligence technologies among journalists in Nigerian public media is relatively high, this awareness remains predominantly superficial and insufficiently institutionalized. The observed discrepancy between technological awareness and organizational readiness highlights an important challenge for human–AI collaboration within public broadcasting institutions. Effective integration of artificial intelligence in journalism requires not only awareness of technological innovations but also professional competencies, institutional support structures, organizational policies, and strategic investment in human capital development. Consequently, the findings suggest that human–AI collaboration within Nigerian public broadcasting currently exists at an exploratory stage characterized by high awareness but low operational preparedness.

Table 1 Journalists' Awareness of Artificial Intelligence Technologies in Broadcast Journalism (N = 54)

Variable	Frequency (f)	Percentage (%)
Familiar with AI technologies	38	70.4
Not familiar with AI technologies	16	29.6



Familiar with ChatGPT/Generative AI	32	59.3
Familiar with speech-to-text applications	29	53.7
Familiar with machine translation tools	25	46.3
Familiar with AI audio editing tools	18	33.3
Familiar with AI data analytics tools	11	20.4
Received formal AI training	16	29.6
Never received AI training	38	70.4
Acquired AI knowledge independently	41	75.9

*Source: Field Survey Data, 2025.*

Table 1 demonstrates that journalists' awareness of artificial intelligence technologies in Nigerian public media is relatively high, with over two-thirds of respondents reporting familiarity with at least one AI application relevant to journalism practice. However, the findings also reveal a substantial gap between awareness and professional preparedness, as only a minority of respondents had received formal training on AI technologies. The predominance of self-directed learning indicates that awareness of artificial intelligence among journalists is largely driven by external digital exposure rather than institutional capacity-building efforts. This disparity suggests that while Nigerian public media professionals recognize the transformative potential of artificial intelligence, the absence of organizational support mechanisms continues to constrain the development of effective human–AI collaboration in broadcast journalism.

### *3.2. Human–AI Collaboration in News Production Remains Limited and Task-Specific*

The findings revealed that the actual utilization of artificial intelligence technologies in broadcast journalism at the Nasarawa Broadcasting Service (NBS) remains relatively limited despite the high level of awareness reported among journalists and production personnel. Of the 54 respondents surveyed, 21 respondents (38.9%) indicated that they utilized AI technologies minimally in their professional activities, while 11 respondents (20.4%) reported no utilization of AI applications in newsroom operations. Conversely, only 9 respondents (16.7%) reported extensive utilization of AI technologies, whereas 13 respondents (24.0%) described their level of utilization as moderate. These findings suggest that the transition from awareness to practical implementation of AI technologies remains constrained within Nigerian public broadcasting institutions. The relatively low proportion of journalists actively utilizing AI tools demonstrates that human–AI collaboration within the newsroom remains in its developmental phase and has yet to become an integral component of journalistic workflows.

Further examination of the types of AI applications used by journalists revealed that artificial intelligence technologies are primarily employed to support routine operational activities rather than core editorial functions. Among respondents who reported using AI technologies, transcription services represented the most frequently utilized application, with 40 respondents (74.1%) indicating that they employed speech-to-text applications to process interviews and recorded materials. This was followed by machine translation tools used by 31 respondents (57.4%), AI-assisted audio editing applications used by 24 respondents (44.4%), and content summarization tools used by 21 respondents (38.9%). However, the findings also revealed significantly lower levels of utilization for more advanced journalistic applications, such as AI-assisted data analysis (18.5%), automated fact-checking systems (14.8%), audience analytics (13.0%), and automated news writing applications (9.3%). These findings indicate that AI technologies within Nigerian public



broadcasting continue to function predominantly as productivity-enhancing tools rather than as integrated editorial partners.

The findings further demonstrated that human–AI collaboration in newsroom operations remains highly task-specific and supplementary in nature. Respondents reported that AI technologies were most frequently employed during pre-production and post-production processes rather than during editorial decision-making activities. Specifically, 37 respondents (68.5%) reported using AI technologies during information processing and preparation stages, while 28 respondents (51.9%) utilized AI applications during audio editing and production activities. In contrast, only 12 respondents (22.2%) indicated that AI technologies contributed to news verification processes, and merely 7 respondents (13.0%) reported any use of AI tools during editorial decision-making or news selection activities. These findings suggest that journalists continue to maintain strong professional control over core journalistic functions, thereby limiting the scope of human–AI collaboration to supportive and operational tasks.

Qualitative findings corroborated the quantitative results by demonstrating that human–AI collaboration in the newsroom remains largely informal and experimental. Interview participants consistently emphasized that AI technologies currently serve as supplementary tools rather than integrated newsroom systems. One senior producer in the Hausa Language Unit explained:

*“We occasionally use mobile applications for translation and automatic transcription, especially when we need to process interviews quickly, but these tools are not officially integrated into our newsroom workflow.”*

Similarly, a senior reporter observed:

*“Artificial intelligence currently assists us with simple production tasks, but all editorial decisions, verification processes, and news judgments remain entirely under human control.”*

Another senior editor noted:

*“We view artificial intelligence as a support mechanism rather than a replacement for professional journalism. The technology helps us save time, but the responsibility for accuracy, ethics, and editorial judgment still belongs to journalists.”*

These interview findings reinforce the notion that journalists perceive AI technologies primarily as assistive technologies designed to improve operational efficiency rather than autonomous agents capable of participating in editorial processes.

The findings indicate that human–AI collaboration within Nigerian public broadcasting remains characterized by limited institutionalization, task-specific implementation, and strong human oversight. The current pattern of AI utilization reflects an “assistive collaboration model,” in which artificial intelligence technologies support routine operational tasks while human journalists retain authority over editorial decisions and professional judgment. This finding represents an important contribution to the emerging scholarship on AI-mediated communication because it demonstrates that human–AI collaboration in resource-constrained media environments evolves incrementally through supplementary interactions rather than through comprehensive newsroom automation. Consequently, the effective development of human–AI collaboration in Nigerian public media requires not only technological investment but also organizational transformation, professional training, and institutional frameworks capable of facilitating deeper integration of artificial intelligence into journalistic practice.

Table 2 Extent and Areas of Human–AI Collaboration in Broadcast Journalism at NBS (N = 54)



Variables	Frequency (f)	Percentage (%)
<b>Level of AI Utilization</b>		
High utilization	9	16.7
Moderate utilization	13	24.0
Minimal utilization	21	38.9
No utilization	11	20.4
<b>AI Applications Utilized</b>		
Speech-to-text transcription	40	74.1
Machine translation	31	57.4
Audio editing applications	24	44.4
Content summarization	21	38.9
Data analytics	10	18.5
Automated fact-checking	8	14.8
Audience analytics	7	13.0
Automated news writing	5	9.3
<b>Newsroom Activities Supported by AI</b>		
Information processing	37	68.5
Audio production/editing	28	51.9
Translation activities	25	46.3
News verification	12	22.2
Editorial decision-making	7	13.0

*Source: Field Survey Data, 2025.*

Table 2 demonstrates that the utilization of artificial intelligence technologies within Nigerian public broadcasting remains limited, uneven, and concentrated in specific operational activities. The findings reveal that AI technologies are primarily employed to support administrative and production-related tasks such as transcription, translation, and audio editing, while their application in editorial decision-making, verification, and advanced newsroom analytics remains minimal. This distribution indicates that human–AI collaboration at the Nasarawa Broadcasting Service follows an assistive rather than integrative model of technological adoption, whereby artificial intelligence serves as a complementary tool that enhances productivity without fundamentally transforming existing journalistic workflows. The persistence of strong human oversight in editorial functions further suggests that public broadcasting institutions continue to prioritize professional judgment, ethical accountability, and editorial autonomy despite increasing exposure to artificial intelligence technologies.

### *3.3. Organizational and Professional Constraints Limit Human–AI Collaboration*

The findings revealed that the implementation of human–AI collaboration in broadcast journalism within the Nasarawa Broadcasting Service (NBS) is constrained by multiple organizational and professional barriers. Among the 54 respondents surveyed, the most significant challenge identified was the lack of technical skills and professional training related to artificial intelligence technologies, reported by 23 respondents (42.6%). This was followed by inadequate technological infrastructure, identified by 16 respondents (29.6%), ethical and professional concerns associated with editorial autonomy and employment security, reported by 10 respondents (18.5%), and limited institutional support and organizational commitment, identified by 5 respondents (9.3%).



These findings indicate that barriers to AI adoption in public broadcasting extend beyond technological availability and involve broader organizational, institutional, and professional factors that influence journalists' willingness and ability to collaborate effectively with artificial intelligence systems.

The shortage of technical competencies and formal training emerged as the most significant obstacle to human–AI collaboration in the newsroom. Although many journalists demonstrated awareness of AI technologies, they frequently lacked the practical skills required to integrate these technologies into professional workflows. Specifically, 39 respondents (72.2%) reported low levels of confidence in using AI-assisted journalism tools, while only 15 respondents (27.8%) considered themselves capable of independently utilizing AI technologies in news production activities. Furthermore, 43 respondents (79.6%) indicated that their organization had never organized formal training programs, workshops, or capacity-building initiatives related to artificial intelligence in journalism. These findings suggest that journalists' exposure to AI technologies remains largely informal and self-directed. One senior editor explained:

*"We are willing to adopt artificial intelligence technologies, but our newsroom infrastructure is outdated, and we do not have access to the necessary software, technical support, or professional training."*

Similarly, another respondent noted:

*"Most journalists learn about AI through personal experimentation and online tutorials because there is currently no institutional training framework available within our organization."*

The findings further demonstrated that infrastructural limitations continue to constrain effective human–AI collaboration within public broadcasting institutions. Among the respondents, 37 respondents (68.5%) indicated that inadequate internet connectivity, outdated computer systems, and insufficient software access significantly hindered the adoption of AI technologies. Additionally, 31 respondents (57.4%) reported that their newsroom lacked the financial resources required to procure advanced AI applications and digital production technologies. Several interview participants emphasized that existing technological infrastructure was designed primarily for conventional broadcasting rather than AI-enabled journalism. One departmental manager explained:

*"Most of our newsroom facilities were established long before artificial intelligence became relevant to journalism. We still struggle with internet connectivity, hardware maintenance, and software accessibility."*

Another interview participant stated:

*"Even when journalists are interested in using artificial intelligence, they often cannot access the required applications because our technological infrastructure is inadequate."*

These findings indicate that technological readiness remains a critical prerequisite for effective human–AI collaboration within public media institutions.

Professional and ethical concerns also emerged as significant barriers to human–AI collaboration. The findings revealed that 29 respondents (53.7%) expressed concerns regarding the potential impact of artificial intelligence on job security, while 26 respondents (48.1%) were concerned about the implications of AI technologies for editorial independence and professional autonomy. Additionally, 24 respondents (44.4%) reported concerns regarding the accuracy, credibility, and ethical accountability of AI-generated content. Interview participants repeatedly emphasized that journalism involves



professional judgment, ethical reasoning, and contextual understanding that cannot easily be delegated to technological systems. One senior reporter observed:

*“Many journalists fear that if artificial intelligence becomes fully integrated into broadcasting, younger professionals may eventually lose employment opportunities or experience reduced professional relevance.”*

Likewise, another editor explained:

*“Artificial intelligence can support journalistic work, but journalists remain responsible for ensuring accuracy, ethics, fairness, and public accountability.”*

These findings suggest that concerns surrounding professional identity, ethical responsibility, and editorial authority continue to shape journalists' perceptions of human–AI collaboration within broadcast journalism.

Another important barrier identified by the study was the absence of institutional policies and governance frameworks regulating the use of artificial intelligence in public media organizations. The findings revealed that 44 respondents (81.5%) were unaware of any official organizational guidelines concerning the adoption, regulation, or ethical use of artificial intelligence technologies within their newsroom. Furthermore, 40 respondents (74.1%) indicated that their organizations lacked strategic plans for integrating AI into journalistic practice. Interview findings strongly reinforced this concern. One departmental manager explained:

*“At present, there are no official guidelines or ethical frameworks regulating how artificial intelligence should be used within our newsroom operations.”*

Another participant added:

*“Without institutional policies and management commitment, artificial intelligence adoption will remain fragmented and experimental.”*

These findings demonstrate that barriers to human–AI collaboration within Nigerian public broadcasting extend beyond technological constraints and involve broader issues of organizational readiness, professional culture, institutional governance, and ethical accountability. The findings suggest that effective AI integration requires not only technological investment but also strategic organizational transformation, professional capacity building, policy development, and institutional commitment to fostering sustainable human–AI collaboration in journalism.

Table 3 Organizational and Professional Constraints Affecting Human–AI Collaboration in Nigerian Public Media (N = 54)

Constraints	Frequency (f)	Percentage (%)
Lack of training and technical expertise	23	42.6
Inadequate technological infrastructure	16	29.6
Ethical and professional concerns	10	18.5
Limited institutional support	5	9.3
Low confidence in using AI technologies	39	72.2
Absence of formal AI training programmes	43	79.6
Inadequate internet and digital infrastructure	37	68.5
Financial constraints and limited software access	31	57.4
Concerns about job security	29	53.7
Concerns about editorial autonomy	26	48.1
Concerns about AI content credibility	24	44.4
Lack of institutional AI policies	44	81.5



Absence of strategic AI implementation plans	40	74.1
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*Source: Field Survey Data, 2025.*

Table 3 presents the major organizational and professional barriers affecting human–AI collaboration within the Nasarawa Broadcasting Service. The findings demonstrate that the absence of institutional governance mechanisms constitutes the most significant barrier, with 81.5% of respondents reporting a lack of official policies regulating artificial intelligence adoption in newsroom operations. Similarly, the absence of formal training programmes (79.6%) and strategic implementation plans (74.1%) indicates low levels of organizational readiness for AI integration. At the individual level, low technological confidence among journalists (72.2%) and concerns regarding professional displacement (53.7%) further constrain effective human–AI collaboration. Moreover, infrastructural deficiencies, including poor internet connectivity and limited access to digital technologies (68.5%), continue to impede the practical implementation of AI-assisted journalism. Collectively, these findings suggest that barriers to human–AI collaboration in Nigerian public media are multidimensional, encompassing technological, organizational, professional, ethical, and institutional factors. Consequently, successful integration of artificial intelligence into broadcast journalism requires comprehensive organizational transformation strategies that simultaneously address technological capacity, human capital development, institutional governance, and professional adaptation.

#### *3.4. Discussion: Human–AI Collaboration and Organizational Readiness in Broadcast Journalism*

The findings of this study demonstrate that awareness of artificial intelligence technologies among journalists in Nigerian public media is relatively high, yet such awareness has not translated into widespread institutional adoption and effective human–AI collaboration. This finding supports Yu (2022) Diffusion of Innovations Theory, which posits that awareness or knowledge of an innovation represents only the initial stage in the adoption process and does not necessarily guarantee implementation. According to Lund (2025), successful diffusion requires progression through persuasion, decision, implementation, and confirmation stages. The finding that 70.4% of respondents were familiar with AI technologies, while only 29.6% had received formal training, suggests that journalists within Nigerian public broadcasting remain at the knowledge and persuasion stages of innovation diffusion. This finding corroborates previous studies by Umejei et al. (2025), who found that African journalists increasingly recognize the importance of artificial intelligence but continue to face institutional barriers that prevent effective technological adoption. Similarly, Priyanka Kumari (2025) observed that awareness of AI technologies has expanded rapidly across global newsrooms, although the degree of organizational implementation remains highly uneven across different media systems.

The findings further reveal that journalists' awareness of artificial intelligence technologies is predominantly shaped by individual exposure to digital technologies rather than institutional learning processes. This finding aligns with the Technology Acceptance Model proposed by Davis (Singer & Broersma, 2020; Zaineldeen et al., 2020), which argues that individuals' acceptance of technological innovations depends significantly on their perceptions, experiences, and interactions with technological systems. The predominance of self-directed learning identified in this study indicates that journalists develop positive perceptions of artificial intelligence through external



technological environments rather than organizational socialization. This finding also supports the argument of Guzman & Lewis (2020), who contend that emerging forms of human-machine communication increasingly occur through informal interactions between human actors and intelligent systems. Consequently, the development of human-AI collaboration within journalism requires not only technological awareness but also organizational mechanisms that facilitate knowledge acquisition, professional adaptation, and technological confidence.

Another important finding of this study is that human-AI collaboration in Nigerian public broadcasting remains limited and largely task-specific. Artificial intelligence technologies were predominantly utilized for transcription, translation, audio editing, and content summarization, while editorial decision-making and journalistic judgment remained under human control. This finding supports the conceptualization of AI-assisted journalism proposed by Murru & Carlo (2025), who argues that artificial intelligence currently functions primarily as an augmentative rather than a replacement technology in journalism practice. Similarly, Sánchez-García *et al.* (2023) observed that automated journalism technologies tend to complement existing journalistic routines rather than fundamentally displace professional journalists. The predominance of AI applications in routine operational activities identified in this study demonstrates that public broadcasting institutions continue to prioritize human editorial authority, professional expertise, and ethical accountability. This finding also resonates with Ruotsalainen *et al.* (2023) argues that the future of journalism is likely to involve collaborative interactions between human intelligence and artificial intelligence rather than complete technological substitution.

The finding that human-AI collaboration remains supplementary rather than integrated further supports contemporary theories of human-machine communication. According to Guzman (2019), artificial intelligence should be understood not merely as a technological artifact but as a communicative agent that participates in human social and professional interactions. However, the findings of this study indicate that journalists within Nigerian public media continue to perceive artificial intelligence primarily as a productivity-enhancing tool rather than as a collaborative partner in editorial processes. This perception may be attributed to institutional constraints, technological limitations, and professional norms governing journalistic practice. Similarly, Westlund & Gherstet (2015) argue that the successful integration of artificial intelligence in news organizations depends on organizational capacity, technological infrastructure, and institutional willingness to redefine professional workflows. Therefore, the limited nature of human-AI collaboration identified in this study reflects both technological constraints and broader organizational resistance to newsroom transformation.

The study also revealed that organizational and professional barriers significantly constrain the development of human-AI collaboration within Nigerian public media institutions. The findings regarding inadequate training, limited technological infrastructure, ethical concerns, and weak institutional support are consistent with Yu (2022) assertion that organizational readiness plays a critical role in the diffusion of innovations. Perceived usefulness and perceived ease of use directly influence individuals' willingness to adopt new technologies. The low levels of technological confidence reported by respondents indicate that both organizational and psychological barriers continue to impede AI adoption. These findings corroborate those of Laaksonen *et al.* (2024), who observed that media organizations in developing countries often face structural constraints that limit the implementation of artificial intelligence technologies.



Likewise, Duru & Agbasimelo (2024) argues that technological innovations in journalism frequently encounter resistance due to concerns about professional identity, algorithmic accountability, and ethical responsibility.

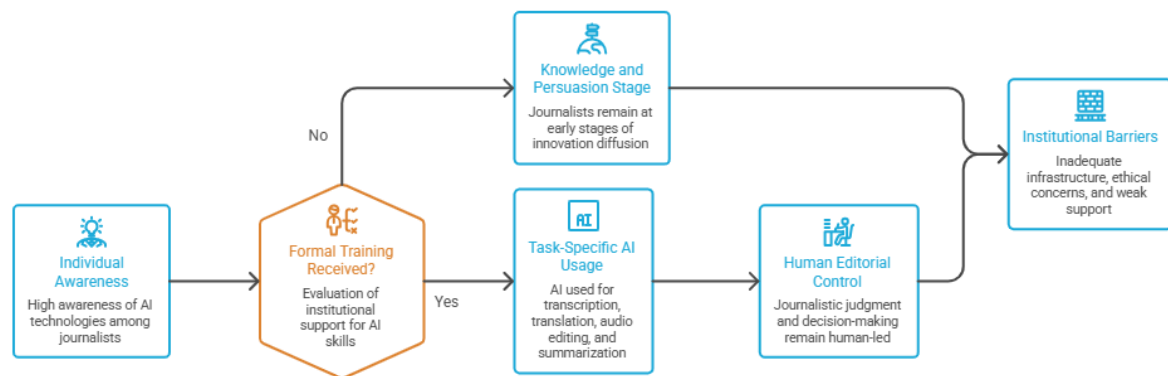


Figure 1 Human–AI collaboration and organizational readiness in broadcast journalism

Figure 1 demonstrates the process of human–AI collaboration and organizational readiness in broadcast journalism within Nigerian public media institutions. The model indicates that the process begins with individual awareness, where journalists exhibit relatively high levels of familiarity with artificial intelligence technologies and their potential applications in journalism practice. However, the transition from awareness to effective collaboration is significantly influenced by the availability of formal training, which serves as a mediating factor in developing journalists' competencies and readiness to adopt AI technologies. In the absence of formal training, journalists remain at the knowledge and persuasion stages of innovation adoption, where awareness of innovation exists but practical implementation remains limited. Conversely, when training opportunities are available, human–AI collaboration evolves into task-specific AI usage, where artificial intelligence is employed primarily for operational activities such as transcription, translation, audio editing, and content summarization. Despite the increasing use of AI technologies, the model emphasizes that human editorial control remains central to the journalistic process, with editorial judgment, news verification, ethical considerations, and decision-making continuing to reside with human journalists. Furthermore, the model highlights the critical role of institutional barriers, including inadequate infrastructure, ethical concerns, limited organizational support, and insufficient institutional readiness, which constrain the effective integration of artificial intelligence into newsroom operations.

#### 4. Conclusion

This study examined the dynamics of human–AI collaboration in broadcast journalism within Nigerian public media by investigating journalists' awareness, utilization, and perceptions of artificial intelligence technologies in the News and Current Affairs Department of the Nasarawa Broadcasting Service (NBS), Lafia. The findings revealed that although awareness of artificial intelligence technologies among journalists was relatively high (70.4%), only 29.6% of respondents had received formal training related to AI applications in journalism. Furthermore, the study found that human–AI collaboration remains limited and task-specific, with AI technologies primarily utilized for transcription (74.1%), language translation (57.4%), audio editing (44.4%), and content

summarization (38.9%). The findings also identified several barriers to effective AI adoption, including inadequate training and technical expertise (42.6%), insufficient technological infrastructure (29.6%), ethical and professional concerns (18.5%), and limited institutional support (9.3%). These findings demonstrate that the integration of artificial intelligence in Nigerian public broadcasting remains at an early developmental stage characterized by high awareness but limited institutional readiness and operational implementation.

From a theoretical perspective, the study extends the Diffusion of Innovations Theory and the Technology Acceptance Model by demonstrating that human–AI collaboration in journalism is not determined solely by technological awareness or perceived usefulness but also by organizational readiness, professional culture, institutional governance, and technological capability. Unlike studies conducted in technologically advanced media systems that emphasize automation and newsroom replacement, this study reveals that human–AI collaboration within resource-constrained public media environments evolves through an assistive and institutionally mediated model of newsroom transformation. Consequently, the study contributes to the growing scholarship on AI-mediated communication by proposing that effective human–AI collaboration in broadcast journalism should be understood as a socially negotiated process involving interactions among technological innovation, organizational structures, and professional practices.

Despite its contributions, this study has several limitations. The research was conducted within a single public broadcasting institution, which limits the generalizability of the findings to other media organizations and national contexts. Additionally, the study employed predominantly descriptive analyses, limiting the examination of causal relationships among organizational, technological, and professional factors. Future research should expand the scope of investigation by conducting comparative studies across public and private media institutions, employing longitudinal and explanatory research designs, and exploring additional dimensions of human–AI collaboration, including ethical governance, professional identity transformation, audience perceptions, and the long-term implications of artificial intelligence for journalism practice in developing media systems.

### Conflict of Interest

The authors declare no conflict of interests.

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