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ARTIFICIAL INTELLIGENCE IN MASS MEDIA: PERCEPTIONS OF ENUGU STATE-BASED JOURNALISTS ON PROSPECTS AND CONSTRAINTS

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ABSTRACT

This study investigates the perceptions of Enugu State-based journalists on the benefits and constraints of Artificial Intelligence (AI) adoption in mass media. A census survey of 377 journalists was conducted, and descriptive statistics were used to analyze the data. The results reveal that journalists in Enugu State have a positive perception of AI's potential to enhance their work processes, particularly in areas like research, writing, data analysis, and social media management. However, they also identify several constraints such as inadequate digital skills, high infrastructure costs, ethical concerns, and restrictive workplace policies. The study highlights the need for training, infrastructure upgrades, ethical considerations and policy reforms to facilitate AI adoption in journalism.

Keywords: Artificial Intelligence (AI), Mass Media, Journalists, Prospects, Constraints

Introduction

Technology has been described as a force that drives changes in journalistic practices and skill sets. The advent of Artificial Intelligence (AI) in recent years lends weight to this claim as AI has transformed the mass media industry, bringing about unprecedented changes. From news gathering through news production to dissemination and consumption, the impacts of the AI-driven technologies, including machine learning algorithms, natural language processing and robotic reporting are felt. With the growing incorporation of the AI technologies and the mass media, divergent views have been raised among journalists and scholars globally about the role of journalists, the nature of news, and the future of journalism. Scholars such as Amponsah and Atianashie (2024) contend that the incorporation of AI in journalism is anticipated to undergo substantial growth, with a major focus being the rapid progress in Natural Language Processing (NLP), ultimately enabling AI to produce highly sophisticated and refined contents. Some scholars and journalists express worries that this development may lead to job displacement or loss of jobs, especially for journalists as the AI technologies may be employed to perform most of the journalist's duties. Nigeria, with its vibrant media terrain,

is yet to fully harness the potential of AI in journalism, presenting a paradox of substantial opportunities and daunting obstacles (Oyedeji & Uthman, 2023). Public opinions and concerns about AI are crucial, as they ultimately influence the adoption and success of this emerging technology (Yigitcanlar, Degirmenci, Inkinen, 2022 citing Zhai et al., 2020). In the light of the foregoing, this study explores views concerning the integration of AI into journalism, highlighting both the benefits and the challenges.

Regarding the benefits, researchers argue that integrating AI into the media industry could revolutionize the production and dissemination of information, leading to significant changes in the way people access and engage with information. According to Oyedeji and Uthman AI offers the mass media sector vast opportunities for enhancement across various areas, including news collection, content creation, fact verification, audience engagement, and overall potential efficiency. In corroboration, Gbaden, Gambo and Shem reported that AI has the potential to enhance journalism by boosting efficiency, curbing misinformation, increasing audience participation and ultimately enabling media outlets to stay competitive with social media platforms and navigating the industry's global financial challenges (Noain-Sánchez, 2022). These opportunities can be summarized in terms of: improved news gathering and reporting capabilities through the automation of data collection, processing and analysis; improved content creation through automated journalism; enhanced fact-checking, verification of news stories and countering of misinformation; enhanced audience engagement via tailored content delivery and interactive features that facilitate participation and feedback; cutting-edge operational efficiency by way of streamlined editorial workflows, resulting in low cost reduction and heightened productivity (Okiyi & Nsude, 2020; Oyedeji & Uthman, 2023; Gbaden, Gambo & Shem, 2024). According to Sánchez, content creation and personalization are the two top priorities for integrating AI into mass media. He noted that AI-driven tools empower journalists to produce vast amount of news, covering a wide range of previously unexplored topics. Additionally, these tools help journalists analyze data, identify patterns, and uncover insights; also help news organisations gain insights into audience behavior, preference and emerging informative trends thereby enabling them (Amponsah & Atianashie, 2024) to effectively tailor news feeds and suggest articles that match each user's unique preferences and interests. They submitted that this level of personalization boosts user engagement, fostering a deeper connection between news platforms and their audiences. As a result, users become more loyal, spending more time on the platform as they discover contents that resonate with their interests and preferences.

Alongside its benefits, integrating AI into mass media has been identified to also pose significant challenges. Key concerns include the potential displacement of journalists, issues of bias and ethics, threats to traditional journalistic values and the necessity for data regulation policies. These challenges have become issues of concerns among scholars. For instance, it is observed

that AI in journalism poses significant risks, particularly in perpetuating bias and spreading misinformation. Noain-Sánchez contends that algorithms such as editorial tools can undermine the media's editorial authority, potentially introducing bias at every stage of content creation, from initial input to final output). According to De-Lima-Santos, Mathias-Felipe, and Ceron (2022), the majority of AI-powered news initiatives rely heavily on funding from tech giants like Google, restricting innovation to a selected few in the news industry. Furthermore, most AI-powered news applications are developed using grants from big tech companies, including Facebook and Google. As a result, researchers argue that this funding model poses significant challenges to innovation in news media, as it creates a monopoly where a few powerful organisations control the flow of resources, deciding who receives funding, when and for what purposes.

A study on AI policy frameworks in Sub-Sahara Africa found that countries like Mauritius, South Africa, Ghana, Gabon and Kenya are still in the early stages of developing AI policies that impact journalism (Kothari & Cruikshank, 2022). The same can be said of Nigeria where Enugu is located. Okiyi and Nsude as affirmed that the country is still in its infancy when it comes to Artificial Intelligence (AI) development. They highlighted some peculiar challenges facing the Nigerian media industry in terms of AI adoption to include: inadequate training for journalists, limited AI literacy, epileptic power supply and lack of political will and interest on the side of the government. Enugu State, located in South-Eastern Nigeria, is a hub of media activity with a growing number of print and broadcast media outlets such as newspapers, radio and television stations. In the course of their duties, journalists in these media outlets require support from advanced technologies, including AI tools, to effectively fulfil their critical role in shaping public opinion, upholding democratic principles and disseminating factual information to counter (Opdahal et al., 2023). Thus, it is essential to understand the opportunities and challenges that AI technologies bring to journalism from the perspective of journalists in order to enable the development of informed strategies for successful AI integration in their profession.

Statement of the Problem

The integration of the Artificial Intelligence (AI) technologies in journalism has transformed virtually all facets of the profession. It has impacted on news gathering, processing and dissemination, and by extension, its consumption. Past studies have identified concerns about journalists' job security, bias, need for critical data literacy among others as militating factors against the adoption of AI in journalism. However, while numerous studies have explored this topic in Western countries, there is a significant knowledge gap regarding the perspectives and experiences of journalists in African countries, such as Nigeria.

Research Objectives

This study seeks to explore the perceptions of journalists in Enugu State on

the prospects and constraints of AI use in journalism. Its specific objectives are to:

1. Determine the kind of AI tools Enugu State-based journalists are familiarity with in their profession.
2. Investigate the perceptions of Enugu State-based journalists on the prospects of AI use in journalism.
3. Explore the perceptions of Enugu State-based journalists on the constraints of AI use in journalism.

Research Questions

1. What kind of AI tools are Enugu State-based journalists familiar with in their profession?
2. What are the perceptions of Enugu State-based journalists on the prospects of AI use in journalism?
3. What are the perceptions of Enugu State-based journalists on the constraints of AI use in journalism?

Literature Review

Artificial Intelligence (AI) technology has transformed numerous sectors, including the mass media industry, bringing about significant changes. In journalism, AI-powered tools are being used to enhance research, writing, and data analysis, among other aspects of the profession. De-Lima-Santos, Mathias-Felipe, and Ceron (2021) identified three primary areas where AI is currently applied in media to include: machine learning, computer vision, and planning (scheduling) optimization. Their study revealed that machine learning is used to enhance audience engagement and tailor business strategies to individual readers. Computer vision, a subset of AI, enables media practitioners to work with visual content in various ways. However, De-Lima-Santos and Salaverría noted that few news outlets can leverage computer vision for investigative reporting due to the required expensive infrastructure and specialised personnel – a luxury only large newsrooms can afford.

Similarly, Gbaden, Gambo and Shem (2024), in their review on challenges of Artificial Intelligence in Nigerian Journalism Practice, identified inadequate infrastructure, limited financial resources and cultural reluctance to change as the main barriers to AI adoption in Nigerian journalism. Studies have shown that while some news organizations are experimenting with AI-powered tools, many others are hesitant due to concerns about cost, training, and job security. For instance, a study by Adeyemi and Oyebode (2020) found that Nigerian journalists are aware of the promising application and benefits of AI in mass media, including improved accuracy and efficiency. However, they also expressed concerns about the challenges associated with AI, including job displacement and bias. Ezinwa, Agbo, and Ozojukwu (2024) found that nearly all (92.5%) of the bloggers surveyed in Enugu State expressed concerns that AI raises ethical issues in blogging. Onwe, Ajibo and Nworie (2024) found that journalists in Enugu State overwhelmingly expressed anxiety about the threat of AI-driven automation to their job security in their study on perception of automated journalism.

Scholars contend that this fear that the AI would render journalists redundant results from the journalists' limited knowledge of the technology. For instance, findings from

studies by Liehner, et al. (2023) and Noain-Sánchez showed lack of knowledge and inability to understand the underlying mechanisms of AI were responsible for the doubts, privacy concerns, fear of job displacement and security issues around the technology. Precisely, Noain-Sánchez' in-depth interviews with journalists, media professionals, academics and technology experts revealed that despite already using AI tools, journalists' concerns about job replacement, lack of AI skills and perceived erosion of journalism core values fuelled their mistrust and resistance to adopting AI technology in the media industry, largely due to their limited understanding of the technology. Thus, the study recommended that education and training would help in addressing and overcoming misconceptions and unfounded concerns about technology. Noain-Sánchez slightly differ with Liehner et al. who reported that participants in their own study had a fair understanding of what AI is and had contacts with AI based technologies even though there was a limited comprehension of how the technology functions among them.

Liehner and colleagues seem to provide an insight into understanding the cause of this seeming difference in reports on knowledge and understanding of AI when they observed that simply defining the term AI is not as straightforward as it might seem because people perceive it differently. In other words, it means different thing to different people. Perhaps this explains why some scholars see AI as a technology that will improve overall efficiency in journalism and not as a threat to it. Knowledge and understanding of the inner workings of AI may not be prevalent among journalists, especially in Nigeria, because it is an evolving technology and also a complex one. Based on this, researchers recommend infrastructure improvement, control of ethical issues, education, training and skill development among journalists to enable them adapt and benefit from the potentials of the AI tools while maintaining their critical and ethical perspectives.

Theoretical Framework

The Technology Acceptance Model (TAM) serves as the theoretical framework guiding this study. The Technology Acceptance Model (TAM) was propounded in 1989 by Fred Davis, an American information systems researcher as part of his doctoral dissertation at MIT Sloan School of Management. The Technology Acceptance Model (TAM) suggests that two key factors drive an individual's decision to adopt a technology: perceived usefulness and ease of use of the technology. Perceived usefulness is the extent to which an individual thinks a technology will enhance their work performance or help achieve goals while perceived ease of use refers to how effortless an individual believes using the technology will be. The model is widely used to explain how users form attitudes and intentions towards using a new technology considered. AI is a new technology and studies have shown that it is increasingly being adopted in various industries, including mass media. Journalists as users of technology are increasingly adopting it in their profession. However, its adoption has left journalists and media practitioners with varied perceptions on its usefulness and challenges in the

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profession. The Technology Acceptance Model is a fitting framework for this study as it offers a conceptual structure for understanding Enugu State-based journalists regarding the benefits and drawbacks of AI, and how these perceptions might influence their adoption of the technology.

Methodology

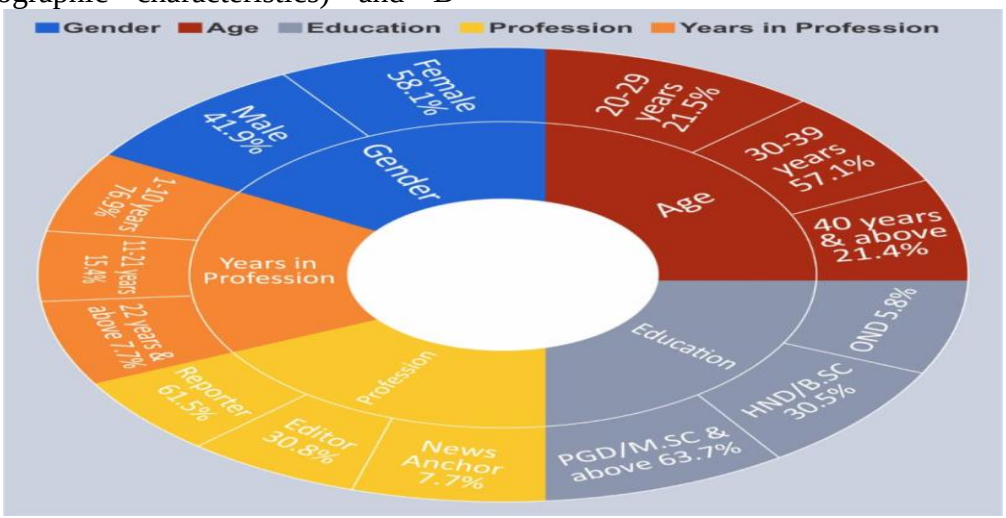
This study employed a descriptive survey design to explore Enugu State-based journalists' perceptions of AI in mass media. A structured questionnaire with 20 items was used to collect data on demographics, familiarity with AI-powered tools, and views on AI's prospects and challenges in journalism. The study focused on Enugu State in South East, Nigeria, with a population of 377 registered journalists. A census sampling technique was used, selecting all 377 journalists as participants. However, a purposive sampling technique was employed to select respondents from print, broadcast, and online media outlets. The questionnaire consisted of two sections: A (demographic characteristics) and B (psychographic questions on AI familiarity, usefulness, and challenges). Face validation ensured the questionnaire's validity, with experts reviewing and correcting the questions to align with the study's objectives. A test-retest approach confirmed the questionnaire's reliability through a pilot study with 30 journalists. Hard copies of the questionnaire were distributed to journalists at their workplaces, media organizations, and during events, with assistance from three final-year Mass Communication students.

Data Presentation and Analysis

Data collected from this study were analysed using simple percentages and presented using chart and descriptive tables. Out of the 377 copies of questionnaire administered, 365 (96.8%) copies were correctly filled, returned and analysed for the study as shown below.

Demographic information

The preliminary information of respondents who provided the data for this study is presented in Figure 1.1.



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Figure 1.1: Percentage of respondents by gender, age, education, profession and years in profession.

More females (58.1%) responded to the questionnaire than males (41.9%). Most respondents (57.1 %) were aged between 30 and 39 years. Respondents who possessed post graduate degrees were more in number (63.7%) than those with Bachelors' degrees and below. More reporters (61.5 %) responded to the questionnaire than other professions. Most respondents (76.9%) were between 1 and 10 years in the profession (Figure 1.1).

Research question 1: What kind of AI tools are Enugu-State-based journalists familiar with in their profession?

In answer to research question three above, responses to the relevant section of the instrument (Items 1 to 5) were collated and analyzed. The obtained results are presented in Table 1.1.

Table 1.1: Enugu State-based journalists' familiarity with AI tools in journalism

S/N	Familiarity with AI tools	% Agree	%Disagree	Remark
1	Fact-Checking tools	91.3	8.7	Agree
2	Automated writing tools	88.1	12.9	Agree
3	Data analytics tools	74.6	25.4	Agree
4	Social media monitoring tools	43.7	56.3	Disagree
5	Speech recognition (transcription) tools	51.3	48.7	Agree

The majority of the respondents in this study (91.3 %) agreed that they are familiar with AI fact-Checking tools; automated writing tools (88.1%), and data analytics tools (74.6%). More than half of them (51.3%) are familiar with speech recognition (transcription) tools. Conversely, more than half of the respondents (56.3%) disagreed that they are familiar with social media monitoring tools.

Research question 2: What are the perceptions of Enugu-State-based journalists on the prospects of AI use in journalism?

In answer to research question three above, responses to the relevant section of the instrument (Items 6 to 10) were collated and analyzed. The obtained results are presented in Table 1.2.

Table 1.2: Enugu State-based journalists' perceptions on the prospects of AI in journalism

S/N	Perception on AI prospects	% Agree	% Disagree	Remark
6	AI aids research and investigation in journalism	61.6	38.4	Agree
7	AI facilitates journalistic writing and editing	86.2	13.8	Agree
8	AI enhances data analysis and visualization	79.4	20.6	Agree
9	AI enhances social media management	76.2	23.8	Agree
10	AI increases efficiency and accuracy in journalism	82.8	18.2	Agree

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Enugu State-based journalists who responded to our questionnaire agreed to all items listed in this section of the questionnaire (Table 1.2). Specifically, 61.6 % of the respondents agreed that AI aids research and investigation in their profession; 86.2 % of them agreed that AI facilitates journalistic writing and editing while 79.4 % of them agreed that AI enhances data analysis and visualization. Furthermore, most respondents agreed that AI enhances social media management (76.2 %) and that AI increases efficiency and accuracy in journalism (82.8 %).

Research question 3: What are the perceptions of Enugu-State-based journalists on the constraints of AI use in journalism?
In answer to research question three above, responses to the relevant section of the instrument (Items 11 to 15) were collated and analyzed. The obtained results are presented in Table 1.3.

Table 1.3: Enugu State-based journalists' perceptions on the constraints to AI use in journalism

S/N	Perception on AI constraints	% Agree	% Disagree	Remark
11	Fear of job displacement	23.8	72.6	Disagree
12	Poor digital literacy/lack of training	86.2	13.8	Agree
13	High cost of digital infrastructure	79.4	20.6	Agree
14	Ethical concerns	67.2	32.8	Agree
15	Employers' restrictive policies	81.7	19.3	Agree

Most of the Enugu State-based journalists who responded to our questionnaire (72.6) disagreed that fear of job displacement is a constraint to AI use in their profession. Conversely, 86.2% of them agreed that poor digital literacy/lack of training; high cost of digital infrastructure (79.4%); ethical concerns (67.2%) and employers' restrictive policies (81.7%) are the constraints challenging AI use in their profession.

Discussion of Findings

This study investigated the perceptions of Enugu State-based journalists on the prospects and constraints of AI use in their profession. Specifically, the first research question investigated the types of AI tools that Enugu State-based journalists are familiar with in their profession. The findings show that Enugu State-based journalists are familiar with most of the AI tools outlined, including fact-checking tools (91.3%), automated writing tools (88.1%), and data analytics tools (74.6%). However, the findings also reveal a gap in knowledge and skills among journalists in the state, particularly in the use of social media monitoring tools (56.3% reported limited familiarity). Taken together, the results here show that the Enugu State journalists are familiar with AI tools even though there is still a gap in knowledge and skills among the journalists in some of the tools. By implication, journalists in the state are open to adopting AI-powered tools to enhance their work but there is still need for targeted training to address the gap in knowledge and skills which may constitute an obstacle if

unaddressed. The findings of the current study support that of other studies such as Liehner et al (2023); Ezinwa, Agbo and Ozojukwu (2024) who reported that participants in their studies had a fair understanding of what AI is and had contacts with AI based technologies.

The second research question explored Enugu State-based journalists' views on Artificial Intelligence (AI) integration in their profession. The findings reveal that these journalists hold a positive outlook on AI, believing it enhances research, facilitates writing and editing, improves data analysis, and boosts efficiency and accuracy. This optimism suggests that Enugu State-based journalists are open to adopting AI-powered tools in their work, aligning with the Technology Acceptance Model's notion that perceived usefulness and ease of use drive technology adoption. The journalists' agreement on AI's potential to enhance various aspects of their work, including research, writing, data analysis, social media management, and overall efficiency, further underscores their positive perception of AI's usefulness.

With regard to the third research question, the study's data offer insightful perspectives on Enugu State-based journalists' views on the challenges of adopting Artificial Intelligence (AI) in their profession. The findings highlight several concerns that these journalists have about AI integration, including: limited digital literacy (journalists' lack of proficiency in using digital tools and technologies); high costs (the financial burden of investing in AI-powered tools and technologies) and restrictive workplace policies (organizational rules and regulations that hinder the adoption of AI). Notably, the study's findings diverge from those of Onwe, Ajibo, and Nworie, who reported that journalists in Enugu State were deeply concerned about AI automation threatening their job security. In contrast, this study's respondents were less worried about job replacement and more concerned about the practical challenges of AI adoption.

Conclusion

As AI continues to penetrate virtually all facets of the media industry, journalists as technology users are becoming familiar with its basic tools and the potentials the technology presents towards enhancing their journalistic work. However, there still exists a gap in knowledge and skills about the use of the technology among journalists. This knowledge gap and other challenges such as lack of AI infrastructure, ethical concerns, and workplace restrictive policies may hinder journalists from using the technology in their work. Hence, training, infrastructure upgrades, ethical guidelines, and policy reforms are critical to facilitate AI adoption in journalism.

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