Awareness, Usage and Perception of Artificial Intelligence in Journalism Practice among Journalists in Kwara State

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Abstract:
This study was guided by three research objectives which are level of awareness, usage, and perception of artificial intelligence (AI) among journalists in Kwara state. Findings indicate a spectrum of awareness, from early adopters to those within the early majority and late majority categories. This revelation mirrors the Diffusion of Innovations Theory and Technology Acceptance Model, depicting a recognizable pattern of AI adoption within the realm of journalism, with innovators and early adopters leading the way. Findings establishes that AI has infiltrated journalism practice in Kwara state, with journalists leveraging AI tools to streamline tasks and enhance productivity. It was concluded that given the informants' varying knowledge levels, continuous education and training in AI are essential to unlock its full potential in journalism practice It was therefore recommended that, bridging the knowledge gap is imperative, while education and training programmes such as workshops and online courses, should be introduced to equip journalists in Kwara state with a deeper understanding of AI and applicability. Media organizations and professional bodies must initiate awareness campaigns to explain the benefits and potentials of AI for journalists, by informing them of its pivotal role in the future of journalism. Collaborating with technology providers and AI tool developers can assist media organizations in Kwara state to access tailored AI solutions, addressing concerns related to content filtering, accuracy and timeliness. This study not only illuminates the current adoption of AI among journalists, but also provides a roadmap for a more informed, strategic, and effective integration of AI tools into journalism practice in Kwara state.

Keywords: Awareness, Artificial Intelligence, Journalists, Media, Perception, Reporting

1. Introduction

Artificial intelligence (AI) is rapidly transforming various industries including journalism, as technological advancements continue to reshape the news reporting landscape. It is essential to examine the integration of AI into journalistic practices and understand how journalists perceive its role in their profession (Hendricks, 2018). This era is witnessing the rise of machines, particularly robots, surpassing human efficiency and speed, marking the dominance of AI in various human activities (Hughes, 2017). The contemporary era is witnessing a remarkable ascent of machines, particularly robots, which are demonstrating an unparalleled degree of efficiency and speed, marking the indisputable dominance of AI across a broad spectrum of human activities (Hughes, 2017). AI, which traces its origins to the 1950s through the pioneering work of John McCarthy, has experienced exponential global growth. It has become a recurring subject in discussions on technological innovation, sometimes sparking concerns about potential job displacement (Okunola, cited in Guanah, 2020). Notably, tech luminary Elon Musk has sounded alarm bells regarding the potential risks associated with

AI. Projections indicate that by 2025, AI-substantial portion of workplace functions, underscoring the extensive role AI plays in the future of work (Sherman, 2018).

AI's influence extends beyond the confines of academia to journalism, where AI-generated smart templates are streamlining the collection and dissemination of news reports (Guanah, 2020). AI technologies are causing seismic shifts within journalism, affecting various aspects of news production, including Data Journalism, Algorithm Journalism, Automated Journalism, and Metrics-Driven Journalism. In the process, they are redefining the very nature of journalism itself (Marr, 2017). The phenomenon of automated journalism, often referred to as robot journalism or algorithmic journalism, involves the use of computer programs to generate news articles (Loosen, 2018). For example, the New York Times has harnessed the power of "Editor," an AI-based tool that collaborates with journalists to enhance the quality of articles (Guanah, 2020). Similarly, The Washington Post relies on "Heliograf," an in-house robot reporter, which has proven invaluable for enhancing reporting, especially in cases involving limited human staff (Schmelzer, 2018).

The impact of AI extends to reshaping the very processes of news gathering, editing, and reporting. It has not only reduced the workload of journalists but also raised essential questions regarding the evolving roles of human journalists as AI's presence continues to grow (Montal & Reich, 2016). While AI undeniably possesses numerous advantages, human journalists bring to the table unique attributes that AI currently lacks, driven robots are expected to handle a such as humor, the ability to build relationships, and convey emotions (Kobie, 2018). Despite the capabilities of AI, human decision-making remains vital, particularly in selecting the data sets to analyze for news stories (Nwabueze, 2019).

The integration of AI into journalism has garnered significant global attention, given its potential to enhance efficiency and boost creativity. However, the extent to which AI tools and technologies have been embraced by journalists in Kwara state remains largely unexplored. Despite the literature acknowledging the importance of considering socio-cultural nuances in AI adoption, there is a critical gap in providing an in-depth exploration of the specific challenges and opportunities that journalists in the distinctive context of Kwara state, Nigeria, face (Hosanagar, 2017). Additionally, the ethical dimensions of AI integration in journalism within Kwara state remain under investigated. Examining how AI usage impacts editorial decisions, accuracy, transparency, accountability, and the potential for bias is essential for maintaining journalistic integrity while harnessing AI technologies for news production. Furthermore, there is a paucity of studies that delve into the specific barriers and obstacles encountered by journalists in Kwara state when adopting AI technologies. This study aims to address these gaps by conducting a comprehensive investigation into the awareness, usage, and perception of AI in journalism among journalists in Kwara state, thereby contributing to a more nuanced understanding of the AI landscape in this unique regional context.

II. Research Objectives

This study was guided by the following objectives:

To assess the level of awareness of artificial intelligence among journalists in Kwara state

To investigate the usage of artificial intelligence tools in journalism practice among journalists in Kwara state.

To examine the journalists' perception of artificial intelligence in journalism practice in Kwara state.

III. REVIEW OF LITERATURE

Overview of Artificial Intelligence (AI)

Artificial Intelligence (AI) has become one of the products of technological advancement. It is basically designed to either complement or replace natural intelligence. However, the Ad-hoc Expert Group (AHEG), established by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) to draft recommendations on the ethics of artificial intelligence, in March 2020 concurred that defining AI universally is a complex task. However, the group arrived at a recommendation that characterizes artificial intelligence as the processing of information in a manner akin to intelligent behavior, encompassing elements such as reasoning, learning, perception, prediction, planning, or control. As stated by AHEG (2020), the foundational components of AI include:

Systems of information-processing technologies that embody models and algorithms that produces a capacity to learn and to perform cognitive tasks leading to outcomes such as prediction and decision-making in real and virtual environment. AI systems are designed to operate with some aspects of autonomy by means of knowledge modeling and representation and by exploiting data and calculating correlations. AI systems may include several methods, such as but not limited to machine learning, including deep learning and reinforcement learning, machine reasoning, including planning, scheduling, knowledge representation and reasoning, search, and optimization, and cyber-physical systems, including the Internet-of-Things, robotic systems, social robotics, and human-computer interfaces which involve control, perception, the processing of data collected by sensors, and the operation of actuators in the environment in which AI systems work (AHEG, 2022).

Okocha and Ola-Akuma (2022) describe Artificial Intelligence (AI) as a software or application that utilizes code and programming languages to make independent decisions and perform tasks resembling human intelligence. These AI systems are equipped with algorithms, a set of commands that enable them to operate online or offline depending on their intended functions. They exhibit intelligent behavior by analyzing their surroundings and autonomously performing tasks, such as handling repetitive or hazardous jobs, identifying patterns in extensive data, or predicting climate changes (European Commission, cited in Gómez-Diago, 2022).

AbdulRahaman (n.d.) defines Artificial Intelligence as the intelligence demonstrated by machines, distinct from the natural intelligence displayed by humans. AI typically refers to machines, such as computers, that aim to replicate cognitive functions associated

with human cognition, including learning and problem-solving.

Mohammed (2019) categorizes AI as a field of computer science focused on creating computer programs capable of accomplishing tasks that traditionally require human intelligence. AlSedrah (2017) traces the origins of AI to John McCarthy in 1956, who proposed the idea of replacing humans with machines, which has since become a focal point in modern technology. Manning (2020) attributes the coining of the term "AI" to John McCarthy in 1955, defining it as "the science and engineering of making intelligent machines." AlSedrah (2017) views AI as the study of machines' ability to learn, understand, behave like humans, and respond to specific behaviors. AI's introduction has led to exponential growth, reshaping technology and business fields.

Expanding the AI's characteristics, Mohammed (2019) highlights its ability to predict, adapt, and learn through algorithms capable of identifying patterns in extensive data. AI can make independent decisions, enhance natural intelligence, exhibit motion and perception, and engage in continuous learning through constructing analytical models, allowing for tasks that involve "innumerable rounds of trial and error." AI, as an emerging technology, offers reliability, cost-effectiveness, problem-solving capabilities, and decision-making prowess, as noted by Sadek (n.d.), cited in AlSedrah (2017).

Furthermore, Mohammed (2019) discusses the developmental stage of AI known as narrow AI, designed to perform specific tasks, such as facial recognition, internet searches, or driving. Researchers aim for the long-term development of artificial general intelligence (AGI or strong AI) that can apply intelligence to various problems, potentially matching human intelligence. The ultimate goal is to achieve super-intelligence (ASI), surpassing even the brightest human minds, a milestone that may be attainable by 2060 (Mohammed, 2019).

While AI is hailed for making lives easier and saving time, concerns about overreliance on AI leading to joblessness and existential threats are raised (Sadek, (n.d.), cited in AlSedrah, (2017)). Addressing these concerns, UNESCO (2021) has issued comprehensive recommendations on the ethics of Artificial Intelligence to ensure that the application and deployment of AI technologies are guided by rigorous scientific research and ethical analysis.

Concerns about AI in Journalism

Given the rapid technological advancements, the practice of journalism is undergoing significant transformations. Multiple studies have highlighted how Artificial Intelligence (AI) is poised to revolutionize the structures and processes within journalism (Hosanagar, 2017; Kobie, 2018; Anderson, 2018; Guanah, Agbanu & Obi, 2020; Okocha & Ola-Akuma, 2022; and Gómez-Diago, 2022). Beckett cited in Gómez-Diago, (2022) posits that AI is expected to reshape news structures, patterns, and collaborations with users, particularly in the areas of content collection, production, and distribution. This includes the integration of augmented reality, drones, and voice recognition in journalism. Journalism, as a vital institution for disseminating information, is at the forefront of adopting technological innovations. Guanah, Agbanu and Obi (2020) acknowledged that the age ahead involves the

replacement of human tasks by machines, signifying a reduction in human interventions across various fields.

Tatalovic (2018), quoting Nicholas Diakopoulos, emphasizes that algorithms and AI are integral parts of modern society, and journalism must embrace these technologies to stay relevant. Robotic journalism, which primarily focuses on content generation, has been a prominent example of AI's application in journalism.

Despite the growing presence of AI in journalism, journalists and media professionals often exhibit a sense of unpreparedness and skepticism. Many fear that AI tools may render them redundant due to their limited knowledge and skills (Gbaden, Gambo & Shem, 2024). However, Noain-Sánchez (2022) emphasizes that even advanced AI tools require human supervision, indicating that AI cannot completely replace the roles played by human beings in the industry.

Ethical considerations also loom large in AI's application to journalism. Siau and Wang (2020) point out that AI ethics concern the moral obligations and duties of AI and its creators. They argue that building AI ethically and ensuring ethical AI are essential, as relying on automated reporting may lead to biased or inaccurate coverage, potentially undermining the role of human journalists. Additionally, robotic journalism raises legal concerns related to traditional publishing rules, editorial control, privacy, and data protection (Tosyali & Aytekin, 2020).

Despite these concerns, Okocha and Ola-Akuma (2022) avers that robotics has become an integral part of the evolving journalism landscape, enhancing the news industry in numerous ways, such as efficient data gathering, automated reporting, fact-checking, newsroom optimization, drone journalism, and audience engagement. Expert, like Noam (2018) contends that AI will not fully replace human journalists. They argue that AI may have limitations, which, in turn, offer new opportunities for human journalism.

The complexity of the human brain, which far exceeds early AI predictions, suggests that fully replacing humans with robots may be challenging. Noam, in agreement with the likes of Clerwall (2014), highlights the enduring role of human journalists. Additionally, the demands of the "Z Generation" for more visual and interactive content have spurred the development of new storytelling modes, involving technologies like Virtual Reality (VR) and Augmented Reality (AR) to engage consumers dynamically.

While some argue that the current Narrow AI may not meet the expectations of consumers, the adoption of General AI could bring about transformative changes in journalism. Nevertheless, it is unlikely to happen in the foreseeable future.

IV.THEORETICAL JUSTIFICATION

This study is anchored on the Diffusion of Innovations Theory propounded by Everett Rogers in 1962 and The Technology Acceptance Model (TAM) developed by Fred Davis and Richard Bagozzi in 1989.

Diffusion of Innovation Theory

The Diffusion of Innovations Theory which seeks to explain how, why, and at what rate

new ideas and technology spread. The theory was popularized by Everett Rogers in his book Diffusion of Innovations, first published in 1962. Rogers explains that diffusion is the process by which an innovation is communicated over time among the participants in a social system. The origins of the diffusion of innovations theory are varied and span multiple disciplines. Rogers proposes that five main elements influence the spread of a new idea: the innovation itself, adopters, communication channels, time, and a social system. This process relies heavily on social capital. The innovation must be widely adopted in order to self-sustain. Within the rate of adoption, there is a point at which an innovation reaches critical mass. In 1989, management consultants working at the consulting firm Regis Mckenna Inc. theorized that this point lies at the boundary between the early adopters and the early majority. This gap between niche appeal and mass (self-sustained) adoption was originally labeled “the marketing chasm”.

The categories of adopters are innovators, early adopters, early majority, late majority, and laggards. Diffusion manifests itself in different ways and is highly subject to the type of adopters and innovation-decision process. The criterion for the adopter categorization is innovativeness, defined as the degree to which an individual adopts a new idea.

The application of the Diffusion of Innovations Theory to this study is essential for understanding how new ideas and technology, particularly the adoption of AI tools in journalism, spread among participants in the context of Kwara State. The theory provides a structured framework to explore the dynamics of AI adoption within this social system. The study's reliance on this theory allows for a comprehensive analysis of various factors influencing the adoption of AI in journalism.

Rogers' theory identifies five critical elements that play a role in the diffusion process: the innovation itself, adopters, communication channels, time, and the social system. In the context of AI adoption, the innovation represents AI tools and technologies, the adopters are the journalists, communication channels are the means through which knowledge about AI is shared, time refers to the rate of adoption, and the social system encompasses the journalism practice in Kwara state.

The categorization of adopters into innovators, early adopters, early majority, late majority, and laggards helps in understanding the varying levels of awareness and willingness to embrace AI among journalists in the state. This categorization is based on the degree of innovativeness, which, in this study, relates to how open journalists are to adopting AI tools. By identifying these categories, the study provided insights into the adoption curve and strategies for promoting AI adoption in journalism.

The concept of the “marketing chasm” between early adopters and the early majority is also valuable, as it signifies a critical juncture in the adoption process. Recognizing and addressing this gap is crucial for facilitating widespread and self-sustained AI adoption in journalism.

Summary, the Diffusion of Innovations Theory provides a structured approach to analyze the adoption of AI among journalists in Kwara state, offering valuable insights into the challenges, opportunities, and strategies for successful integration.

The Technology Acceptance Model (TAM)

This theory, developed by Fred Davis and Richard Bagozzi in 1989, also serves as the theoretical underpinning for this study. TAM is an influential information systems theory that aims to elucidate how users come to accept and utilize new technologies. At its core, the model posits that the actual usage of technology is the ultimate endpoint, while behavioral intention plays a pivotal role in leading individuals to adopt and employ the technology. Behavioral intention (BI) is significantly shaped by attitude (A), which is essentially the individual's overall impression of the technology.

TAM posits that when users are introduced to a new technology, a variety of factors come into play and influence their decision regarding whether, when, and how they will employ the technology. Moreover, Davis and Bagozzi opined that two key factors are critical towards people's acceptance of a technology; perceived usefulness and perceived ease-of-use.

Perceived Usefulness (PU): This concept, as articulated by Fred Davis, signifies "the degree to which a person believes that using a particular system would enhance their job performance." Essentially, it reflects whether an individual perceives the technology as beneficial for their intended tasks.

Perceived Ease-of-Use (PEOU): Davis defined PEOU as "the degree to which a person believes that using a particular system would be free from effort." In other words, it pertains to how easy or challenging users perceive the technology's interface and overall usability. If a technology is perceived as easy to use, it is more likely to overcome user resistance.

The Technology Acceptance Model (TAM) is very relevant to this study as it provides a structured framework for comprehending the level of awareness, utilization, and adoption of AI tools among journalists in Kwara state. TAM aligns with the study by focusing on Behavioral Intention (BI) and Attitude (A), reflecting journalists' intentions to adopt AI tools and their attitudes towards them. The model's key components, Perceived Usefulness (PU) and Perceived Ease-of-Use (PEOU), are directly relevant, gauging whether journalists see AI as enhancing their job performance and how user-friendly they perceive it. Additionally, TAM accounts for External variables such as social influence, and benefits from its validation and reliability in various contexts. Essentially, TAM offers a valuable framework to analyze how journalists in Kwara state perceive and intend to use AI tools, enhancing their comprehension of AI integration and guiding strategies for its promotion within the journalism professing

V. Empirical Review

Existing empirical studies on AI in journalism were reviewed. There is no gainsaying that studies have been conducted locally and internationally on artificial intelligence, its spread and applications in different fields of human endeavours. So, this part of the study brought to the fore a number of previous works on AI usage in journalism:

In a study conducted by Okocha and Ola-Akuma (2022) which focused on the perception of journalists on the application of robot to their works, with the aim to know the views of

journalists on applicability of robot in line of their duty and the possible transformation it may generate. The study was a quantitative one, with journalists both active and former forming the population, they were chosen through purposive means. Findings from the study showed that most Nigerian journalists though familiar with the concept of robot journalism believe Nigerians are not adequately prepared for its adoption. It was established that automation is the way of the future, and Nigerian journalists cannot afford to be consigned to oblivion in the final shift to an automated world, so they must be acquainted to embrace robot journalism. Also, further findings from the study suggested the notion that there are fears that news automation would obviate the need for journalists, since working with AI promises better efficiency and job satisfaction through automation of repetitive and error-prone routine chores.

Also, Noain-Sánchez, (2022) conducted another study on addressing the impact of Artificial Intelligence in journalism: the perception of experts, journalists and academics. The study took an explorative approach, essentially to analyse the application of Artificial Intelligence in newsrooms, focusing on the impact on news-making processes, media routines and profiles, highlighting the benefits and shortcomings, especially as it relates to ethical issues. The study adopted interviews method, with 15 in-depth interviews conducted in two rounds, in 2019 and 2021. Those forming the sample size are journalists, and other media professionals, it also included academics, experts in the media industry, as well as providers of technology. Findings show that interviewees agree that AI came with enhancement of the regular tasks of journalists by saving time, augmenting the efficiency of the news-making processes and, therefore, increasing mass media industry productivity. As such, more training that are relevant to the adaptability of AI technologies as well as a change of mind-set in the media environment were proffered as part of recommendations. The study equally throws up questions of ethical issues underlining the need for continuous control and supervision of the processes undertaken by AI.

In another study conducted by Guanah, Agbanu and Obi (2020), which looked at Artificial Intelligence and journalism practice in Nigeria: perception of journalists in Benin City, Edo state, the study looked at how AI can, or has been impacting journalism practice in Benin City, Edo State, Nigeria. It was anchored on the assumptions of mediamorphosis theory while Survey and In-depth oral interview were adopted as the research methods for obtaining data. Journalists in the state formed the population from where sample size was drawn. Findings from the study indicates that journalists in Benin City agreed that use of Artificial Intelligence (AI) in reporting, is an improvement over the prevailing manual reporting. Also, respondents equally rated the most like impact of AI driven journalism, it was discovered that the impacts include news accuracy, timely news, time saving, extrication of bias, and both job loss and job creation, among others. Data gathered and analysed from the study also established that most of the journalists feel threatened that the utilization of AI-driven media applications can lead to their job loss.

Furthermore, Jia, (2020) undertook a study to examine the comparative expectations and

perceived quality of Chinese automated journalism among readers, accordingly, the results of the study showed that when participants read both human-written and automated news, actual perceptions of human-written news were significantly higher than automated news in terms of readability and expertise. When participants read either human-written news or automated news, significant difference existed only in expertise but no significant difference in credibility was observed in either study. Impliedly, there may not be much difference noticed in the stories written with the help of Artificial Intelligence compared to the ones written by men. Another major finding is that for human-written news, the perceived readability and expertise were significantly lower than expectations in both studies whereas the perceived credibility was significantly higher than expected. In other words, human-written news was always overrated in the prior expectations of readability and expertise but was underrated in terms of credibility. For automated news, readers' actual perceptions were higher overall than their prior expectations but only significant in the credibility measure. The study demonstrated human written news did not meet people's expectations.

Similarly, Graefe and Bohlken (2020) equally carried out another study in this manner, titled: Automated Journalism: A Meta-Analysis of Readers' Perceptions of Human-Written in Comparison to Automated News. The meta-analysis summarizes evidence on how readers perceive the credibility, quality, and readability of automated news when compared with human-written news. The outcome of the study, which is based on experimental and descriptive evidence from 12 studies, having a total of 4,473 participants, indicated no difference in readers' perceptions of credibility, a small advantage for human-written news in terms of quality, and a huge advantage for human-written news with respect to readability. Experimental comparisons further suggest that participants provided higher ratings for credibility, quality, and readability only when they were told that they were reading a human-written article. Given this outcome, the authors suggested that automation news writing may be considered most useful for routine and repetitive tasks, for which one needs to write a large number of stories that may not require flowery narration or storytelling.

These findings no doubt, emphasized that the deployment of Artificial Intelligence in journalism has come to stay and may in the long run be limited.

to some tough routine tasks.

VI. METHODLOGY

The study employed a qualitative research design through the key informant interview. The use of qualitative approach is to allow for in-depth and clearer understanding of the research topic. It also allows for the researcher to explore, robustly investigate and learn about social phenomenon from the perspective of people that experienced the phenomenon. However, a total of nine journalists, comprising of male and female journalists practicing in Kwara State were selected for the interviews. Although, this is due to attaining a point of data saturation, as the researcher had determine to conduct more interviews. The above number is further justified by the submissions of Shari and Dworkin (2012) that between five and 50

informants/participants is ideal in qualitative research. Also, it is in tandem with the views of O'Reilly and Parker (2012) that between six and 10 key informants' appear to be sufficient in a qualitative study, so as to get rich and useful data, while also corroborating the positions of Fusch and Ness (2015) that about eight to 12 interviews are enough to attain data saturation point in key informant interview. Thus, data obtained from these nine (9) journalists were thematically analyzed in line with the outlined research objectives. Those interviewed were mapped out and evaluated due to their membership of the Nigerian Union of Journalists (NUJ), years of experience (not less than 7 years of practice) and active involvement in journalism practice. The study area is Ilorin, North Central Nigeria. The interview was carried out to assess the level of awareness of AI among journalists in Kwara State, to investigate their usage of AI tools in journalism practice, and to examine their perception of AI in journalism practice. The informants were recruited through purposive and convenient sampling that was initiated from the membership register of journalists in the state which was obtained from the NUJ Kwara state Secretariat. A structured interview guide that contains questions to elicit responses on the three research objectives was sent to the Whatsapp contacts of the informants, and their responses were sent via the same medium.

VII. Data Analysis and Findings

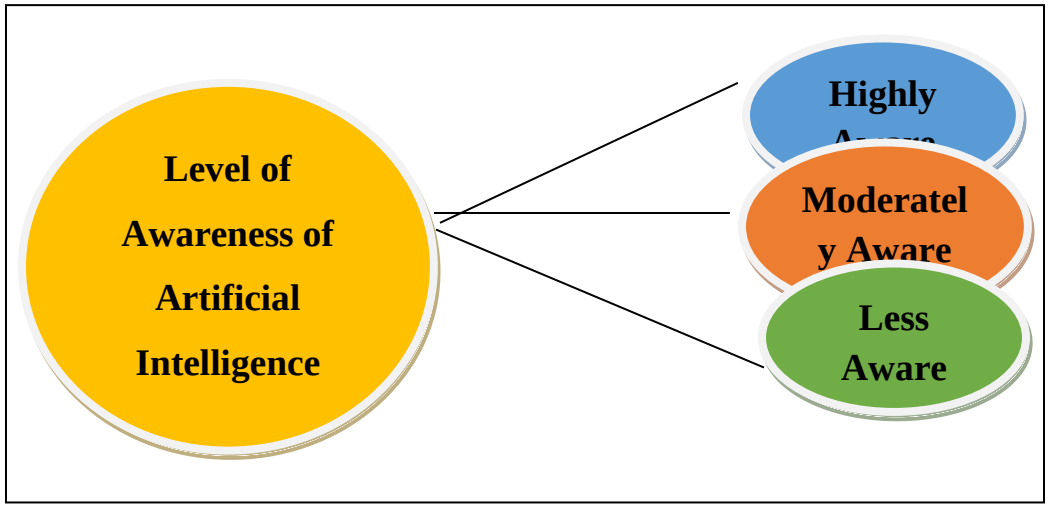
Responses from the informants in the interview are presented, interpreted and analysed. The interview questions prompted informants to relay the account of their experiences and perspectives about AI usage in journalism. The various themes that emerged from the interviews are presented below.

RO 1: Level of awareness of Artificial Intelligence among Journalists in Kwara state

This objective assesses the level of awareness of AI among journalists in Kwara State. The aim is to examine their understanding of AI and how it is deployed for journalism practice. Thus, one major theme which illuminates the informants' level of awareness emerged.

Theme One: Awareness of Artificial Intelligence

This theme discussed informants' opinion on their knowledge of AI as a tool for journalism practice. While sharing their life experiences, three sub-themes emerged from the interview responses, they are: (1) Highly aware (2) Moderately aware (3) Less aware



Fieldwork 1: Level of Awareness of Artificial Intelligence

Sub-theme One: Highly Aware

Various responses were given by some journalists that have higher level of awareness of AI

According to Informants 3 and 5:

> The awareness in my medium is on an appreciable level. This is so, because almost every of my colleagues make use of their mobile phones to write, create and edit write-ups before onward submission to the Editor through a designated electronic mail (Female, KIII, Kwara, June, 2024).

> From a scale of 1 to 5, I will rate my level of awareness as 3, and this is good enough (Male, KV, Kwara, June, 2024).

Moreover, Informant 1 opined that AI is now trending in every job activity:

> Artificial intelligence is now a trending phenomenon in every job, not only journalism alone. Thus, I have full understanding and awareness of AI (Male, KI, Kwara, June, 2024).

Sub-theme Two: Moderately Aware

This sub-theme captures fair level of awareness of AI in journalism practice. Informant 2 averred that:

> I will put it at 50%. This is because we are just introducing it to some, and I know they're already putting it to use. Some have not taken advantage of it though (Female, KII, Kwara, June, 2024).

> There is no way one could have absolute knowledge of some of these AI tools because of their high level of sophistication, but I can say I have a fair knowledge of the few ones I'm used to (Male, KIX, Kwara, June, 2024).

Sub-theme Three: Less Aware

Other Informants responded to the level of awareness of AI in their place of work as low:

The level of awareness of artificial intelligence is low among employees in the media establishment I works for. Many reporters do not know how to deploy AI yet. Hence, they do not see it as a tool for journalism (Male, KIV, Kwara, June, 2024).

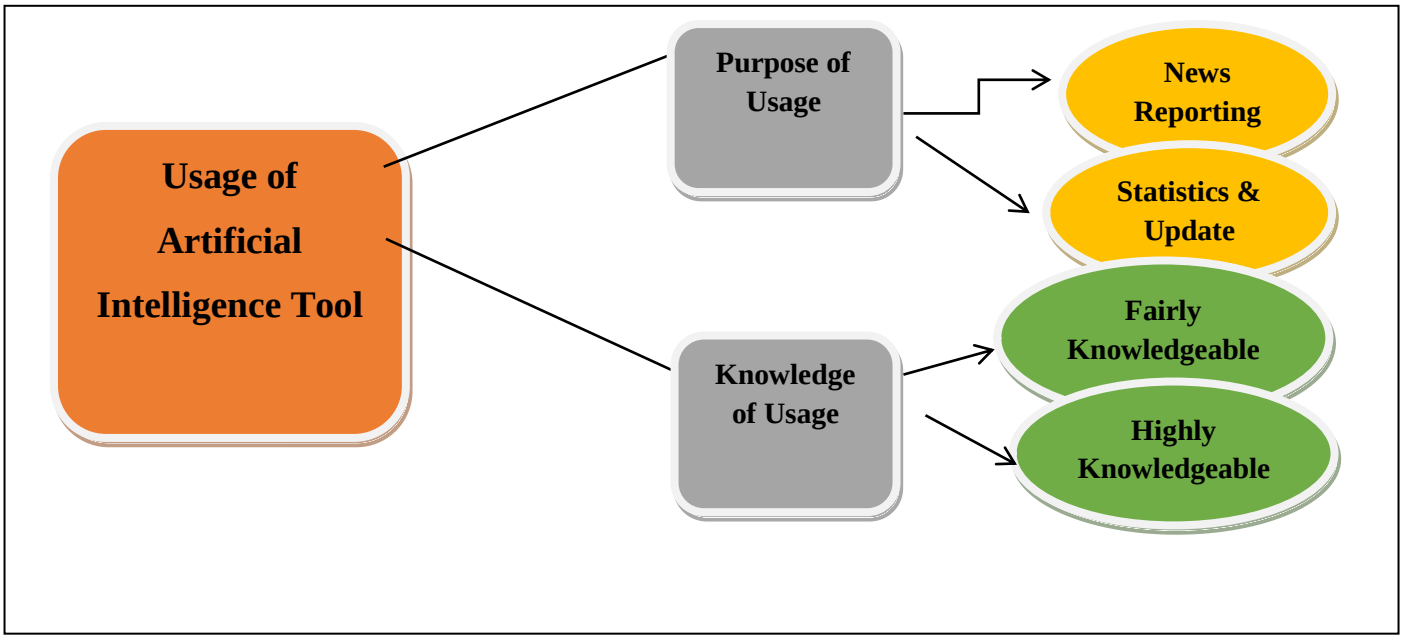
In terms of level, artificial intelligence awareness is low among my colleagues in the newsroom (Male, KVIII, Kwara, June, 2024).

RO 2: Usage of Artificial Intelligence Tools in journalism practice among Journalists in Kwara state

This objective investigates AI tools usage in journalism practice among journalists in Kwara State. The intention here is to look at the various purposes AI tools are used for by journalists and their knowledge of it as a tool. Thus, one major theme and two subthemes which revealed the account of the informants' experiences emerged.

Theme Two: Usage of Artificial Intelligence Tools

This theme looked at the rate of using AI tools for journalism among journalists' practicing in Kwara State. It reflects the purpose of using AI as a tool, as well as the knowledge of its usage for journalism. Based on the account of their responses, two sub-themes and several sub-subthemes emerged: (1) Purpose of usage (2) Knowledge of usage.



some of these tools as technology-aided which are invented to ease stress and make their tasks easier.

Sub sub-theme one (a): News Reporting

Accordingly, the Informants made the following submissions:

> It's used for news editing, paraphrasing and news commentary writing (Male, KI, Kwara, June, 2024).

We make use of the AI apps available online to aid our media work, Building questions (Female, KII, Kwara, June, 2024).

AI tool like Chatgpt is used for news gathering purpose, by posting information to develop or process (Male, KIV, Kwara, June, 2024).

AI technologies are employed to automate various aspects of the news and journalism process, especially for fact-checking and schedule of news report (Male, KV, Kwara, June, 2024).

Sub sub-theme one (b): Statistics and Update

In addition, Informant 6 stressed that:

Writing programme intros, gaining insights and knowledge about happenings, as well as for statistics gathering (Male, KVI, Kwara, June, 2024).

Sub-theme Two: Knowledge of Usage

Based on their knowledge of usage, journalists in Kwara state made varied submissions on the purpose they use AI tools for. Few of them sees AI tools as technology-aided tools invented to ease stress and make their tasks easier.

Sub sub-theme two (a): Highly Knowledgeable

According to Informant 4 and 3:

I have a good understanding of artificial intelligence usage for journalism practice. I do update my knowledge of AI through regular research to get updates about AI tools needed by journalists (Male, KIV, Kwara, June, 2024).

I have good knowledge of AI application in journalism. I got exposed to it via online (internet) and via courses on fact checking (Male, KIII, Kwara, June, 2024).

Sub sub-theme two (b): Fairly Knowledgeable

I only have basic knowledge, as my employer is yet to formulate guidelines or policies for deployment of AI. I am willing or available to learn more about (Female, KVII, Kwara, June, 2024).

Let me say, I have an average knowledge of artificial intelligence, about 55-60% (Male, KVIII, Kwara, June, 2024).

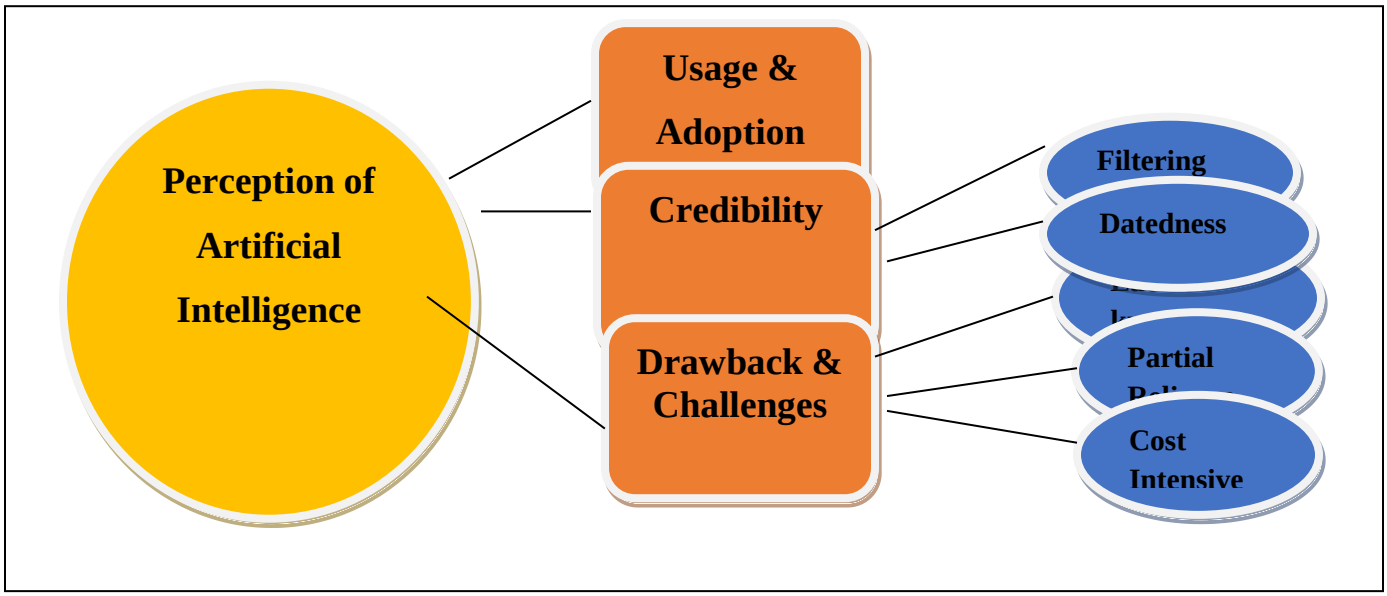
The medium where I currently ply my trade does not use artificial intelligence at the moment, the fair knowledge I have on it is as a result of my penchant for technology (Male, KIX, Kwara, June, 2024).

RO 3: Perception of Artificial Intelligence in Journalism practice in Kwara State

The above objective examines how journalists in Kwara state perceived AI usage in their activities. The intention is to obtain their responses on artificial intelligence as a tool for journalism, and this generated one theme and three sub-themes:

Theme Three: Perception of Artificial Intelligence as a tool in journalism

This theme examines how journalists practicing in Kwara state perceived AI as a useful tool for journalism. Also, their adoption of AI, as well as its constraints and drawbacks is examined. Based on their positions, three sub-themes and five sub-subthemes emerged: (1) Usage (2) Credibility (3) Adoption.



Fieldwork 3: Perception of Artificial Intelligence

Sub-theme One: Usage and Adoption

The informants made several submissions as regards their usage and adoption of AI tools:

I can't recall some of this AI applications off-hand, but I do use Ask Me and ChatPT frequently (Female, KII, Kwara, June, 2024).

AI voice generators, AI transcripts and image generator are the tools I am familiar with and have adopted over the time (Male, KIV, Kwara, June, 2024).

Some of the AI tools I am used to include Google Fact Check Tools, ClaimBuddy, Meltwater, Talkwalker among others (Male, KV, Kwara, June, 2024).

I am used to several AI tools such as TrueChat, GP Chat and Bling Chat amongst others (Male, KVIII, Kwara, June, 2024).

Sub-theme Two: Credibility

Here, some of the informants talk about the credibility of AI tools and applications, as well as what it is capable of doing:

Sub-theme two (a): Filtering

According to Informants 1 and 3:

AI generated contents are factual but journalists will need to filter the content to adhere to house style (Male, KI, Kwara, June, 2024).

Artificial intelligence does not have the answer to all our questions yet, especially in peculiar cases, some information might need to be sorted and updated as at the time of use (Male, KIX, Kwara, June, 2024).

Sub-theme two (b): Datedness

According to Informant 1 and 3:

To an extent, I will score AI 70% in terms of credibility, as its often state the date of last update. Meaning, while searching for facts, figures and information, one can easily get the last date of update (Male, KIII, Kwara, June, 2024).

Sub-theme Three: Drawbacks and Challenges

The Informants also talked about the challenges and drawbacks of AI as a tool:

Sub-theme three (a): Lack of knowledge

Low level of AI awareness and lack of technological infrastructural in some media establishments are part of the challenges restricting AI usage for journalism practice (Male, KIV, Kwara, June, 2024).

Lack of sufficient knowledge about the use of artificial intelligence is a major drawback for it usage in journalism (Male, KI, Kwara, June, 2024).

Sub-theme three (b): Partial Reliance

For me, AI is good but can't be adopted hundred percent, because flesh and blood is needed to file reports the best way possible for humans (Male, KV, Kwara, June, 2024).

AI is not very accurate with statistics in my sincere observation, there was a time I sought some information related to the economy of Nigeria, and got certain statistics that were inaccurate, perhaps because it was not updated as and when (Female, KVII, Kwara, June, 2024).

It does not provide unique responses, which implies that the onerous lies on me as a journalist to make it suit my distinct purpose (Male, KVIII, Kwara, June, 2024).

Sub-theme three (c): Cost intensive

> Some of the AI applications do make financial request. This means that means that the service is not free wholeheartedly (Female, KII, June, 2024).

VIII. DISCUSSION OF FINDINGS

The study examines journalists in Kwara state's awareness, usage and perception of Artificial Intelligence in their duties. Three objectives were critically looked into, and discussion of findings in this study is based on the responses from the informants in line with the research objectives. Findings from the interviews is presented, interpreted and analyzed below:

RO 1: Level of awareness of Artificial Intelligence among journalists in Kwara state

Findings reveal that there are different levels of awareness of AI among journalists in Kwara state. Informant 1 stands out as highly aware and optimistic about the impact of AI across all job sectors, emphasizing the full understanding and awareness of AI's relevance beyond journalism. This perspective suggests a broader appreciation of AI's influence in various professions, transcending the boundaries of journalism. In contrast, Sub-theme two represents a moderate level of awareness, as articulated by Informant 2. Acknowledging that AI is being introduced to some individuals and utilized by others but is not universally embraced. This reflects a phenomenon consistent with the diffusion of innovations theory. According to this theory, innovation adoption typically follows a bell-shaped curve, with innovators and early adopters at one end, followed by the early and late majority, and finally laggards at the other end. Informant 1, representing high awareness and enthusiasm for AI, can be considered an early adopter or innovator in this context, recognizing the transformative potential of AI not just in journalism but across various professions. Meanwhile, Informant 2 and Informant 9 fall within the early majority category, showing a moderate level of awareness and willingness to embrace AI but with some reservations, reflecting the transitional phase of adoption. Sub-theme three, marked by low awareness and reluctance to integrate AI, could be seen as representing the late majority or laggards, highlighting the need for education and training to bridge the knowledge gap among these journalists.

These findings resonate with views expressed by Okocha and Ola-Akuma, (2022), Noain-Sánchez, (2022) about the adoption of innovative technologies, such as AI tools in journalism profession.

RO 2: Usage of Artificial Intelligence tools in journalism practice among journalists in Kwara state

It emerged from findings that informants use AI tools for journalism practice to simplify their tasks and alleviate stress, with applications ranging from news editing to fact-checking. These findings align with the Technology Acceptance Model, indicating that AI is perceived as useful and easy to adopt. These findings are also consistent with studies by Anderson (2018) and Diakopoulos (2016), which emphasize the increasing role of AI in news production. The informants' knowledge levels, categorized as highly or fairly knowledgeable, reflect the need for ongoing education in AI for journalists, echoing recommendations by Picard (2019).

Findings from the data underscore AI's crucial role in news production and emphasize the necessity of continuous training to effectively utilize AI tools in journalism.

RO 3: Perception of Artificial Intelligence in journalism practice in Kwara state

Findings from the data show that informants in the study shared their usage and adoption of AI tools, revealing the forms of AI applications employed in journalism. Informant 2 and Informant 8 describes AI applications adopted such as "Ask Me" and "ChatPT," while Informant 4 adopted AI voice generators, transcripts, and image generators. Informant 5 listed tools such as Google Fact Check Tools and ClaimBuddy. These insights signify the varied AI tools that journalists utilize.

On the issue of credibility, the informants' calls for human oversight align with Siau and Wang's (2020) work, which emphasizes the need for human control and judgment when using AI in journalism. Informants 1 and 9 stressing the importance of content filtering and maintaining accuracy also relate to the concerns raised by Tosyali and Aytekin (2020) regarding the quality and accuracy of AI-generated content. Informant 3 noted that AI often indicates the date of the last update, which can aid in verifying the timeliness of information. These findings are in line with studies conducted by Clerwall cited in Tosyali and Çiğdem (2020), Siau and Wang (2020), Ombelet cited in Tosyali and Aytekin (2020), and Noam (2018) on the understanding of AI adoption in journalism. theories like the Technology Acceptance Model (TAM), emphasizing the need for AI to be perceived as useful and easy to use for successful adoption. Furthermore, the challenges and drawbacks of AI adoption, including limited knowledge, partial reliance on AI, and potential cost barriers, reflect the practical implications of integrating AI into journalism, as discussed in previous studies in the field. This study underscores the dynamic landscape of AI in journalism, emphasizing the importance of balancing human judgment with AI capabilities while addressing the associated challenges for successful adoption.

VIX. CONCLUSION AND RECOMMENDATIONS

The study examined the level of awareness, usage, and perception of artificial intelligence (AI) among journalists in Kwara state. The informants exhibited varying degrees of awareness, with some showing a high level of enthusiasm and early adoption of AI, while others fell within the early majority or late majority categories. These results align with diffusion of innovations theory, indicating that AI adoption in journalism is following a predictable pattern, with innovators and early adopters leading the way. It is clear that AI has made inroads into journalism practice in Kwara state, with informants using AI tools to streamline tasks and enhance their productivity. The informants' knowledge levels call for the need for continuous education and training in the use of AI to fully harness its potential in journalism practice.

Recommendations

1. To bridge the knowledge gap and encourage wider adoption of AI in journalism, it is imperative to provide education and training programs for journalists in Kwara state. Workshops, seminars, and online courses should be organized to enhance their understanding of AI and its applications in the field.
2. Media organizations and journalism associations in Kwara state should engage in awareness campaigns to inform journalists about the benefits and potential of AI.
3. Collaboration with technology providers and AI tool developers can help media organizations in Kwara state access and implement AI solutions tailored to their specific needs. Such partnerships can facilitate smoother integration and address the concerns about content filtering, accuracy, and timeliness.
4. Media organizations should develop strategies for the systematic adoption of AI, considering the varying levels of awareness among their staff. These strategies should include phased implementation and a structured approach to overcome resistance to change.
5. Encourage a culture of continuous learning and adaptation within newsrooms. Journalists should be motivated to stay updated on AI advancements and incorporate them into their reporting practices.
6. Regularly assess the impact of AI adoption on journalism practice, looking at improvements in efficiency, accuracy, and overall performance. This data can inform adjustments and refinements in AI integration strategies.

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