Appropriation of Artificial Intelligence in Broadcast Media Production in Kenya: Opportunities and Concerns

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Abstract

The adoption of emergent technologies, among them Artificial Intelligence (AI), in producing media commodities is increasingly becoming significant in the media industry in the 21st century. Studies theorizing AI embeddedness in broadcast media commodities production value-chains—from ideation, concept development, scripting, curation, and editing to post-production—have also emerged in various pieces of research, particularly from the Global North. There is, however, a paucity of studies documenting the state of AI appropriation in broadcast media production from the Global South. Therefore, this study examines the adoption of AI in producing broadcast media commodities such as news, commentaries, entertainment, and marketing content in Kenya using a qualitative systematic literature review of 1,262 scholarly publications. The review sampled eight (8) publications using exclusion and inclusion criteria and found evidence of the use of AI in producing media content, attendant affordances, limitations, and AI skills gaps for media producers in Kenya. While ethical dilemmas regarding labor issues, bias, and privacy concerns are widespread, AI dependency on the Global North remains.

Keywords: Artificial Intelligence, Broadcast Media Production, Affordances, Limitations, Ethical Concerns

Introduction

In today's dynamic landscape of the digital age, the media industry is undergoing profound transformations thanks to Artificial Intelligence (AI), which is one of the most transformative and disruptive forces. AI is a multidisciplinary technology incorporating natural language processing, machine learning, computer vision, and data analytics (Su, Togay & Côté, 2020). Artificial intelligence in broadcast media is already revolutionizing the production of news content, entertainment content, and advertisement curation, which have traditionally relied on human imagination, storytelling creativity, and flair. Consequently, integrating AI into the broadcast media industry presents a transformative opportunity for enhancing the different aspects of media operations, from content creation to distribution and audience engagement.

In the Global North, AI is characterized by rapid development and widespread adoption across various sectors, with the United States taking the lead in innovation and application (Wilson, 2021). Consequently, studies have documented the widespread adoption of AI in news production in the media industry (Shi & Lin, 2024; Eric Msughter et al., 2023; Medrado & Verdegem, 2024; Cardaş-Răduţa, 2024; Rostamian & Moradi Kamreh, 2024; Blankespoor et al., 2017; van Dalen, 2012). Studies also show widespread appropriation of AI in script writing, storytelling, video editing, and post-production phases in entertainment content production (Bennett, 2021; García, 2020). Haleem et al. (2022) similarly illustrated that artificial intelligence has enabled marketing strategies to develop pertinent and customized content through the use of AI-driven analytics and targeted advertising, thereby enhancing advertising campaigns and improving return on investment. However, studies show that rapidly integrating AI technologies into existing media infrastructures is technically challenging and requires ensuring system reliability and ongoing maintenance (Kim, 2024; Heng et al., 2020). The initial costs of deploying AI infrastructure, maintenance, and upgrades can be prohibitive (Kim, 2024; Oliver, 2013). The incorporation of AI tools in media production presents challenges concerning data security, user consent, and the potential for data misuse. These issues are essential for preserving public trust and preventing legal consequences (Chen et al., 2022). Besides, the rapid adoption of AI in the media industry presents ethical concerns, potential biases, transparency issues, and fairness, necessitating careful oversight to ensure responsible use (Zia, 2024).

The adoption of AI in Africa is characterized by slower development than in other parts of the world (Pate, 2021). This has resulted in a digital divide, where the benefits of AI and other digital technologies are unevenly distributed. The global media imperative can exert considerable influence; however, media experiences in developing nations, particularly in numerous African countries, are falling behind (Pate, 2021).. Nyam (2021) points out that the digital divide is a serious issue, with many developing countries, including those in Africa, struggling to keep up with the advancements in AI and digital media communication technologies. Overall, this divide is about access to technology and the capacity to use these technologies effectively.

The adoption of AI in Africa presents uneven adoption and challenges. In South Africa, Munoriyarwa et al. (2021) documented three levels of AI integration in the news production phases: research, production, and distribution, which are holistic, technological, or partial appropriation. In contrast, Adjei (2020) cited heavy reliance on ground research for content generation in Ghana, indicating a slower integration of AI technologies in media practices. This is compounded by the lack of investment and urgency in adopting digital technologies in many developing countries such as Kenya (Ogola, 2023; Kioko et al., 2022; Munoriyarwa et al., 2021).

The broadcast media industry in Kenya has been rapidly evolving ever since 1927 when the East African Broadcasting Corporation (EABC) went on air broadcasting BBC news to the then-British protectorates (Mbeke, 2008). As of June 2023, 193 TV stations and 233 FM radio stations were licensed to operate in Kenya (CA, 2023). Technological advancements and the rising demand for personalized and efficient media experiences are at the heart of this evolution. AI has emerged as a major player in this revolution, providing the necessary tools to improve automation, personalize content, and drive data-driven decision-making (Ngugi, 2024; Ogola, 2023; Kioko et al., 2022). However, cultural resistance and skepticism often toward adopting new technologies within media organizations impede the rate of AI integration in Kenya (Kioko et al., 2022), just as in other markets (Oliver, 2013). Furthermore, complying with evolving regulatory frameworks and broadcasting standards poses significant challenges, creating uncertainties and legal liabilities in Kenya (Kioko et al., 2022) and other Global South markets (Wu, 2022).

This study reviews past scholarly articles that are analysed to illuminate the scope of AI in broadcast media production, its affordances, and its limitations by harnessing the theories of technological determinism and the theory of emerging affordances/ limitations. Ethical considerations are also examined against the normative theories, namely Kant's (1724-1804) deontology theory, Mill's (1806-1873) utilitarianism theory, and Aristotle's (384-322 B.C.) virtue ethics. To achieve the overarching goal, these research questions were set:

RQ1: What is the scope of AI appropriation and its affordances in broadcast media production in Kenya?
RQ2: What are the limitations of AI appropriation in broadcast media production in Kenya?
RQ3: What are the ethical concerns regarding AI appropriation in broadcast media production in Kenya?

The paper is structured as follows. The "Introduction" section situates this study in light of AI as an emerging technology and projects its appropriation in the broadcast media production phase. The intersections of AI with news production, advertising, and entertainment are reviewed. The "Findings and analysis" section teases out findings on intersections of AI and broadcast media production and the theoretical underpinnings of the study's constructs of affordances and limitations. Theories in the continuum of emerging technology, namely Technological Determinism theory and the theory of emerging affordances/limitations, are reviewed to situate the study in Kenya's broadcast media landscape. Section "Methodology" presents a descriptive research method approach. The "Discussion & Critique" section focuses on the empirical, practical, ethical, and managerial implications, limitations, and future research suggestions. The "Conclusions" section concludes the essay.

Theoretical Framework

This study was situated within theoretical frameworks of technological determinism and emerging affordances/ limitations to project the importance of technology in society as harnessed in broadcast media production facets of news, entertainment, marketing, and advertising. Normative theories of ethics are proposed for evaluating ethical dilemmas in AI appropriation.

Technological Determinism

This theory posits that technology is the main driver of social change and influences human behaviour, culture, and society. The theory was postulated by Marshall McLuhan who hypothesized the Technological Determinism Theory in 1970 to predict and assess the role of new technologies. It argues that technological

innovation is the main factor that determines the direction of societal development, often implying that society's structures and cultural values directly result from the technologies it adopts.

This theory is important in illuminating how AI technology in the media industry is changing content creation, delivery, advertising, and employee dynamics (Drew, 2016). It recognizes that AI is not a mere passive instrument in addition to helping understand how it is shaping and reconfiguring the media landscape (Dafoe, 2015). This study used the theory to analyse the ways in which technologies have historically transformed, and is expected to continue transforming, the production of broadcast media.

Emerging Affordance and Limitations Theory

Emerging affordance and limitations theory, postulated by James Gibson in 1977, extends the concept of affordances to include the possibilities for action that an environment offers and the constraints and limitations that shape those possibilities. This theory posits that while certain affordances enable specific interactions, inherent limitations can restrict or alter how those interactions occur.

The theory was applied in this study to highlight a dual focus on AI affordances and limitations, emphasizing the importance of understanding both the opportunities and constraints present in any given situation (Ngugi, 2024; Ogola, 2023; Kioko et al., 2022; Shi & Lin, 2024; Eric Msughter et al., 2023; Medrado & Verdegem, 2024; Cardaş-Răduţa, 2024; Rostamian & Moradi Kamreh, 2024). Consequently, the theory positions AI appropriation in a more nuanced view of human-environment interactions in broadcast media production.

Ethics in Media Production

This study applied ethical frameworks to assess moral dilemmas regarding the use of AI in broadcast media production (Hagendorff, 2020; Monti, 2019). Consequently, utilitarianism, deontology, and virtue ethics theories were applied to examine ethical implications such as algorithmic bias, data privacy, and employee relations *vis a vis* the adoption of AI in broadcast media production.

Associated with Immanuel Kant (1724-1804), deontology theory asserts that the morality of an action is determined by its compliance with established rules and obligations, rather than by the outcomes it produces. It is often called rule-based ethics (Beauchamp, 1991; Salzman, 1995). Utilitarianism is a philosophical theory associated with Jeremy Bentham (1747-1832) and John Stuart Mill (1806-1873), emphasizing the importance of the consequences of actions. It advocates for achieving the maximum benefit for the largest number of individuals. This approach is a subset of consequentialism, where the moral worth of an action is assessed based on its overall utility (Shaw, 1998; McCloskey, 1957). In contrast, Aristotle's (384-322 B.C.) virtue ethics focuses on the character and virtues of the individual, evaluating ethical conduct based on personal qualities rather than specific actions or their outcomes. It emphasizes moral character and the development of virtuous traits (Hursthouse & Pettigrove, 2018).

Methodology

This study used a systematic review of the literature (SLR) situated in qualitative epistemology. This technique offers an unbiased examination of the broad body of scholarly articles associated with the study constructs. The SLR process typically involves several steps, including planning, selection, extraction, and execution, completed across four phases (Okoli, 2015). The objective is to identify a comprehensive range

of studies that address the research question by employing a robust search strategy that incorporates electronic resources and literature databases (Kitchenham & Charters, 2007). The search string is formulated based on the research questions and incorporates synonyms, abbreviations, and various spellings to guarantee extensive coverage (Levy & Ellis, 2006). The chosen studies are subsequently organized, classified, and examined to offer a coherent understanding of the research subject (Petersen et al., 2015). In support of this approach, Borrego et al. (2014) noted that a systematic literature review involves pinpointing relevant sources, evaluating them, and synthesizing key studies from diverse origins, such as academic databases, repositories, journals, books, and conference proceedings. This methodology minimizes bias by encompassing a broad spectrum of sources, ensuring that conclusions are drawn from a comprehensive grasp of the existing literature (Brothers et al., 2019). The aim of the systematic literature review was to address the three extended research questions mentioned earlier.

The inclusion and exclusion criteria were based on the study's constructs: artificial intelligence in broadcast media production, affordances, limitations, and ethical concerns. The inclusion criteria for this SLR were as follows:

i. The studies should be in English.
ii. The studies should be published between 2018 and 2024.
iii. The studies should directly answer one or more of the research questions of this study.

The exclusion criteria for this SLR were as follows:

i. Studies not written in English were excluded.
i. Duplicate articles were removed.
ii. Studies with no focus on AI in broadcast media production were excluded.

These criteria ensured that the review focused on relevant, high-quality, and original research studies contributing to understanding AI in broadcast media production. 1,262 articles were selected, but only eight were used in this study. The articles were retrieved from the databases of Google Scholar, Research Gate, and Sage journals. The selected articles are reviewed in the following section.

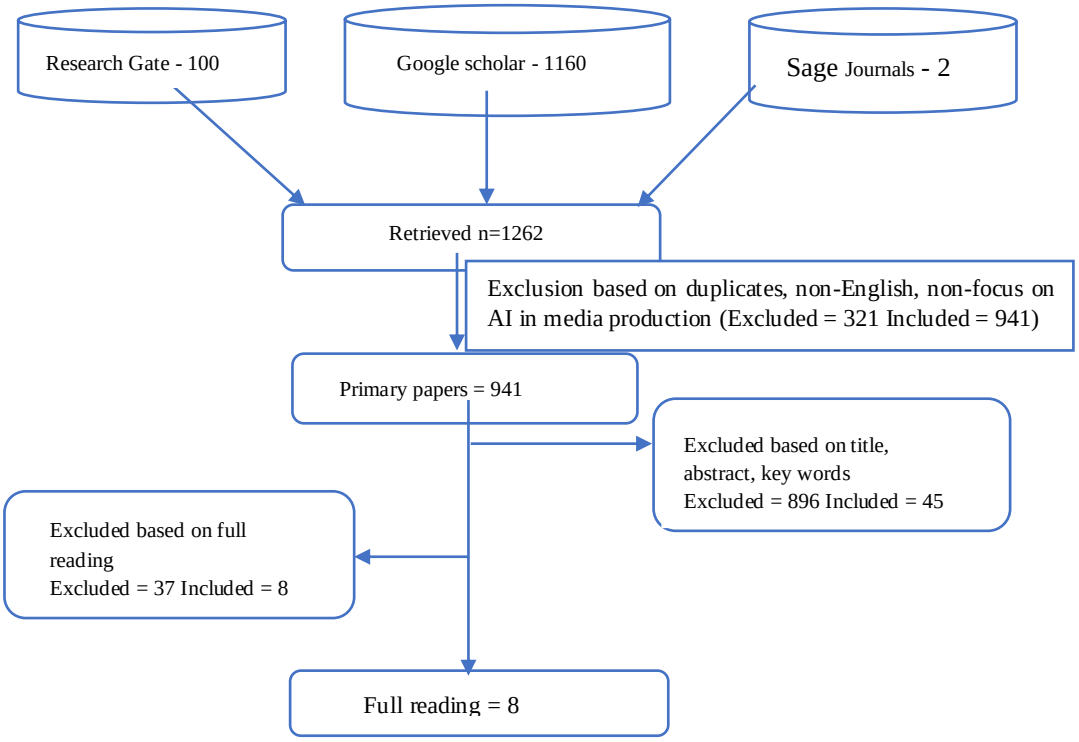

Figure 1: Shows the publications selection process.

Findings and Analysis

This section presents the findings from analyzing 1,262 articles based on the data extraction process per the research questions. The result presents the scope of AI used in broadcast media production, AI affordances, limitations, and ethical concerns, focusing on Kenya's media broadcast media industry. Table 1 presents a summary of the articles studied.

Table 1: Primary study by literature cited

Author	Title	Description
Shi, Yi, and Lin Sun. (2024)	How Generative AI Is Transforming Journalism: Development, Application and Ethics. Journalism and Media 5: 582–594. https://doi.org/ 10.3390/journalmedia5020039	The article discusses how generative artificial intelligence (GAI) transforms journalism, focusing on its development, application, and ethical implications.
Eric Msughter, A., Ogechi Perpetua, A., & Lillian Itiafa, A. (2023).	Artificial Intelligence and the Media: Revisiting Digital Dichotomy Theory. IntechOpen. doi: 10.5772/intechopen.108042	The article is about adopting Artificial Intelligence in journalism and communication practices, exploring the potential impacts on society and the digital dichotomy theory.

Medrado, A., & Verdegem, P. (2024).	Participatory action research in critical data studies: Interrogating AI from a South–North approach. Big Data & Society, 11(1). https://doi.org/10.1177/20539517241235869	The article discusses using participatory action research to interrogate artificial intelligence (AI) using a South-North approach in critical data studies.
Cardaş-Răduţa, Dan-Laurenţiu. (2024).	The Effectiveness and Limitations of Artificial Intelligence in Journalism. SAECULUM. 57. 111-119. 10.2478/saec-2024-0009.	The article discusses the effectiveness and limitations of artificial intelligence in journalism, focusing on automated journalism, AI-generated news anchors, and AI-based fake news detection.
Ngugi, A. I. (2024)	Innovating for efficiency: the use of generative AI in Kenyan newsrooms. (Unpublished master's dissertation). Aga Khan University, East Africa.	The article is a capstone proposal/project on the use of generative AI in Kenyan newsrooms for increased efficiency and productivity.
Kioko P.M., Booker N, Chege N., Kimweli P. (2022)	*The Adoption of Artificial Intelligence in* Newsrooms *in Kenya: A Multi-case Study*. European Scientific Journal, ESJ, 18 (22), 278.	The article is about the adoption of Artificial Intelligence in newsrooms in Kenya, focusing on factors driving or hindering adoption, opportunities for journalists, challenges, and the future integration of AI in news production processes.
Rostamian, S., & Moradi Kamreh, M. (2024).	AI in Broadcast Media Management: Opportunities and Challenges. *AI and Tech in Behavioral and Social Sciences*, *2*(3), 21-28. https://doi.org/10.61838/kman.aitech.2.3.3	The article explores the opportunities and challenges of implementing Artificial Intelligence (AI) in broadcast media management.
Ogola, G. (2023).	*AI, journalism, and public interest media in Africa: Scoping study to map the current state of artificial intelligence use in public interest media in Africa*. International Media Support.	The article is a scoping study on Artificial Intelligence use in African public interest media, authored by Prof. George Ogola and published by International Media Support.

The following review of the literature addresses the key research questions of this study.

RQ1: What Is the Scope of AI Appropriation and Its Affordances in Broadcast Media Production in Kenya?

This research question aimed to determine the types of AI technologies and how they are used in broadcast media productions for news, entertainment, and advertising. Studies have documented several AI tools in broadcast media production in Kenya. Ngugi's (2024) research highlighted that OpenAI's Chat GPT and Google's Bard are utilized for various tasks, including translating content into Swahili and other languages, adapting text for different social media platforms, and creating compelling headlines for news articles. (Ngugi, 2024). These tools help translate content automatically and create multiple language versions of a

story, easing the news production process (Munoriyarwa et al., 2021), especially for international media houses with operating bases in Kenya (CA, 2023).

SEMrush and *Ahrefs* are utilized for web research to pinpoint topics that are expected to resonate and attract interest among various audience groups (Ngugi, 2024). The automated transcription services provided by Otter.ai and Descript have revolutionized video editing workflows, enhancing accessibility and significantly shortening production timelines (Ngugi, 2024). The Mind Grasp.ai database and search tool streamline the process of sifting through large amounts of data, enabling the extraction of pertinent insights with greater precision (Ngugi, 2024). *Tableau* and *Infogram*, data visualization tools, display complex datasets in visually appealing ways, enhancing the storytelling aspects of reporting (Ngugi, 2024). Miller (2015) has documented the use of Natural Language Processing (NLP) tools such as Wordsmith by Associated Press (AP), Dreamwriter by Tencent (Zhou, 2015), and *ChatGPT* for data-driven news reporting and enhancing the speed of news production (Ngugi, 2024). *ChatGPT* is also utilized for different tasks: composing emails, scripting videos, copywriting, translation, and coding (The New York Times, 2023). These tools demonstrate how AI is being deployed within Kenyan newsrooms to transform operations for various functions and provide benefits that foster innovation and proficiency in the newsroom.

In their research, Kioko et al. (2022) documented extensive use of *Google Trends* and *Tableau* in analysing the prevalence of issues that online users were searching for in different regions to generate news, *Data Miner* and *Crowd Tangle* to track online conversations, reactions to posts on Twitter (currently X), and the pieces of information gaining more impressions (Thurman et al., 2019). These tools analyse social media and various news outlets to detect emerging breaking news and popular topics (Carlson, 2015; Schapals & Porlezza, 2020). Tools such as *CrowdTangle, Brandwatch, Dataminr, Newswhip, Tweetdeck, Hootsuite,* and *Google Trends* monitor online conversations and track stories on social media, aiding in content and news gathering and audience engagement (Ogola, 2023).

Ngugi (2024) found that broadcasters use *Adobe Premiere Pro* and *Magisto* to suggest edits and transitions based on the content, streamlining the production process and enhancing the quality of video outputs. Studies found that *Chartbeat* is extensively used for headline testing and content optimization, providing real-time analytics on story performance (Ogola, 2023). Ogola (2023) has documented the use of *Otter.ai* and *Google Speech-to-Text* to efficiently convert spoken content into text.

Most global media and journalism organizations, such as Associated Press (AP), BBC, Al-Jazeera, Sky News, Reuters, and Bloomberg, have operational offices in Kenya (CA, 2024). Studies on the use of AI in these media houses have shown that AI tools such as *Lynx Insight* by Reuters and *Cyborg* by Bloomberg are being used in production (Aissani et al., 2023). Rinehart & Kung (2022) found that *Maltego, TinEye, Quillbot Paraphraser, ChatGPT, Video Summarization,* among others, are widely used in broadcast media production. For example, *BloombergGPT* by Bloomberg is a tailored AI system designed for financial media, providing personalized services and linking to exclusive databases (Bloomberg, 2023). *Kuaibi Xiaoxin* by Xinhua News Agency is a writing robot that crafts news reports by leveraging real-time data collection and analysis (Zhong & Zhang, 2019). AI-powered tools like Reverse Search, *TinEye, RevEye, InVID*, and *Citizen Evidence Lab* are integrated into newsroom processes to combat misinformation and enhance content credibility (Ogola, 2023). An AI tool by *Dubawa* is designed to fact-check audio-based stories, particularly on radio, a widely used medium in Africa (Ogola, 2023).

The use of AI is beneficial in broadcast media. In their study, Davenport and Ronanki (2018) found that AI is useful for enhanced content creation. AI tools assist in generating articles, videos, and graphics, enabling faster and more efficient production. AI is used to develop graphic templates that automatically replicate, revise, and repost visual content based on prevailing news ecosystems, such as during the COVID-19 pandemic (Mutsvairo et al., 2020). AI algorithms can analyze user data to understand consumer preferences and behaviors, allowing media houses to create and deliver personalized content tailored to specific audiences (Gomez-Uribe & Hunt, 2016; Ogola, 2023; Ngugi, 2024). According to Chaffey (2020), AI can process vast datasets to identify trends and audience preferences, aiding strategic production decisions.

Today, media companies use AI analytics tools like Google Analytics to gain insights into audience behaviour, which informs content strategy. The ability to use AI to analyze social media data is particularly valuable as social media platforms are a key source of audience feedback and engagement in today's world (Manoharan, 2024). One of the most powerful applications of AI in social media analysis is sentiment analysis. AI algorithms monitor real-time social media interactions and track trending topics, providing producers with valuable information about how their content is received and discussed by the public (Sadiku et al., 2021).

Artificial intelligence enables media organizations to streamline repetitive tasks, boost productivity, and rethink conventional business frameworks (Aldoseri et al., 2024). Automation driven by AI improves operational efficiency, lowers costs, minimizes human error, and enables media companies to swiftly respond to evolving audience needs. Research indicates that tasks like editing and scheduling have been automated, freeing up resources to concentrate on creative endeavors. (Shi & Lin (2024); Eric Msughter et al. (2023). AI-driven chatbots and virtual assistants enable real-time communication between producers and audiences (Riikkinen et al., 2018). Chatbots engage with users on websites, social media, and messaging apps. They are equipped with machine learning capabilities, enabling them to understand, process, and respond to customer inquiries in real-time (Suta et al., 2020). AI tools are enabling producers to create more personalized, interactive, and engaging content, thereby enhancing viewer experience and loyalty.

AI is revolutionizing production techniques in broadcast media. For example, AI-driven editing software can assist in video editing by suggesting cuts, transitions, and effects based on the content (Ngugi, 2024). Moreover, AI can enhance audio quality through noise reduction and sound optimization, improving production value. In an era of misinformation, *TruthBuzz* tools are being employed to verify news content and fact-check information before it is broadcast (Aissani et al., 2023). These tools can analyse large volumes of data to identify false claims and provide accurate information, thus enhancing the credibility of news organizations (Ngugi, 2024).

RQ2: What Are the Limitations of Ai Appropriation in Broadcast Media Production in Kenya?

This research question aimed to scoop the limitations associated with AI technologies used in broadcast media production. While AI presents substantial benefits, it also raises concerns about the quality of content produced through these technologies. Despite its capacity to produce content at scale, AI often relies on existing data and patterns to generate new material. This limitation affects the accuracy and effectiveness of AI applications in newsrooms (Munoriyarwa et al., 2021). This can result in content that is formulaic, repetitive and that lacks the creativity that human creators bring to the table. Indeed, AI tools often exhibit

biases due to the datasets they are trained on, typically from Global North contexts. This raises concerns about the integrity and fairness of AI applications in the Global South (Ogola, 2023).

The existence of 'dirty data' (or incomplete, inaccurate, and inconsistent data) in Africa poses a significant challenge. Poor data quality can undermine the reliability of AI systems and erode public trust in media organizations (Ogola, 2023). AI struggles with understanding intricate emotions and complex issues, leading to standardized news that lacks a human touch (Dilmaghani et al., 2019; Andrew & Huang, 2023). For instance, AI-generated content may misinterpret context or fail to capture the emotional nuances of a story, leading to inaccuracies. Broussard (2019) echoed the same sentiments, citing that AI-generated news articles may lack the depth and context that human journalists provide, leading to potential misinformation.

AI can generate convincingly authentic fabrications, such as deepfakes, which blur the boundaries of reality and pose significant challenges to ensuring content authenticity (Marconi & Daldrup, 2018; Solon, 2023). AI models can perpetuate biases and stereotypes influenced by the data on which they are trained. This can lead to systemic biases and cultural hegemony in news content (Bianchi et al., 2023; Zhou et al., 2024).

AI is increasingly handling tasks traditionally performed by human workers, which has made the effects of AI on employment within the media industry become a critical area of concern. As AI systems take over routine tasks, there is an apprehension that the demand for human journalists may decrease, potentially resulting in job cuts in the industry (Kioko et al., 2022; Carlson, 2015). This anxiety is compounded by the need for new competencies to align with AI systems (Ngugi, 2024). For instance, BBC Africa was found to use an auto-translator for over 12 African languages for its East and Horn of Africa audiences, thus reducing demand for human translators (Kioko et al., 2022). However, AI technologies often struggle with translating and processing native languages accurately, which is a significant issue for media houses that broadcast in multiple languages (Marconi, 2020).

Compliance with broadcasting standards and legal liabilities are significant challenges, as the evolving nature of AI technologies often outpaces existing regulatory frameworks (Kioko et al., 2022; Wu, 2022). In Kenya, current regulations do not adequately address the distinctive challenges presented by AI, such as responsibility for AI-generated content and the need for transparency in AI decision-making processes (Ogola, 2023). This can create legal and ethical dilemmas for media organizations. Critics argue that while AI enhances content production efficiency, it does so at the expense of creativity, leading to a decline in the overall quality of media content (Anantrasirichai & Bull, 2022). Ngugi (2024) found that veteran journalists often distrust AI, fearing it may undermine traditional journalistic values and practices. AI raises issues related to data security, user consent, and potential data misuse, which are critical considerations for media organizations (Chen et al., 2022).

There is a significant skills gap in understanding and effectively implementing AI technologies within the Kenyan media. Many media professionals may lack the necessary training to leverage AI tools effectively, limiting the realization of these technologies' potential benefits (Ogola, 2023; Chege, 2022; Liu et al., 2021). This skills gap can hinder the overall integration of AI into media practices.

Limited budgets and resources make investing in new AI technologies risky for many media houses. The brisk pace of technological change also risks quick obsolescence (Ngugi, 2024; Munoriyarwa et al., 2021). Integrating AI technologies into existing media infrastructures is technically challenging and requires ensuring system reliability and ongoing maintenance (Heng et al., 2020). Kim (2024) noted that the initial

costs of implementing AI systems, maintenance expenses, and upgrades can be prohibitive for many organizations.

RQ3: What Are the Ethical Concerns Regarding AI Appropriation in Broadcast Media Production in Kenya?

This research question examined ethical dilemmas associated with integrating AI in broadcast media production across news, entertainment, and advertising. The advent and integration of AI systems elicit ethical questions in relation to the nature of work, the ensuing competencies and skills needed, the degree of quality in journalism, advertising, entertainment, professional liability, and the need to classify automated content (Rana et al., 2021; Aissani et al., 2023). Besides, poor data quality can hinder the ability of AI to generate reliable content or insights, considering that AI systems are heavily reliant on the quality of the data used for training. In Kenya, the availability of high-quality, diverse datasets can be limited, which may lead to biased or incomplete AI outputs (Ngugi, 2024; Ogola, 2023). Consequently, there is a risk that AI could produce fallacious or biased articles, which could significantly undermine the credibility of news organizations (Ngugi, 2024).

There is a risk that AI could institutionalize discrimination against marginalized groups through digital data practices. This could exacerbate existing inequalities and reduce coverage of public interest stories focusing on marginalized communities (Ogola, 2023). If an AI model is trained on data that disproportionately represents particular demographics, it may produce content that underrepresents or misrepresents other groups (Ferrara, 2023; Wen & Holweg, 2023; Bianchi et al., 2023; Zhou et al., 2024). This can lead to biased news reporting and content generation, which may reproduce racial, gender, community, and (or) class biases (Marconi, 2020).

AI can generate convincingly authentic fabrications, such as deepfakes, which blur the boundaries of reality and pose significant challenges to ensuring content authenticity. This has resulted in uneasiness about the spread of misinformation and the difficulty in verifying the authenticity of news content (Solon, 2023; Marconi & Daldrup, 2018). Shi and Sun (2024) argue that integrating AI raises questions about intellectual property rights and the legal accountability of AI-generated content. Indeed, there are unresolved questions about whether AI-generated entities are entitled to intellectual property rights, and disputes have already arisen over the unauthorized use of content to train AI models (Marconi, 2023 in Shi & Sun, 2024). Furthermore, significant concerns exist about who is accountable when AI systems make mistakes. Questions arise about legal liability, especially when AI-generated content is inaccurate or harmful. This issue is compounded by the lack of clear guidelines on AI's legal personhood and responsibility (Ogola, 2023).

AI in broadcast media prompts ethical questions regarding privacy and data usage. AI systems usually necessitate access to large amounts of personal data to function efficiently, which can lead to unease about user privacy and consent (Ngugi, 2024; Zia, 2024). AI-driven recommender systems can create 'filter bubbles,' where users are only exposed to information that reinforces their current beliefs. This can increase social and political divisions and reduce the diversity of information available to the public (Ogola, 2023). Ogola (2023) also found that most AI tools are designed to 'speak' English, which poses a problem in multilingual African societies. This limitation can hinder the effective use of AI in local contexts and reduce the inclusivity of AI applications in Africa.

Many journalists fear AI will replace human jobs, leading to professional precarity. This fear contributes to cultural resistance within media houses, where media practitioners are reluctant to embrace AI technologies (Ogola, 2023; Guanah et al., 2020; Nwanyanwu & Nwanyanwu, 2021). The anxiety is compounded by the need for new competencies to align with AI systems, potentially leading to job displacement (Ngugi, 2024). This raises ethical questions about the responsibility of media organizations to their employees and the broader impact on the job market (Munoriyarwa et al., 2021).

Discussion and Critique

The literature on the impacts and concerns of AI on broadcast media production was carefully reviewed to generate the themes for this study. While AI presents a plethora of opportunities, it also has its limitations and ethical concerns. The question of dependency by Global South arises while considering the appropriation of AI tools in broadcast media production in Kenya. The advantages are unbalanced globally due to the digital divide across different countries and regions. Additionally, AI tools rely heavily on high-quality input data to generate accurate and relevant content. Poor, incomplete, or biased data can lead to misleading or incorrect outputs. For instance, if an AI model is trained on partial data, it can produce biased content or reinforce existing stereotypes (Zarsky, 2016). To ensure AI-generated content is reliable, rigorous data cleaning and preprocessing are necessary which may not be possible in Kenya, owing in part to a lack of skilled manpower in the field of AI in the media organizations. Without proper data handling, AI outputs can be flawed and unreliable (Zuboff, 2019).

There is a lack of explicit policies and guidelines on using, controlling, and regulating AI in the media industry, especially in the Global South. In Kenya, multiple statutes and agencies that supervise broadcasting media are inherently deficient in skills and the regulatory teeth on AI. This regulatory gap can lead to ethical dilemmas and misuse of AI technologies (Monti, 2019). The use of AI raises important ethical dilemmas such as consumer privacy, consent in personal data disclosures, and the transparency of AI processes, necessitating a careful examination of governance frameworks. Ensuring that data is harvested and used with proper consent and in compliance with privacy regulations is essential to protect user rights (Binns, 2018). Moreover, obtaining informed consent from individuals whose data is used for AI training is a critical ethical consideration. Transparency in how data is collected, used, and managed helps build trust and ensures that users know and agree to the data practices (Buolamwini & Gebru, 2018).

AI-generated content has also been cited as lacking the creativity, nuance, and emotional depth supplied by human creators. While AI can produce technically accurate and coherent content, it may struggle to capture the subtleties and complexities of human expression (Martinez, 2022). AI can be used alongside human creators to overcome limitations in creativity and nuance. By combining the strengths of AI, such as efficiency and data analysis, with human creativity and emotional intelligence, content creation can achieve higher levels of quality and innovation (Broussard, 2019). Ensuring the accuracy and quality of AI-generated content requires ongoing human oversight and verification. Implementing quality control measures and review processes helps maintain the integrity and reliability of content produced by AI systems.

There is also the apprehension that the automation of content creation tasks through AI can lead to job displacement and changes in workforce requirements. While AI can handle repetitive and routine tasks, it may reduce the need for certain roles within content production (Carlson, 2015). To address job

displacement, reskilling and upskilling programs that prepare workers for new roles and responsibilities in AI-driven media production can be mainstreamed. This includes training in areas where human skills complement AI, such as creative oversight and strategic decision-making (Lewis, 2023). It is also worth noting that AI also creates new opportunities for employment in fields related to AI development, management, and integration. Emphasizing these new roles can help offset job losses and support a transition to an AI-enabled workforce.

Improving AI process transparency and explaining AI-generated outputs are crucial for accountability (Rivera, 2022). Conducting regular reviews of AI algorithms and their outputs helps ensure that they operate fairly and transparently. These audits can identify potential issues and biases, allowing corrective actions to be taken. Engaging stakeholders, including users, content creators, and regulators, in discussions about AI transparency and accountability, can also foster a more inclusive and responsible approach to AI appropriation.

Bias in algorithms has also been cited as a critical issue in the development and deployment of AI. When AI algorithms are trained on biased data or designed without sufficient consideration of fairness, they can preserve and augment existing societal biases. This can result in inequitable outcomes and misrepresentation of diverse populations. Addressing biases requires ongoing efforts to ensure fairness and inclusivity in AI systems (Ogola, 2023; O'Neil, 2016). This underscores the need for the implementation of bias mitigation strategies, such as diverse data sourcing, algorithmic adjustments, and regular bias assessments, which help reduce the impact of biases in AI-generated content thereby contributing to more equitable and accurate content.

Conclusion And Recommendations

This paper examined the scope of AI appropriation in broadcast media production in Kenya and highlighted benefits, limitations, and ethical concerns. The study underscores AI imperatives in the evolving media production, particularly in the era of emerging technologies in Kenya. The study concludes that while evidence of the use of AI in production is evolving, skills gaps exist for producers to better harness AI in the context of the social realities of Kenyan media consumers. Further, AI tools cited in the study were found to have originated from the Global North pointing to the realities of digital divide and dependency by the peripheral states in the Global South. Ethical concerns have also been observed to constitute how AI is being adopted, portending dilemmas regarding labor issues, bias, and privacy.

AI is projected to play a pivotal role in the evolution of broadcast media production well into the future. To survive the evolution, the study recommends that the broadcast media industry leverage AI tools while minimizing potential risks and ethical concerns. The study recommends longitudinal studies to track AI integration's long-term benefits and limitations in the broadcast media. Furthermore, since most studies were found to be region-specific, thus limiting the generalizability of findings across different cultural and regulatory environments, a study encompassing wider geographic reach would provide a more comprehensive understanding of AI diffusion, benefits, challenges, and ethical concerns in the dichotomy of Global North and South media discourse.

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