APPRAISAL OF THE BENEFITS AND DYSFUNCTIONS OF ARTIFICIAL INTELLIGENCE (AI) AMONG YOUNG COMMUNICATION RESEARCHERS OF THE UNIVERSITY OF JOS

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ABSTRACT

The increasing reliance on artificial intelligence (AI) in researches across various disciplines has generated concern among scholars and academic instructors in the department of Mass Communication of the University of Jos. This concern prompted the researchers to explore the benefits and the dysfunctions of the use of artificial intelligence by young communication researchers of the University of Jos. The study employed Technological Acceptance Model (TAM) which describes and predict how users come to accept and use technology based on their perceptions of its usefulness and ease of use. The study adopted a qualitative approach using interview guide to collect data from the respondents which consisted of Masters Class of Mass Communication (Class of 2022) of the University of Jos, who are graduating 2025. Using availability sampling, the researchers interviewed 20 out of the 48 young scholars in the class and data collected were analyzed and presented in form of narration. The study found out that young communication researchers of the university of Jos use AI in research and that AI is faster, easy to use, gives access to helpful material and simplifies the researchers' tasks. It was also revealed that AI exposes the researcher to the academic crime of plagiarism, kills their critical thinking skills, creativity and make the researchers professionally unproductive. The researchers recommended that communication researchers should stay updated in AI's advancements to leverage its potentials while understanding its dysfunctions in order to foster human critical thinking, creativity and avoid plagiarism.

Keywords: Benefits, dysfunctions, artificial intelligence, communication, and researchers

Introduction

The emergence of artificial intelligence (AI) has transformed the numerous facets of modern life revolutionising the way we work, live and interact. For the past few decades, AI has advanced from the niche area of research to a ubiquitous technology with indispensable impact affecting various academic disciplines, economics, industries and societies.

Historically, it has been noted that Artificial Intelligence (AI) has undertaken significant transformations since its inception in the mid-20th century, McCarthy et al. as cited in (Radford et al, 2019). The term "Artificial Intelligence" was coined in 1956 by John McCarthy, a computer scientist and cognitive scientist, who organized the Dartmouth Summer Research Project on Artificial Intelligence (LeCun et al, 2015).

Therefore, the early developments in AI were marked by the creation of the first AI programme, called Logical Theorist, by Allen Newell and Herbert Simon in 1956 (Newell & Simon, 1956). This programme was designed to simulate human problem-solving abilities. The 1960s saw the emergence of the first AI laboratory at Stanford Research Institute (SRI), founded by Douglas Engelbart (Radford et al, 2019).

Similarly, the 1970s and 1980s witnessed the development of rule-based expert systems, which were designed to mimic human decision-making processes (LeCun et al, 2015). These systems according

to history were widely used in various industries, including banking, healthcare, and manufacturing. However, the 1980s saw the rebirth of machine learning, a subset of AI that enables machines to learn from data without being explicitly programmed (Manyika sl., 2017). Machine learning has since become a cornerstone of modern AI, with applications in image and speech recognition, natural language processing, and predictive analytics.

The year 2000s furthermore, witnessed the emergence of deep learning, a type of machine learning that uses neural networks with multiple layers to analyze data (Krizhevsky et al.,2012). Deep learning has revolutionized various fields, including computer vision, natural language processing, and speech recognition.

Today, AI is ubiquitous, with applications in various industries, including education, healthcare, finance and transportation (Manyika, et al, 2017). The rise of big data, cloud computing, and the Internet of Things (IoT) has further accelerated the development and adoption of AI. AI-powered systems can analyze vast amounts of data, recognize patterns, make predictions, and learn from experience. This has led to significant improvements in efficiency, productivity, and decision-making across various sectors. Specifically, the emergence of Artificial Intelligence (AI) has profoundly impacted communication research, transforming the way researchers collect, analyze, and disseminate data (Kwak & Kim, 2017). AI has revolutionized the field of communication research, presenting both opportunities and challenges for researchers (Westerman et al., 2019).

Hence, the adoption of AI has enhanced communication research by providing new methods and tools for data analysis, content creation, and audience engagement (Grimmer & Stewart, 2013). It enables researchers to gain deeper insights into communication phenomena (Kwak, Lee & Kim, 2015). For instance, AI-powered sentiment analysis can help researchers understand public opinion and sentiments towards various topics. While AI-driven content analysis can facilitate the examination of large datasets of text, images, and videos (Zuboff, 2019). Furthermore, AI has also changed the way researchers communicate their findings. AI-powered tools can facilitate the dissemination of research findings through social media, blogs, and other online platforms (Wouters et al., 2015).

Despite these benefits however, AI has raised important concerns among communication researchers. The increasing reliance on AI-powered tools has led to concerns about bias, accountability, and transparency in research (Bostrom &Yudkowsky, 2014). AI algorithms can perpetuate existing biases and stereotypes, leading to flawed research findings (Barocas et al., 2019). Moreover, the lack of transparency in AI decision-making processes can make it difficult for researchers to understand and interpret the results generation and results transmission via social media or blogs (Ananny & Crawford, 2018).

However, there has also been concerns about the credibility and validity of research findings, as well as the potential for misinformation and disinformation in situation where communication researchers depended on AI (Lazer et al., 2018). There is an issue of some researchers becoming lazy due to over dependence on AI there by making unrealistic researches. It is against this background that the research is set to appraise the benefits and dysfunctions of AI among the young communication researchers of the University of Jos.

Statement of the Problem

The advent of Artificial Intelligence (AI) has reformed the field of communication research, offering unprecedented opportunities for data analysis, content creation, and audience engagement (Westerman et al., 2014). However, the increasing reliance on AI among young communication researchers raises important questions about the benefits and dysfunctions of this technology. Although, AI has the potential to enhance the quality and efficiency of communication research, enabling researchers to analyze large datasets, identify patterns, and make predictions with greater accuracy (Kwak, et al, 2015). AI-powered tools, such as natural language processing and machine learning algorithms, can also facilitate the analysis of complex communication phenomena, such as social media conversations and online networks (Grimmer & Stewart, 2013).

However, the increasing reliance on AI among young communication researchers has been considered problematic and the potential dysfunctions of this technology constitute a problem. For example, the use of AI-powered tools can also lead to plagiarism, lack of critical thinking and media literacy skills among young researchers, as they may rely too heavily on automated processes and algorithms (Livingstone, 2014). Moreover, AI algorithms can perpetuate biases and stereotypes, particularly if they are trained on datasets that reflect existing social inequalities (Noble, 2018).

The problem if not solved could lead to lack of nuanced understanding of complex communication phenomena or research findings that are not grounded in the complexities of real-world communication phenomena. As a result, recommendations of such researches could be misleading, ineffective and would fail in addressing emerging trends. It is against the above problem that the study was set evaluates the benefits and dysfunctions of AI tools among young communication researchers.

Research Questions

1. Do young communication researchers of the university of Jos make use of Artificial Intelligence?

2. What are the benefits of Artificial Intelligence among young communication researchers of the university of Jos?

3. What are the dysfunctions of Artificial Intelligence among young communication researchers of the university of Jos?

Literature Review

Concept of Artificial Intelligence

One of the most popular terms in modern literature is artificial intelligence. Scholars from a variety of disciplines are actively attempting to take advantage of artificial intelligence in their own fields of study (Chiakaan et al 2024). Artificial intelligence (AI) refers to the ability of machines and robots to mimic human cognitive processes, such as visual and verbal recognition, dialect interpretation, and virtual decision-making.

AI has a remarkable place in all industries because of its ability to think and behave like people. Artificial intelligence is present in many aspects of our lives, from smart sensors to personal assistants (Etumnu & Azubuike, 2024; Bostrom, 2014). The field of higher education has seen many changes as a result of recent advancements in AI. Teachers and students can have an amazing educational experience with the aid of artificial intelligence.

There are several types of AI, including Narrow or Weak AI, General or Strong AI, and Super intelligence. Narrow or Weak AI is designed to perform a specific task, such as facial recognition, language translation, or playing chess (Broy et al., 2017). General or Strong AI, on the other hand, is designed to perform any intellectual task that a human can, such as reasoning, problem-solving, and learning (Bostrom, 2014). While superintelligence AI is one that is significantly more intelligent than the best human minds, and is capable of solving complex problems that are unsolvable by humans.

Artificial Intelligence and Communication Research

By artificial intelligence in communication research, we mean the application and adoption of AI technologies, such as machine learning, natural language processing and computer vision to analyse, understand and generate human communication. AI is applied in various communication researches like content analysis, survey research, case study, ethnographic and participant observation. Hence, the future of AI in communication research looks promising with several trends and development expected to shape the field (Kaplan, 2019).

Additionally, artificial intelligence has a wide range of applications across various industries, including healthcare, finance, education, and transportation. In healthcare, AI is being used to diagnose diseases, develop personalized treatment plans, and improve patient outcomes (Johnson & Khoshgoftaar, 2019).

AI is increasingly being used in communication research to analyze and understand human communication patterns (Kim et al., 2018). AI-powered tools can analyze large datasets of communication texts, such as social media posts, emails, and text messages, to identify patterns and trends (Grimmer & Stewart, 2013).

Benefits and Challenges of Artificial Intelligence

The era of artificial intelligence has reformed the landscape of communication research, offering unprecedented benefits for scholars to understand, analyse and predict human communication patterns. AI has the potentials to augment traditional research methods enhance data analysis and provide novel insights into the complex dynamics of human communication, researchers can now tackle complex research questions with greater, accuracy and efficiency.

The benefits of AI however, include improved efficiency, enhanced decision-making, and personalization. AI can automate repetitive tasks, freeing up human resources for more strategic and creative work (Brynjolfsson & McAfee, 2014). AI can also analyze large amounts of data, identify patterns, and make informed decisions faster than humans (Kaplan &Haenlein, 2019).

However, AI also raises several challenges, including bias and fairness, job displacement, expensiveness, privacy and security concerns. AI algorithms can perpetuate and amplify biases present in the data used to train them, leading to decisions and outputs that discriminate against certain individuals or groups (Barocas et al., 2019). The increasing automation of tasks and jobs by AI systems also raises concerns about the potential displacement of human workers (Ford, 2015).

The increasing reliance on Artificial Intelligence (AI) in research has raised concerns about its potential effects on the research process and outcomes (Kaplan &Haenlein, 2019). While AI has the potential to revolutionize research, over-reliance on AI can have several negative consequences. They include loss of critical thinking skills, lack of contextual understanding, homogenization of research methods and misleading findings.

Despite these challenges, the future of AI looks promising, with several trends and developments expected to shape the technology in the coming years. These include advancements in machine learning and deep learning, the expansion of autonomous systems, and the emergence of general AI (LeCun et al., 2015).

Review of Empirical Studies

Kim & Lee (2019) conducted a study on The Impact of AI on Communication Research: A Survey of Young Researchers. This study explores the perceptions and attitudes of young communication researchers towards AI. The authors conducted an online survey of 200 researchers aged 20-35 to gather data on their experiences, expectations, and concerns regarding AI.

The study found out that young researchers perceived AI as a useful tool for data analysis and content creation, but also express concerns about AI's potential to replace human researchers. This study is similar to the study at hand in the sense that they all aimed at communication researchers. However, the study focused on the perspectives of young researchers who were accessed online, neglecting AI dysfunctions which is one of the objectives of the study at hand. The study at hand also captivated a particular population in contrast with the reviewed study.

A study by Chen, & Lee, (2020) on Artificial Intelligence in Communication Research: A Systematic Review, being a systematic review, the study examines the current state of AI research in communication studies. The authors analyzed 150 studies published between 2010 and 2020 to identify trends, opportunities, and challenges. It found out that AI can enhance communication research in areas such as data analysis, content creation, and audience engagement.

However, AI also raises concerns about bias, accountability, and transparency. This study is relevant to the study at hand in that they both concentrate on AI and communication research. Notwithstanding, it depended on existing studies from 2010 to 2020, while the research at hand tends to explore current realities associated with AI use in communication research.

The impact of Artificial Intelligence on communication research was a study conducted by Junghyun & Kim, in (2017). The study which was conducted in United States of America explored the perceptions and attitudes of communication researchers towards AI. The study surveyed 300 researchers from universities and research institutions. The study found out that AI is perceived as a useful tool for data analysis and content creation but raises concern about job displacement and bias. This study is relevant to the study at hand because they both explore AI and communication research. However, geographical gap remains a key factor and the fact that the study under review was a survey while the study at hand is an in-depth interview.

A study by Chiakaan, Gambo & Woyopwa (2024) on Challenges and prospects of artificial intelligence in Nigerian journalism practice: A narrative review, examined the dynamic inter-play between AI technology and journalism in Nigeria addressing key concepts, theoretical framework, challenges and prospects. The study had its root from existing studies and literature on AI in Nigerian journalism practice.

The study identified challenges such as infrastructural limitation, financial constraints, cultural resistance among others; while its prospect have to do with enhancing journalistic contents, data-driven reporting, improved audience engagements and so on. This study captures a key variable of the study at hand, nevertheless aside its reliance on existing studies and literatures, it studied AI and journalism practice while the study at hand focused on AI and communication scholars relying on data that shall be gathered and not existing literature.

Theoretical Framework

The study used Technological Acceptance Model (TAM), developed by Fred D. Davis in 1989, has become a cornerstone in the study of technology adoption. It aims to explain and predict how users come to accept and use technology based on their perceptions of its usefulness and ease of use (Legris, Ingham & Collerette, 2015). This model has been widely applied across various domains, including information systems, education, healthcare, and media, making it particularly relevant for examining how modern technologies are adopted by users, in this case how AI is accepted by young researchers. TAM is built upon two primary factors that influence technology adoption:

Perceived Usefulness (PU) – This refers to the degree to which an individual or group believe that using a specific technology will enhance their job performance. In the context of AI and its acceptance by young researchers, PU pertains to how young researchers perceive the usefulness of AI. If young researchers believe that adopting AI technology will help them in conducting research, they are more likely to embrace this innovation.

Perceived Ease of Use (PEU) – This refers to the degree to which an individual believes that using a particular technology will be free from effort. In researcher's point of view, this relates to the usability of AI tool in gathering, analyzing and interpreting data or AI-based editing tool. If the technology is intuitive, simple to use, and does not require extensive training or experience, it is more likely to be adopted by young researchers.

According to TAM, both Perceived Usefulness and Perceived Ease of Use influence an individual's attitude toward using the technology, which directly impacts their behavioural intention to use it. The

stronger the positive attitudes toward the usefulness and ease of use of a technology, the greater the intention to use it, and consequently, the higher the likelihood of its actual use in daily activities (Anaeto, Onabanjo and Osifeso, 2008). The Technology Acceptance Model is particularly relevant in analysing how young communication researchers, perceive and adopt this technology and how they make us of it.

Methodology

The study adopted a qualitative method using in-depth interview. The population of the study consisted of Masters Class of Mass Communication (Class of 2022) of the University of Jos, who are graduating 2025 and are 48 in number. The researchers focused on this class because the objective of the study is to explore benefits and dysfunctions of AI among young communication researchers and not in other disciplines.

Using availability sampling, the researcher interviewed 20 out of the 48 young scholars in the class. This was because the researchers reached a saturation point and the 20 were the ones who made themselves available as others could not be reached nor respondent to the questions.

Choji et al (2024) posit that availability sampling is a non-probability sampling that involves selecting units or individuals who are readily available and accessible. Interview guide was the instrument used for data collection. Data was collected via both face-to-face interview and voice note on WhatsApp, after which the data collected were analyzed and presented in form of narration.

Results and Discussions

Do you make use of Artificial Intelligence in conducting your research? Seventeen respondents said, yes, they use artificial intelligence for research while three respondents said they use artificial intelligence sometimes but not frequently. From this revelation, majority of the young communication researchers of the university of Jos use AI in conducting research with negligible number using it occasionally.

The results tally with that of Kaplan et al (2019) which revealed that the increasing availability and accessibility of Artificial Intelligence (AI) tools have transformed the research scenery. Almost all researchers leverage the advantage of AI technology in their researches. (Kaplan &Haenlein, 2019). Also, Lipton (2018) notes that the cumbersome processes involved in research, literature search, reviews of empirical studies as well as data collection and analysis in the past decades have been improved significantly beyond imagination through the help of internet and now AI technology. Hence, researchers now leverage AI-powered tools to streamline various aspects of the research process. In essence, AI has now become an indispensable tool in research workflow, facilitating efficiency, accuracy and effectiveness.

What are the benefits of using Artificial Intelligence in conducting research? The respondents revealed that the benefits of using artificial intelligence in research are enormous identifying speed, access to information, ideas and helpful materials, and giving insights on complex phenomena as benefits. Another respondent said, "One of the benefits of using AI is that it is quite fast and easy to use, it gives the feeling as though one is communicating with a person and lastly, one can frame, reframe questions in whatever manner and even ask for suggestions and recommendations from AI, giving one a better sense of understanding" [Respondent 3]. "It saves time, cost and energy as against the traditional methods and make presentation more appetizing" [Respondent 15].

AI technology acts as an extension or representative of the investigator by answering complex questions on potential, current and past researches. AI tools can help to improve grammar and structure in academic work, and it can also provide new ideas and summarize journals or articles, making it easier to understand. Another respondent said, it gives her a guide on how to put up with her research analysis.

The findings validate those of Kaplan & Haenlein (2019) and Huang & Rust (2017) respectively. AI is incredibly fast and efficient, allowing users to quickly process and analyze large amounts of data (Kaplan &Haenlein, 2019). It can analyze large datasets rapidly and identify patterns that may not be apparent to human researchers.AI-powered interfaces, such as chatbots and virtual assistants, provide a

human-like interaction experience, making it feel as though one is communicating with a person (Huang & Rust, 2017).

It could be noted that some of the benefits respondents gave for using AI technology is its fastness, improvement in research efficiency and easy to be used. This corroborates the Technological Acceptance Model (TAM) that is used for the study which holds that users adopt new technology, considering factors like perceived usefulness and perceived ease of use of such technology (Davis, 1989).

What are the dysfunctions of using Artificial Intelligence to conduct research? The respondents revealed that making use of artificial intelligence in research is detrimental to the researcher(s) and the research outcome. They maintained that the use of AI exposes the researcher to the academic crime of plagiarism, kills critical thinking skills, misguides researchers, AI is prone to errors, it lacks credibility and could be bias.

The increasing use of AI in research can lead to an over-reliance on technology, potentially stifling human critical thinking and creativity of researchers. "AI can sometimes give false information or better still make mistakes. I have had to correct AI a couple of times although, on an informal discussion. It can also cause a researcher to become lazy in consulting other materials and verifying information gotten" [Respondent 3]. "It kills creativity of the mind and sometimes it gives errors and unverified information" [Respondent 7]. "It makes the researcher professionally unproductive and robes them of integrity and knowledge" [Respondents 15].

The findings confirmed the findings of existing researches. To start with, Kaplan & Haenlein (2019) found out that over reliance on AI powered tools can lead to decline in critical thinking. Algorithms can perpetuate biases in the data used to train them leading to misguided results (Barocas et al, 2019). Making use of AI technology in conducting research leads to decline in critical thinking and creativity making researchers less engaged (Brynjolfsson et al, 2014). The application of AI-generated research results without proper validation and verification can endanger the institution that relies on them or policy makers who may apply it (Lipton, 2018).

Conclusion

The integration of Artificial Intelligence (AI) in communication research has yielded mixed results, presenting both opportunities and dysfunctions. While, AI offers numerous benefits in terms of efficiency, accuracy, and reliability, it also presents challenges related to plagiarism, making researchers lazy, poor critical thinking ability, bias, misguidance and incorrect information.

To harness the full potential of AI in communication research then, it is essential to acknowledge these limitations and develop strategies to mitigate them. By striking a balance between the benefits and dysfunctions of AI, communication researchers can leverage AI-powered tools to advance communication research while maintaining the integrity and validity of their findings.

Recommendations

Based on the findings, the researchers recommended the following:

1. Communication researchers should establish clear guidelines for AI use in research, understanding its capabilities and limitations.

2. Communication researchers should stay updated in AI's advancements to leverage its potentials while understanding its dysfunctions.

3. Communication researchers should use AI as a tool to augment research tasks, rather than replacing human critical thinking, creativity and plagiarizing others' works.

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