Contemporary Tasks for Jordanian Journalists in the Era of Artificial Intelligence

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Abstract

Artificial intelligence (AI) is a tremendous technological advancement that impacts journalism. The expansion of AI throughout the news industry could help manage routine tasks traditionally performed by journalists, which unburdens journalists from mundane tasks and allows them to reallocate their time to other novel responsibilities. The tasks that AI may be able to manage include news gathering, translation, fact-checking, and responding to audience inquiries. The current study focuses on new journalistic tasks for journalists in the era of AI. Based on the Theory of Diffusion of Innovation (DOI), a qualitative approach was adopted for this research, which focuses on Al-Mamlaka TV in Jordan. The research relies on in-depth interviews that were conducted among 14 journalists who work in the Al-Mamlaka TV newsroom in Amman. Informants were selected from various positions in the newsroom using a snowball sampling technique. Thematic analysis was used to determine results. The findings reveal three main tasks that journalists at Al-Mamlaka TV face in the presence of AI in their newsroom. First, the need to monitor and supervise AI-generated content. Second, the importance of dealing with data and algorithms. Last, the need to leverage their personal advantage of the creative human touch while producing news content with AI. The study provides awareness as it pertains to journalists using AI in newsrooms.

Introduction

The use of artificial intelligence (AI) techniques in journalism is a growing trend among media organizations (Ali and Hassoun 2019; Serdouk and Bessam 2023). Media companies are increasingly integrating AI into the field of journalism (Parratt 2021). The reliance on technological innovations has grown in journalism, as evidenced by the proliferation of websites, social media platforms, and data journalism. AI technologies are expected to

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revolutionize journalism, which will significantly impact a journalist's daily tasks and performance (Broussard et al. 2019). The potential of AI to revolutionize the activities of journalists is immense. More specifically, routine duties may become completely automated, which allows journalists to allocate more time to the core aspects of their occupation. However, these benefits are also accompanied by concerns regarding potential job losses and the questioning of their societal standing (Peña-Fernández 2023).

There are many tasks that AI cannot accomplish without human intervention, such as creativity and innovation. Journalists possess advantages in innovation and creativity throughout the process of preparing and presenting news stories, which AI cannot yet achieve (Lewis et al. 2019). Even as the prevalence of AI in journalism increases, the role of human journalists will remain essential due to their unique skills and perspectives (Luttrell et al. 2020). Human journalists can help produce better and more accurate content by working with AI algorithms, while also maintaining the human touch that is considered crucial for good journalism (Ellekrog 2022).

Current studies primarily focus on the tasks that AI can perform in newsrooms (de-Lima-Santos and Ceron 2021; Finnset 2020; Munoriyarwa et al. 2023). Meanwhile, some studies have focused on the new tasks that journalists can perform in the age of AI in newsrooms (Lewis et al. 2019; Serdouk and Bessam 2023). Studies on the adoption of AI in newsrooms are more profound in the Western context, which involves many globally recognized news outlets. It is common knowledge that the Western world are the primary innovators of this novel technology that imposes itself directly and indirectly throughout the world. Similarly, the adoption of AI in newsrooms is more profound in the West, while other regions are forced to catch up. Despite significant advancements produced by AI, there are still doubts and challenges surrounding AI in the journalism industry (Marconi 2020). Successful technological innovation is typically diffused throughout society. Yet, its degree of diffusion depends on many complexities. While adoption of any technology has pros and cons, its effectiveness depends on many factors. As it pertains to journalism, one factor is the readiness of the journalists to adopt this novel technology. Within the context of newsrooms and AI adoption, the known challenges have been identified in a Western context of news reporting. Comparatively, little is known for many other parts of the world. However, the number of studies focusing on non-Western newsroom practices is increasing. Journalistic practice in the West may differ from other nations, particularly those outside of the West, which makes each localized study unique and important. With the innovation of AI in newsrooms, this study aims to explore its adoption among Jordanian journalists at Al-Mamlaka TV. It aims to answer the following question: What are the new tasks for journalists at Al-Mamlaka TV in the age of AI?

AI in Jordanian Newsrooms

With the adoption of AI throughout the globe, including the Arab nations, knowledge of how this technological transformation will impact working conditions is vital. A survey conducted among Jordanians revealed that 72 percent of respondents believe AI will transform working methods in the next five years (IPSOS 2024). Meanwhile, Alzoubi found that Jordanian journalists seek to benefit from modern technological tools to improve their news content (2022). For instance, Lewis and Al Nashmi (2019) found that 91 percent of Jordanian journalists identified effective training in data journalism as their most important need. Similarly, as AI adoption is still in its early stages, Jordanian journalists must strive to understand its impact to their daily tasks.

In our research, we found that Jordanian journalists are eager to integrate AI into mainstream journalism. Jordanian journalists are enthusiastic to learn modern skills, such as digital and data journalism, as well as the challenges and opportunities presented by AI applications (Hussein 2021). In 2021, the Jordanian newspaper Al-Dustour became one of the first in the region to implement AI in its journalistic practices (Dalal 2019). In 2023, Roya TV launched Fareed, the first Arabic-speaking AI TV presenter in Jordan (Al-Kadaa 2023). However, the introduction of AI in journalism raises many interesting questions as it pertains to journalism (Graefe and Nina 2020). Nevertheless, AI adoption should provide opportunities for the enhancement of journalistic production.

Opportunities in Current AI Practices and Future Outlooks

Digital technology has accelerated change and revolutionized methods of news production, delivery, and consumption (Ahmad 2017). However, as with any novel technological advancement, adoption will have setbacks. Chan-Olmsted (2019) indicates AI will significantly impact the global workforce by enabling intelligent software to perform various economic operations. Van Dalen (2012) concludes this will increase media output, while also maintaining speed, accuracy, and efficiency. AI presents various opportunities in journalism, especially in newsrooms (Peiser 2019). Martnez-Plumed et al. (2021) predict that AI will increase inventions and innovations. Contrary to popular belief, automation and AI could provide new career paths for journalists. Therefore, with the advancement of new technology in newsrooms, future journalists will require training to cope with these changes and outcomes. Meanwhile, media companies may also require additional programmers and computer engineers to enhance their algorithms (Al-Rawi 2019). At the same time, journalists need to be knowledgeable regarding algorithms and AI integration in newsrooms.

The integration of AI has assisted newsroom throughout various stages of news production, which include news gathering, production, and

distribution. Tasks such as transcribing interviews, suggesting articles to readers, and improved fact-checking procedures may be automated by AI. This evolution may provide journalists with more time to focus on quality reporting by assigning AI to perform mundane tasks that were previously the domain of journalists. This net-benefit is evident as numerous global news organizations have begun integrating AI into their newsrooms (Chan-Olmsted 2019). For instance, The Associated Press was an early adopter of AI methods in reporting (Hare 2021; Peiser 2019). Meanwhile, the BBC has been using an AI for data mining and extraction since 2012, which is named Juicer (Bronwyn & Jones 2019). The New York Times introduced the Editor in 2015 to streamline its journalistic processes by using tags to highlight keywords (Schmelzer 2019). Similarly, the Chinese media outlet Xinhua launched Media Brain in 2018, which focuses on information technology and human-machine cooperation (Broussard 2014). As a result of these industry leaders adopting AI into their businesses, it stands to reason that AI may provide numerous opportunities for journalists to enhance their work efficiency (Raibagi 2021; Wood 2021; Jeremy 2022).

As evidence of this tremendous shift, Adams (2018) predicted that robots will produce ninety percent of all news stories in the future. This is predicated on the belief that computers will surpass human intelligence in the future (Marr 2024). Sherman (2018) predicts that AI-driven robots and machines will handle half of all workplace tasks by 2025. As such, all news media must undertake the integration of AI into its organization to remain relevant in the current environment (Ahmad 2017). Various studies recommend that traditional press organizations develop strategies to effectively integrate AI technologies in newsrooms, assess their impact, and ensure adherence to professional standards (Appelgren 2018; Jamil 2022; Sylvie 2017). Therefore, journalists must prepare for the future impact of AI (Dunajko 2022).

Diffusion of Innovations Theory

The Diffusion of Innovations theory was developed by Everett Rogers to provide insights regarding the adoption of new technologies within social systems. The theory posits that innovations proliferate over time while individuals become familiar with and adopt new ideas, practices, or products. By examining how people make decisions regarding these innovations, the theory identifies ways to enhance the efficiency of technology adoption in different contexts (Rogers 2003).

Diffusion of Innovation is often relied upon when exploring the effects of modern technology. It explains how an idea or technology spreads within the context of a given social system. The suitability of this theory makes it ideal for this study, which aims to identify the characteristics of innovation that affect the rate of technological diffusion among Jordanian

journalists. The process of adopting and utilizing innovation depends on the characteristics of the innovation. AI tools can be considered as innovative technological tools. Therefore, the contemporary tasks of journalists in the age of AI rely on the characteristics of AI.

Rogers (2003) posited there are five characteristics of innovation, which are relative advantage, compatibility, complexity, trialability, and observability. According to Rogers (2003), relative advantage is the extent to which an innovation is viewed as superior to the existing system. Second, compatibility is the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopter. Third, complexity is the degree to which an innovation is perceived as difficult to understand and use. Fourth, trialability refers to how easily an innovation can be tested on a limited scale. Finally, observability is the degree to which the results of an innovation are visible to others. This research relies on this theory to effectively examine the impact of innovation on the contemporary tasks of journalists in the age of AI.

Methodology

This study utilized a qualitative methodology, which is frequently employed in social science research to obtain a thorough and interpretive comprehension of the social environment of the people under research (Mohajan 2018). The sample includes 14 journalists employed at Al-Mamlaka TV, which is a Jordanian media organization based in Amman. Those interviewed were questioned extensively to explore how the integration of AI effects their work. Al-Mamlaka TV was selected for this study due to its advanced use of technology, which includes AI in news dissemination. Al-Mamlaka TV is a Jordanian Public Service Broadcaster that is committed to continuous development by staying on the cutting edge of media work. Furthermore, it possesses a modern digital newsroom with various specialized divisions for social media, website management, and satellite broadcasting. Snowball sampling was chosen when selecting journalists for the study. Snowball sampling entails the selection of a small number of informants, who then recommend more individuals to be interviewed (Bleich and Pekkanen 2013). Due to the hectic schedules of journalists, employing snowball sampling is beneficial as it aids in identifying themes that may be difficult to obtain through traditional methods (Ahmad 2024). The informants were chosen based on their prior utilization of AI applications in the newsroom, as well as their comprehension of the study topic. A pilot study was undertaken involving three journalists to enhance interview questions. For the main study, 14 journalists from Al-Mamlaka TV were selected and anonymized. They hold various positions within the newsroom. The informants of this study are profiled in Table 1.

Table 1: Profiles of informants in the study

Informant	Age	Position	Experience
1	27	Multimedia Producer	7 years
2	38	Senior Digital Journalist	16 years
3	29	Digital Reporter	6 years
4	35	Digital Director	15 years
5	43	Digital Content Producer	12 years
6	40	Newsroom Manager	17 years
7	35	Producer	13 years
8	28	Assistant Producer	6 years
9	32	Content Creator	9 years
10	50	Executive Producer	10 years
11	38	Senior Reporter	15 years
12	24	Editor	3 years
13	33	Reporter	12 years
14	38	Producer Journalist	14 years

The interviews took place throughout mid-2023. The interviews were held in person at the primary headquarters of the channel in Amman, Jordan. On average, each interview lasted between 30-45 minutes and were conducted in Arabic to enhance the accuracy of the research findings. This is due to Arabic being the native language for journalists at Al-Mamlaka TV, which was the best option to allow respondents to articulate their thoughts most effectively. Subsequently, the data was translated into English with the aid of a specialized translation department located in Amman, Jordan. The data was then analyzed using manual thematic analysis. This method relies on systematically analyzing the data to identify recurring themes or key ideas (Creswell 2012). At the beginning of the thematic analysis, the data was read several times for better understanding and to identify potential key themes. Codes were then applied to words or phrases that describe the themes or key ideas within the data. These codes were then grouped to create themes. Some themes were merged due to redundancies, while others were modified accordingly.

Findings and Discussion

The integration of AI in newsrooms has reshaped many traditional tasks of journalists (Broussard et al. 2019). The integration of AI into newsrooms has led to the creation of novel tasks for journalists (Gutierrez Lopez et al. 2023). The findings reveal three novel tasks journalists encounter while using AI at Al-Mamlaka TV. These tasks are the need to monitor AI-generated content, the importance of dealing with data and algorithms, and the advantage of producing creative news content with a human touch.

Monitoring AI-generated content

AI-generated content (AIGC) is a production method that utilizes AI

technology to discover rules from data and create content automatically. Unlike computational intelligence, generative AI—like ChatGPT— demonstrates traits that are more akin to human-like understanding and creative processes (Guo et al. 2023). A study by Zagorulko (2023) suggests generative AI—such as ChatGPT—tends to create biased content that somewhat aligns with the user's query context. Thus, whether in its broad or narrow sense, AI cannot be entirely relied upon absent human intervention (Marcus and Davis 2019). The study's informants agreed that monitoring AI-generated content is a novel task for journalists and this task is important due to the increasing integration of AI throughout news production. Journalists are aware that AI-generated content may contain mistakes so it cannot be delivered directly to the audience without human intervention to ensure veracity. As such, the AI-produced content must be fact-checked and proofread.

> *Certainly, we must supervise every step of what is produced by AI. Some generative outputs carry biased tones and are not neutral. We supervise this to avoid texts or images that incite bias or convey a tone that does not fit the organization's policy (Informant 10, Executive Producer).*

> *We need feedback for every content integrated with AI, such as adding or deleting some information from the text, ensuring the smoothness, clarity, and error-free nature of the text, and editing some texts or videos that require it …. A journalist is better than AI in understanding the audience's needs, staying in touch with them, listening to their comments, and monitoring their feedback (Informant 4, Digital Director).*

Informants in the study agreed on the need to monitor all generative content and that AI cannot be given full authority to produce the news. Most informants agreed that AI can be a partner throughout the news production process by assisting journalists and saving time. Journalists believe they have the final say on whether to adopt AI-generated content. The following are statements from some informants who supported this point:

> *We must be cautious in using AI in the news process, for example, if we rely on certain programs to generate texts like Chat GPT, we must verify what has been written and check the sources to determine if the information obtained is accurate or fabricated (Informant 7, Producer).*

> *Journalists at Al-Mamlaka TV bear the responsibility of verifying the content's ethical integrity and respect for individuals' privacy when utilizing AI tools. Journalists also need to make critical decisions on adopting or ignoring AI-generated content (Informant 3, Digital Reporter).*

The ethical issues of AI are a source of concern among journalists in Jordan as they are keen to maintain objectivity (Al-Zoubi et al. 2024a). News

organizations must supply accurate and factual news or face the consequences of tarnishing its image and credibility. Thus, verifying information before broadcast or dissemination is crucial (Ahmad 2024). Informants in the study agreed that monitoring content generated by AI is necessary to avoid ethical errors, such as bias, as well as lack of respect for privacy and intellectual property rights. Therefore, informants emphasized the need for journalists to monitor AI-generated content to ensure adherence to journalistic ethics. Rogers (2003) points out that observability is one of the characteristics of innovation. As such, when individuals witness the results of an innovation, they are more likely to adopt that innovation. Interviewed journalists have observed AI integration in the Al-Mamlaka newsroom but were cautious in their adoption. They believe in the need to supervise any innovation to ensure the credibility of produced news content.

Dealing with Data and Algorithms

Big data has led to the development of algorithms and there would be no algorithms without data (Ma and Qin 2012). Respondents at Al-Mamlaka TV agree that journalists must learn to effectively harness the potential of data and algorithms to successfully integrate AI into newsrooms. This is important because data provides journalists with the opportunity to create news stories (Weber et al. 2018). Most informants agreed that journalists should learn how to analyze and incorporate data in collaboration with AI to provide better and more engaging news stories.

> *It is essential for a journalist to be able to understand how algorithms work, as this helps them identify errors and utilize algorithms to serve news content and uncover biases. (Informant 2, Senior Digital Journalist).*

> *We use Google Data Studio to understand trends and present statistical data visually, allowing us to create stories based on the results of that data (Informant 13, Reporter).*

AI is revolutionizing news production and dissemination through various stages of writing, producing, and editing. These AI tools may enhance efficiency and engagement, which may thereby boost productivity in media and journalism (He et al. 2023). Informants agree that journalists should know how algorithms work, especially as it relates to social media platforms. More specifically, journalists should understand how algorithms can track and calculate audience preferences and characteristics, as well as know how algorithms respond to posts.

> *Algorithms are a sophisticated science, and we need to stay in touch with the evolution of algorithms. We must stay informed about what algorithms prefer to reach a larger audience while maintaining channel policies (Informant 9, Content Creator).*

Understanding how algorithms work helps to identify benefits and opportunities that can be exploited by AI (Parratt 2021).

> *Dealing with algorithms requires technological skills. Journalists are required to integrate with AI, but more clearly, they need to learn how algorithms work in order to facilitate the integration of AI into journalistic work (Informant 5, Digital Content Producer).*

Ellekrog (2022) found that journalists possess unique skills and perspectives, which renders their role in journalism as essential despite the ever-increasing prevalence of AI. By working in collaboration with AI algorithms, journalists can produce better and more factually correct content, while also maintaining the human touch that is considered essential to good journalism. Therefore, journalists must have a good grasp of understanding how data and algorithms make up vital components in current newsrooms. According to Rogers (2003), compatibility refers to the degree to which an innovation is consistent with the values, experiences, and needs of potential adopters. As such, innovations that are compatible with the current system are likely to be adopted quickly. The current findings support what Rogers affirmed. More specifically, compatibility between journalists and AI can result in better produced news content. This occurs through journalists relying on data and algorithms to create individual news stories, which can contribute to increased adoption and use of innovation at Al-Mamlaka TV, as well as other news organizations in Jordan.

Creativity with a Human Touch

AI cannot compete with the capabilities of human journalists in terms of human sensibilities and emotions (Lewis et al. 2019). A 2016 Australian study, which surveyed 1,884 journalism students to understand their motivations for choosing the profession, found that 74.6 percent of students viewed creativity as a crucial factor (Hanusch et al. 2016). Journalists participating in the study realize that creativity is required in journalism. This finding aligns with Deuze (2019) who found that presenting fully automated news stories may lead to its rejection by the audience, since creativity is part of journalism. The following opinions substantiates these findings:

> *AI is limited in many tasks. Creativity and critical analysis are tasks that AI cannot do, while a human journalist with a human touch is capable of analysis, deep understanding, thought and empathy (Informant 4, Digital Director).*

> *Even if AI expands in newsrooms, there will always be a need for human journalists to be creative and write in a way that makes the reader feel like they are dealing with humans and not robots. Moreover, the journalist is able to narrate the news in a smooth and clear language (Informant 1, Multimedia Producer).*

Deuze (2019) suggests that creativity is the main challenge in contemporary journalism. He explains that journalism inherently requires creativity, particularly as it pertains to story development, information gathering, production, and audience engagement. Most informants agreed that journalists who possess critical thinking and creativity will not be threatened by AI.

> *Journalism is a creative field by nature, which requires creativity in various aspects such as story development, information gathering, production and audience engagement (Informant 11, Senior Reporter).*

Ali and Hassoun (2019) argue that human journalists offer a distinct perspective, empathy, and intuition that AI algorithms cannot imitate. Additionally, Miroshnichenko (2018) proposes that AI may never reach the level of human creativity in journalism due to its limitations in generating topics, crafting narratives, and selecting engaging stories. Therefore, journalists need to creatively present their stories and leverage their personalized human touch in news production. Rogers (2003) argues that some innovations are readily understood by most members of a social system, while others that are complex will be adopted gradually. The current study reveals that journalists strongly believe the application of AI absent human intervention does not align with social systems. As such, there is a need for human creative input to maintain the social system and produce journalistic content that aligns with cultural values and standards.

Conclusion

This study explored the novel tasks that journalists must embrace in newsrooms that integrate AI. Based on our interviews with 14 Al-Mamlaka TV journalists, we identified three new tasks that journalists must adopt. First, journalists need to monitor AI-generated content, especially when received information is unverified. Second, journalists need to learn how to effectively integrate data and algorithms while producing news pieces. Third, journalists must produce meaningful stories that include creative news content with a human touch.

Throughout our interviews, the researchers identified three of the five Diffusion of Innovation characteristics that were posited by Rogers (1963), which were observability, compatibility, and complexity. While journalists at Al-Mamlaka experience AI adoption in their work, they are still cautious while implementing these innovative technologies. Despite this cautiousness, respondents seemed to agree that collaboration between journalists and AI is an effective path forward, particularly as more journalists rely on data and algorithms in the production process. However, findings also suggest that integration of AI is not without limitations. The third characteristic of the Diffusion of Innovation theory is evident via the complexity of its adoption. The complicated social system that journalism

operates within will play an important role as it pertains to AI adoption, this is particularly true regarding Al-Mamlaka TV. Due to its complexity, adoption of AI into newsrooms must be balanced between the novel innovation and human creativity.

The study recommends media institutions conduct more training workshops for journalists as it pertains to AI and data. This could be achieved through collaborative partnerships with advanced technology institutions. These workshops can facilitate effective AI integration into newsrooms. Similar comparative research could also be undertaken in other non-Western newsrooms, which could add to the expanding literature that examines AI adoption in newsrooms.

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