



Examining AI Integration by Audio-Visual Media Platforms in Oman: A Qualitative Analysis of Media Professionals' Perspectives

Eslam Abdelraouf^{*}

Abstract

This study aims to understand the perspectives and experiences regarding AI adoption in the daily work of Omani media professionals. This research, which explores the prospects, pitfalls, and consequences of AI integration in media production and distribution within Oman, focuses on those involved in audio-visual media production. This includes anchors, editors, producers, and directors. The study conducted semi-structured interviews to investigate how Omani audio-visual media professionals perceive AI tool integration in their daily work. The participants in this research are media practitioners from both public and private media enterprises in Oman. The study relies on a purposive sampling technique to ensure the inclusion of individuals with direct experience in utilizing AI tools in their work. The findings reveal a generally positive disposition among participants toward AI technologies and AI integration in media. To these respondents the integration of AI saves time previously spent on routine and repetitive tasks that require little human creativity. The study unveiled numerous challenges as perceived by the participants, which includes AI algorithmic bias and lack of opportunity to promote and circulate media content. Another challenge includes insufficient Arabic databases as relating to AI programming. Such an insufficiency makes AI incapable of recognizing many Arabic contexts. This is exemplified by faulty AI-generated Arabic outputs, failure to precisely recognize Arabic accents, and imprecise visual outputs on Arabic cultural identity. User awareness is another key challenge in the era of AI.

Introduction

Artificial intelligence (AI) is rapidly evolving and its influence on various industries is growing, which includes the media industry. The audio-visual media landscape has experienced profound changes in content creation, production, distribution, and consumption. In addition, this novel technology may help optimize production processes and audience

^{*} Assistant Professor in the Department of Mass Communication at Sultan Qaboos University, Oman and Associate Professor in the Faculty of Mass Communication at Al-Azhar University, Egypt.



interaction by incorporating AI in media workflows (Chan-Olmsted 2019). However, AI adoption in media is influenced by the region and type of media organizations (Zhang 2023).

The incorporation of AI technologies in audio-visual media yields tremendous potential to improve operational efficiency, as well as augment creativity and audience interaction (Jayanthiladevi et al. 2020). For instance, an editor can utilize automated editing software to increase production efficiency and correspondingly reduce the time required to generate content. Additionally, the use of AI-powered analytics can evaluate important audience opinions and behavior to create content that is customized for increasing viewer engagement (Liu, Wan Abas, and Mamat 2023). AI may also yield more accurate and efficient subtitling, transcription, and translation services to increase media accessibility.

Although a significant proportion of media practitioners have adopted and implemented AI technologies, there are regional differences in such practices. More specifically, AI applications in the Middle East are still nascent (UNDP 2024). Regarding those countries at the forefront, the United Arab Emirates (UAE) and Kingdom of Saudi Arabia (KSA) have undertaken large scale AI financing to strengthen their media industries, which they believe will drive economic growth and tech innovation. Conversely, the Sultanate of Oman also recognizes the potential of AI but is currently at an earlier stage of adoption. Omani media platforms are beginning to explore AI integration, which is supported by government initiatives under Oman Vision 2040. This initiative aims to foster digital transformation across various sectors, which includes media and mass communication. This growing interest is reflected in the perspectives of media professionals in Oman who acknowledge the benefits of AI, but also highlight challenges, which includes biases and inadequate Arabic databases. Such issues are likely to exacerbate delays and ultimately may affect the success of AI integration within the region.

While there is promise in AI technologies to automate and increase efficiency within media production, the use of AI in media presents challenges that need to be evaluated. Furthermore, the risks associated with AI—deepfakes, disinformation, and data privacy—obligates media corporations to address ethical issues, particularly as it pertains to AI and its capacity to manipulate news (Crimaldi and Leonelli 2023). Similarly, the high costs associated with the investment needed to integrate AI effectively into media corporations may present a hurdle. Moreover, some fear job losses as AI automates what were formerly human tasks (Simon 2023).

Consequently, the current study explores the potentials and challenges related to AI integration in Omani audio-visual media as perceived by Omani media professionals. Additionally, it explores the



application of AI in media-related work within Oman, which is important as this paper is the first to conduct such research. It also examines the relationship between the potential of AI integration to enhance efficiency, content quality, viewer engagement, and operational intensity (Liu, Wan Abas, and Mamat 2023). Moreover, the study's significance extends beyond Oman as it contributes to a broader understanding of AI integration in similar media enterprises across the Arab world.

Theoretical Framework and Literature Review

The Technology Acceptance Model (TAM)

Developed by Davis (1989), the Technology Acceptance Model (TAM) is a framework used to examine why people adopt new technologies. Sengaji and Radiansyah (2022) indicated this decision is affected by the perceived usefulness and ease of use. More specifically, this indicates how much a person believes a certain technology will enhance their efficiency. Meanwhile, perceived ease of use pertains to how uncomplicated and easy a new technology is to use (Legris, Ingham, and Colletette 2003; Scherer, Siddiq, and Tondeur 2019).

Although technology is constantly evolving—particularly AI—the potential benefits for the audio-visual media industry are significant. AI may increase the rate and scale of content creation, editing, and distribution. For example, the traditional approach to creating high-quality videos is relatively easy but very time-consuming (Wang, Liu, and Qi 2021). With AI editing tools, production is easier and more efficient. Furthermore, AI-powered analytics may provide relevant insight into audience preferences, which helps media professionals generate content tailored for stronger engagement (Liu Wan Abas and Mamat 2023). Further, AI has the potential to increase the efficiency of routine tasks, such as subtitling, transcription, and translation, which could correspondingly improve media accessibility (Dave and Patel 2023).

AI Adoption and the Sociotechnical Systems Theory

Studies have concluded that individual awareness and personal qualities influences AI use (Owsley and Greenwood 2024). Accordingly, the theory of SocioTechnical Systems (STS) is a framework to interpret the intertwined relationship between a social system and technology adoption (Ciriello, Richter, and Mathiassen 2024). As such, gauging the effective adoption of technology must account for social systems and not just examine individual aptitudes (Ciriello, Richter, and Mathiassen 2024). More specifically, understanding individual aptitudes is as important as considering the nuances of the corporation and work environment, which includes organizational support and training (Wang, Liu, and Qi 2021). As such, these entangled factors influence an organization's socio-technological space and its capacity for technology—AI—integration, which is concurrently



impacted by political, cultural, and social contexts. In Oman, the Sultanate gradually proceeds with a digital transformation as prescribed in Oman Vision 2040, which is a strategic endeavor that encourages the adoption of various forms of AI throughout all economic sectors of Oman; this includes audio-visual media.

Audio-Visual Media Landscape in Oman

In 1970, broadcasting debuted in Oman at the beginning of the modern renaissance era, which occurred during the rule of the late Sultan Qaboos. More specifically, radio broadcasting began on July 23, 1970, and television broadcasting began on November 17, 1974, which remained under Omani state control until 2007 (Nasr, Abdelraouf, and Al Hatali 2023). After 2007, Hala FM was the first private radio station in Oman, which began transmitting on May 23, 2007 (Ramzi and Al Rawas 2017). Hala FM ushered a new era in Oman, which was followed by Al Wisal radio on March 19, 2008 (Boukhenoufa 2024). Both radio stations provided novel media programming, which included formerly neglected topics of interest, particularly those that appealed to the youth. Meanwhile, those stations were quickly forced to compete with rapidly proliferating social media platforms, which correspondingly resulted in declining listenership, particularly within youth demographic. These facts provided the new radio stations with more freedom and opportunity to grow popular in Oman.

Hala FM and Al Wisal created an unprecedented blend between their traditional radio broadcasting and social media interaction via live and recorded programs that were disseminated on respective social media accounts (Ramzi and Al Rawas 2017). The aim was to create media content that functioned within the novel digital environment. Consequently, the two radio stations offered a form of audio-visual content that targeted the audience via multiple forms of media. This unique blend of broadcasting content won the trust of the audience. Correspondingly, both companies grew.

This novel form of multi-broadcasting remained limited to these specific private stations as public media platforms continued with a more traditional approach. However, new broadcasting initiatives were adopted during the holy month of Ramadan in 2022. More specifically, the program titled “Asser” (translated as “The Secret”) was a first (Al Resi, Shamsah, personal communication, July 12, 2024). This program represents a turning point when public radio stations began to adopt modern techniques, which included the integration of visual content that was disseminated via digital platforms to attract new listeners, particularly the younger demographic. Public radio stations likely adopted this strategy after witnessing the success of private radio stations (Boukhenoufa 2024). As a result of these events, audience-generated comments, engagement, and visual content are integral to Omani radio production.



In 2015, the Omani public media industry, which was still state controlled, underwent a major overhaul because of modernization efforts undertaken by the Ministry of Information. This process involved technical features, technological aspects, varying contents, and outputs. This process climaxed on December 30, 2015, when a new identity was inaugurated for all radio and TV channels, which included new logos. The test broadcast of Oman TV Cultural began around this time, which included new HD digital studios (Nasr, Abdelraouf, and Al Hatali 2023). The creation of AYN in 2021 by the Ministry of Information has been a remarkable development for the public media, particularly in terms of digital technology. The new platform was intended to enhance digital content and build new communication bridges with the audience via smart and hand-held devices. AYN (translated as EYE) is symbolic as the logo has a visual identity derived from the Oman radio and TV channels. The Arabic voiced pharyngeal fricative letter/sound is articulated and pronounced the same way the word AYN is produced. That very sound marks the initial of the Arabic word Oman as well. The newly introduced platform provides several interactive services, which includes live broadcasts of radio and TV channels, on-demand viewing services that include archival or new radio and TV content, Catchup TV allows users to pause and resume engagement at will, accurate and real-time statistics, executive reports on AYN contents, what devices are used, and most viewed contents. All services are supported by indices on audience engagement to provide better insights into content enhancement decisions.

AI in the Arab World and Oman

Many Arab countries are still in the initial stages of development and implementation of national AI strategies due to the associated costs and novelty (Radu 2021; Sharma et al. 2022). One reason is many Arab countries are heavily skewed toward media consumption, as opposed to media production, which results in these nations struggling to adapt to modern technology and is exacerbated by a lack of AI expertise. Therefore, AI integration in Arab countries may face major challenges. Studies have revealed a large gap between different Arab nations as it pertains to AI integration efforts across all economic sectors, which is evident in audio-visual media enterprises. This disparity is evident when accounting for national economic capabilities and wherewithal. Both the UAE and KSA top the list of Arab AI state investors (Hariri, Rostami, and Abd Ali 2023). In October 2017, the UAE established its Artificial Intelligence Office (AIO), which initiated a clear state-sponsored pathway toward an AI future. Seeking to build upon this strategy, the UAE also launched the UAE National Strategy for Artificial Intelligence 2031 (Lewis, Stachowicz-Stanusch and Elshareif 2023). This ambitious undertaking favors mass communication as it induces Dubai Media Incorporated to adopt AI



solutions to boost content, analyze data, and enhance operational efficiency (Mogielnicki 2021). On February 22, 2022, the UAE inaugurated its Museum of The Future, which is aimed at introducing AI integration across all walks of life (Jayakrishnan, Mottadelli, and González 2023).

Concurrently, Saudi Vision 2030 was undertaken by the KSA to highlight the importance of AI integration into its media sector (Althiabi 2022). On July 17, 2020, the KSA launched its National Strategy for Data and AI, which is supervised by the Saudi Data and AI Authority (SDAIA). This strategy is intended to position the KSA as a data economy and world leader in such practices, which situates this nation in a future-oriented position. In February 2024, the KSA Ministry of Media proceeded with a cooperative effort with SDAIA to launch the Artificial Intelligence Center for Media Excellence. This undertaking is unique in the Middle East and was complimented by the establishment of the Future Camp of Generative Artificial Intelligence for Media. The latter is mainly entrusted with exploiting generative AI technologies within its media sectors and anticipating future applications, as well as innovations (SDAIA, n.d.).

Meanwhile, Oman has not been absent from the pan-Gulf Cooperation Council (GCC) enthusiasm to implement data economies, digital transformation, and AI within its nation. Oman launched Oman Vision 2040 in December 2020, which came into force on January 1, 2021 (Almuqeeem 2024). Unlike initiatives undertaken by the UAE and KSA, the Oman Vision 2040 has no clear provision pertaining to AI. However, in 2020 the Omani Ministry of Transport, Communications and Information Technology (MTCIT) established the National Center for Space and Advanced Technology and Artificial Intelligence (NCSATAI), which is an executive pool for the national digital economy and AI programs. NCSATAI was launched after thorough reviews of various similar strategies from many countries, which includes China, Japan, UK, and Russia. Other NCSATAI foundational tools include staying up to date on international reports and indices by various global bodies, as well as on-going meetings and workshops with partners from the public and private sectors, academia, and AI/advanced technology entrepreneurs. Annually, NCSATAI hosts the Oman AI Summit, which is a world-class AI event. More recently, Oman endeavored to connect AI with all sectors of the economy, which is evident in the titles of conferences, forums, and workshops where AI knowledge and strategies are shared regardless of the field or discipline.

Objective and Significance of the Study

This study aims to understand the perspectives, experiences, and perceptions of Omani media professionals as it pertains to AI integration in their daily work. This research, which explores the prospects, pitfalls, and consequences of AI for media production and distribution within Oman,



focuses on professionals who are involved audio-visual media production in Oman. This includes anchors, editors, producers, and directors. This research is the first to examine the usage of AI in Omani media work. The research is a significant addition to the academic literature, particularly as it relates to AI and technological changes that are currently (re)shaping media landscapes, especially in areas already experiencing digital transformations, like Oman. Taking the experiences and perceptions of Omani media professionals into account, this study sheds light on the extent of AI applications in public and private audio-visual workflows. Additionally, the research examines the perceptions of media professionals regarding AI integration in audio-visual media and what obstacles and challenges they perceive.

Research Questions

The present study seeks to answer the following questions:

- 1- What are the perspectives and perceptions of Omani audio-visual media professionals regarding AI integration in their work?
- 2- What are the challenges of AI integration in audio-visual media as seen by Omani audio-visual media professionals?
- 3- What are the current AI application practices in Omani audio-visual media platforms?
- 4- What training or qualifications are provided to media professionals for the purposes of AI integration in audio-visual media?

Research Design and Participants

Qualitative analysis is characterized by its ability to explore a phenomenon in greater depth than quantitative analysis (Abdelraouf 2019). This qualitative study has conducted semi-structured interviews to investigate how Omani audio-visual media professionals perceive AI integration in their daily work. The study provides in-depth insights into current perspectives, practices, and challenges related to AI integration within the audio-visual media industry. The participants are media practitioners from both public and private media platforms in Oman. The study used a purposive sampling technique to ensure the inclusion of only individuals with firsthand experience in utilizing AI tools in their respective works, have at least five years of experience in audio-visual media production, and are knowledgeable about its applications. This sample was selected regardless of gender or age, as these factors vary across different platforms. The sample includes a diverse range of media professionals to obtain a comprehensive understanding, which includes presenters, editors, producers, and technical staff. In total, the study interviewed 16 media professionals from three different Omani audio-visual media platforms. The sample includes six participants from the public sector, which represented



by the Omani Ministry of Information's Public Authority for Radio and TV, as well as AYN. The sample also includes three employees from the privately owned Hala FM and Al Wisal. Each interview lasted approximate 20-30 minutes and involved open-ended questions, which were designed to elicit detailed responses on the use of AI in daily tasks, as well as perceived benefits and challenges.

The interviews were conducted between July 3 and July 9, 2024. They were recorded and transcribed verbatim for detailed analysis. Each participant was assigned a unique code to ensure their anonymity. The participants include eight individuals from the Ministry of Information, which was divided into two groups. The first group is from Oman Radio & TV, which are labeled as Info 1-4. The second group is from the AYN platform, which is labeled as AYN 1-4. For the private sector, there are four participants from Hala FM—labeled as Hal 1-4—and four from Al Wisal—labeled as Wis 1-4.

Table 1. Participants' characteristics

Organization	Participant Codes	Professional Roles	Total
Oman Radio & TV	Info.1	Senior TV news anchor	16
	Info.2	Radio Director	
	Info.3	Program Producer	
	Info.4	Senior video Editor	
AYN platform	AYN.1	Manager	
	AYN.2	Editor	
	AYN.3	Producer	
	AYN.4	Social media director	
Hala FM	Hal.1	Senior presenter and manager	
	Hal.2	Producer and marketing director	
	Hal.3	Producer and social media director	
	Hal.4	Audio engineer	
Al Wisal	Wis.1	Senior presenter and director	
	Wis.2	Programs manager	
	Wis.3	AI and marketing specialist	
	Wis.4	Editor	

Data Analysis

The study employed a thematic analysis to examine the interview transcripts based on the research questions. This process involved coding the data to uncover recurrent themes and patterns related to the topic. The initial step involved the researcher examining the data. During this process, all interviews were transcribed verbatim and thoroughly reviewed. NVivo software was used to manage and systematically analyze the qualitative data, which subsequently facilitated the coding process and organization of themes. The codes were then refined into specific themes, which ensured they accurately represent the perspectives of the participants. Techniques,



such as peer debriefing and member checking, were employed to maintain the study's rigor and validate the findings.

Ethical Considerations

Ethical approval was obtained from the Research Committee of the College of Arts and Social Sciences at Sultan Qaboos University on July 2, 2024. An informed consent form was obtained from all participants, which ensures they were aware of the study's purpose, their rights, and confidentiality of their responses. Participants have been assured their identities would remain anonymous in any publications that result from this research.

Results

The analysis of interview data identified four main themes, which are Perspectives and Perceptions on AI Integration, AI Integration Applications for Omani Audio-Visual Content, Challenges to AI Integration, as well as Training and Qualification of Media Professionals. The themes are elaborated upon in the next sections, which include supporting quotes from the participants.

Theme 1: Perspectives

The perspectives of Omani Media Professionals on AI integration in audio-visual media

The participants all agreed that AI is an important technological development as it may enhance audio-visual media content quality and reduce the time normally dedicated to routine tasks, which concurrently may reduce costs. The results also reveal a positive attitude toward AI integration in daily tasks. Moreover, respondents felt that media platforms must attempt to keep pace with technological developments. After all, this attitude aligns with the state's endeavor for comprehensive digital transformation under the auspices of Oman Vision 2040. However, differing perceptions were identified as it pertains to AI media uses. One of the participants argued that integrating AI into media production should occur at a reasonable pace, rather than hastily or in an anticipatory manner. In other words, according to the participant Omani platforms should not simply follow global trends per se. Rather, gradual integration should be adopted as per daily professional needs, especially in smaller and medium size media organizations, which is often the case within the Omani media scene. Organizations of such sizes need to carefully streamline spending in accordance with their economic feasibility.

"How developed our adoption and use of AI must be at a natural, rather than hastily anticipatory, adoption pace... I mean as needed... otherwise, it would mark a case of squandered energies and costs. This applies to small- and medium-scale media organizations. For global large ones, they have the financial means and capabilities to adopt and



keep pace with every development, almost without additional expenditure burdens.” (Wis.1)

Most participants perceive AI as a tool to assist with their work, rather than a replacement of media professionals. To these participants, this is particularly true where media positions are creativity based. More specifically, AI is a tool used by media professionals to augment their output quality, both quantitatively and qualitatively. As such, AI is a means of enhancing—rather than replacing—human innovation, which is irreplaceable. Therefore, respondents felt that AI may be useful at managing non-innovative tasks.

“AI must be viewed as a helping tool or a catalyst. It cannot be held as a foundation or a replacement to human innovation. Human creativity will remain unique and irreplaceable. It will also remain in constantly increasing demand.” (Info.1)

Some participants argued that AI integration is a matter of necessity rather than choice, which forces media professionals to learn and adapt to this technology otherwise they could lose their livelihood. Despite these realities, AI must nonetheless be cautiously and conservatively adopted. In other words, AI integration should not result from simply following global trends. This was echoed by the senior AI Wisal professional:

“It is no longer a matter of choice for us to adopt and adapt to AI, it is rather unavoidable now... yet caution and reservations should be considered.” (Wis.1)

There was agreement among participants that AI is a force in need of nuance guidance. Media professionals must be talented and well-educated to benefit from AI and harness it for the good of the media industry. If this integration is not done carefully and correctly, then failing could result in tremendous harm to the industry, which includes misinformation, lack of due consideration to cultural and social contexts, and even disinformation. Moreover, judging the quality of AI outputs demands a critical approach by media professionals. Clearly, a media professional with no appropriate knowledge or training could not apply AI outputs in a proper manner. Further, they would not be able to harness AI for creative media production unless they are talented and creative. This notion is corroborated by a senior media professional at Al Wisal:

“The future is heading for one-man crews, namely a single person performing all tasks. Such a person would not be just any person, but rather needs to lead artificial intelligence with human intelligence, even adding creative human touches.” (Wis.3)

Participants were unanimous that AI must be supervised by a media professional prior to broadcasting any AI output, which involves amending the output for the purposes of accuracy and providing the necessary human



touch. Therefore, AI outputs cannot be copied and broadcast as is, which is a notion highlighted by a senior Hala FM employee:

"Formerly, we used to depend on brainstorming up to coming up with new brilliant ideas. But now we simply depend on AI for that purpose. AI gives us options for ideation... those options are then amended by us." (Wis.2)

Participants had differing views on how captivating AI-generated contents are when compared to human-ideated contents. Some participants argued that AI can create a professional voiceover that is indistinguishable from a human voice. It also provides many other options, which includes creating impressive background music. However, others indicated that AI-generated contents could potentially serve their purposes but were unimpressive, at least in its current iteration. This contradiction is argued by a senior advertising professional at Hala FM:

"AI-generated contents are still not catchy. They might be good and flawless, even featuring better quality than real images; but human-created contents are incomparably catchy... no one can tell what the future hides." (Hal.3)

"One day, I created an ad using a human voice. I recreated the same ad with an AI-generated voice. The client listened to both without prior knowledge on what was human and what was AI-generated. Almost automatically, the client chose the natural voice." (Hal.3)

Some participants drew attention to their perception that AI output may be at odds with audience needs and wants, especially involving controversial situations. Sometimes, the sentiment of the audience may result in mistaking what is real for what is not. This is where the question arises on whether AI-generated images can be used when real ones are unobtainable.

"On our Twitter [sic] account, we posted an AI-generated photo on 30 May 2024 to caption a guest of ours on e-cigarette smoking among teenagers inside a classroom... all comments by users were shocking as they took the photo for an insult to the society and the child." (Hal.1)



Figure 1. The controversial AI-generated image by Hala FM

Figure 1. The controversial AI-generated image by Hala FM



Despite the above photo being fictional and unmistakably AI-generated, it nonetheless generated backlash. Much of the acrimony was a result of the mistaken notion this image was real and not AI-generated. This was compounded by those viewers who did not read the caption to determine the image's accuracy or source. Rather, all comments were solely focused on the photo. Concurrently, the rancorous feelings were further inflamed when the image was shared over social media platforms (See Figure 1).

Theme 2: Application

AI Integration for Omani Audio-Visual Contents

Participants agreed that AI integration in audio-visual media is still in nascent stages globally, which is also true in Oman. How much AI tools are adopted varies within each respective country. Some examples of early adoption involve selecting ideas for stories, researching, scripting, scenario framing, filming, audio and visual editing, composing, posting, data analytics, etc. Moreover, participants indicated that varying degrees of AI integration correspond to respective institution and individual capacities. For example, some media organizations may have certain restrictions and policies. Further, individuals may have personal preferences. According to the participants, state-run media organizations are the most conservative regarding their pace of adoption. As such, they are relatively slower to integrate AI in their day-to-day work, despite encouraging their co-workers and employees to utilize AI tools. Still, such encouragement is unclear in terms of detailed instructions for daily applications. This might be due to entrenched and established routines at state-run institutions and a resulting lack of desire to change. The participants agreed that ChatGPT is the most commonly used tool in day-to-day media work, as it is easy to use for purposes of generating ideas, alternatives, and options. For those participants, ChatGPT is also a starting point for more ad-hoc applications. ChatGPT is often used for most of the production phases of audio-visual material, particularly for program preparations and writing, as well as news bulletin editing. This was referenced by an anchorwoman at Oman TV:

"We have just started to use it [ChatGPT] for news editing. We quickly feed the information into the already established news template. It needs editing after that, of course." (Info.1)

When asked about production aspects at Oman Radio & TV, such as editing and audio engineering, the participants indicated the AI tools that are integrated in professional Adobe editing applications are often used, which includes Adobe Premiere and Adobe Audition. To these participants such integrations have rendered their daily tasks far easier, specifically in terms of video editing and audio fine-tuning. Moreover, this correspondingly saves hours of formerly time-intensive labor.



“AI helps us edit audios seamlessly, remove pauses, and mixing presenter’s voice with sound effects in the background so as to increase and decrease background sound to suit the presenter’s voice without any interference on the party of the editor.” (Info.4)

According to participants, AI tools are more widely integrated into daily tasks at private radio stations. Such AI integration manifests in various forms, which include Adobe audio-visual editing plugins, as well as more user-friendly social media optimizing applications (e.g., CUPCUT and Captions). These types of AI-driven applications are sometimes used to create Instagram reels or stories, as well as YouTube shorts. According to a media professional at Al Wisal:

“Al Wisal has been among the first to use AI, which now accounts for about 50% of Al Wisal’s daily tasks, including data analytics, digital posting, better outreach for target users, translation, program preparations, audio-visual editing, etc.” (Wis.3)

Many participants emphasized the many benefits of AI during the process of producing short videos for various events. Previously, these short videos absorbed tremendous time and effort during the process of audio-visual editing and subtitling. Moreover, translation adds additional work when someone is a foreign speaker (See Figure 2). Today, those short videos are completed with a press of a button. Only a quick review would be required to ensure seamless outputs as this process yields an accuracy rate over ninety percent and is constantly improving. This process has been adopted by Hala FM as staff use AI to produce videos covering the Muscat Golf Open Tournament.

“We have created many Instagram reels using AI-based Captions when covering the ITB Berlin. We also added Arabic dubbing for a foreign guest along with screen subtitling... previously, we used to send the script to a translator, place the translated text on the editing application while ensuring synchronization with the voice. It was a multi-dimensional process that took hours to finalize. Now it all happens with just a press of a button.” (Wis.3)



Figure 2. Al Wisal Instagram reel with AI-generated subtitles and dubbing.



Despite public institutions traditionally being more resistant to integrate cutting-edge technology, as opposed to private institutions, participants clarified this tendency is slowly changing in Oman. More specifically, many public media companies have undertaken pioneering and independent initiatives. Several employees from the Ministry of Information indicated that its e-media department has recently expressed interest in integrating AI applications within its state-run AYN media institution. Considerable inroads have been made regarding AI integration in audio-visual media, which was clarified by a media senior professional at AYN:

“In 2024, AYN was awarded the AI Economics Award by the Ministry of Economy. As a result, AYN is to receive financing from the Ministry to boost AI integration in AYN’s e-media services.”
(AYN.1)

Media professionals at AYN indicated they use AI for visual media contents while designing visual/music breaks for various programs, which includes videos that are broadcast during the holy days of Eid Al Fitr and Eid Al Adha. A recent example of AI integration includes the AYN produced Hackathon Ayn (See Figure 3), which plans to continue AI integration. This effort will be augmented by financial assistance provided by the Ministry of Economy, which demonstrates a national interest in AI integration as highlighted by a media professional at AYN:

“We have relied on AI several times, including for Hackathon Ayn; a promotional campaign for e-game making with an Omani identity by Omani youth.” (AYN.3)



Figure 3. AI-generated visuals used for Hackathon Ayn

Regarding the AI applications used by AYN, participants indicated they first storyboard the particular program or ad. Then a discussion is conducted to clarify concepts, which precipitates the usage of specialist AI applications. This part of the process could include AI applications like Leonardo.Ai, which generates art and illustrations based on text prompts. In fact, this application was used to design the Hackathon Ayn imagery. Other



applications included CoPilot AI, which generates other characters. These sentiments were echoed by an AYN media professional:

“We used HyperAI to generate the videos we published on AYN last Eid.” (AYN.3)

Despite AYN being a public Ministry of Information-affiliated platform, it has sought to provide a different approach pertaining to AI integration in audio-visual production. However, AYN appears to be the exception as traditionally run radio and TV services at the Ministry are sluggish in their digital transformation, which is particularly surprising given the state’s push for these initiatives. As such, the state directed some of these state-run broadcasters to produce some AI-powered works. According to a senior media professional with Oman Radio:

“We had a ministerial directive to use AI in designing the Ministry’s pavilion for the Book Fair 2024... So, we used AI for décor. It was a creative idea.” (Info.2)

Some participants indicated that using AI tools in audio production occurs stealthily and without audience awareness because most listeners typically cannot distinguish AI-generated from human voices. A Hala FM senior ad professional specifically mentioned the Voice Changer AI as tremendously useful as it converts text prompts into any type of desired voice in various accents. Thus, audio breaks have been produced and broadcast that went unnoticed by the audience.

“We have aired AI-generated ad breaks. None of the audience noticed they were so created.” (Hal.3)

Most of the participants indicated that analyzing data is an integral facet for engagement and trend analytics, which enables more effective and efficient media production to ensure stronger engagement from targeted groups. For these respondents, there are many helpful applications that assist with this work, which includes Google Trends and Adobe Analytics. The most recent ChatGPT version—ChatGPT 4.0—is sometimes used to analyze data via visual recognition to provide advice on content boosting as it relates to colors, topics, broadcast timings, etc.

“I’ve provided ChatGPT with many examples of screenshots posted on our digital accounts. It gave me good tips on the best posting times, topics in need of development, the visuals to be used, and most catchy titles and colors.” (Hal.2)

Theme 3: Challenges

Challenges to AI integration in Audio-Visual Media Productions in Oman

According to participants, there are various challenges relating to AI integration in audio-visual productions in Oman. Most of the participants



agreed that AI has rendered some daily tasks far easier. However, this may result in overdependence on AI. Put differently, a pool of easy-to-use efficient tools may bring about an environment that instigates a lack of creativity and passivity.

“Overuse of AI may push media professionals into full dependence on it, which may kill ideation and creativity gradually.” (Wis.2)

Further, most participants voiced their concern regarding algorithmic bias within the AI as these applications are primarily funded and operated by large multinational conglomerate corporations. The participants cited the example of social media platforms in their nascence stages when they were perceived to be more democratic, liberal, and free. However, as these platforms evolved, they have become unfairly selective. It is no secret these platforms now have unpaid content restrictions and use algorithms to block or control a myriad of content, which sometimes include political content.

“We have noticed Meta restrictions on pro-Gaza content.” (Wis.1)

“Following Al Aqsa Flood, there have been pro-Palestinian posts that were restricted compared to other posts, which means that digital platform algorithms are biased.” (AYN.4)

The participants also mentioned algorithmic bias as a concern, particularly regarding content that may be considered controversial. As such, controversial content may have less opportunity to be viewed or recommended by the algorithm. If this is true, then algorithms favor content, and correspondingly demote other content, via opaque or hidden motives. These hidden algorithmic justifications are unfair to content creators.

“For example, Netflix and YouTube recommend and sometimes flag certain contents for no clear reason.” (Wis.1)

The participants agreed there are challenges concerning AI databases, namely the lack of sufficient Arabic content, which includes various Arabic accents and dialects. Moreover, these databases also have relatively insufficient content on Arabic culture and social issues. To the participants, these shortcomings are apparent in many AI-generated contents. In other words, AI databases still need Arab investment, which caused participants to cite the UAE’s massive AI investments:

“Except for the UAE, insufficient AI-data on many Arab countries and culture is another problem. The UAE has shown strong interest in creating an AI ministry. This is the reason why AI now, of all Arab countries, best recognizes the UAE.” (AYN.3)

“The problem is local accents take time until mastering. AI applications are still inaccurate in terms of mastering local accents and dialects.” (Hal.3)



Some participants indicated the most pressing challenge pertains to Arabs strictly being AI consumers, rather than AI producers. No epistemological or cultural balance can be expected without Arab investment in AI research. Nor could it be expected that AI programmers, who may not be Arab, adopt an Arab narrative. Generally speaking, this holds true regarding Arabic databases on the Internet, which presents a pressing issue because Arab nations must embrace the AI wave. This likely accounts for lackluster and imprecise AI outputs as it pertains to Arabic contexts.

“We need to move for the AI consumer square to that of producers. This means investments in science and scientific research” (Wis.1)

“Sometimes, when I ask for a description of Omani buildings, I simply get Dubai towers. When I ask for a description of Omani traditional attire, AI confuses it with Emirati garments. Ensuing Photoshop-enabled changes are then needed.” (AYN.1)

This deficiency also extends to Arab artistic expression. An audio engineer with Hala FM indicated that AI is approaching perfection in terms of Western composing and singing, but this is not true regarding Arabic:

“Arabic music has its own intricacies and myriad melodic variations; Unlike the Western styles of Rap music, hip-hop, and other music, which have consistent rhythms that are easy to mimic.” (Hal.4)

Several participants argued that another challenge involves incorrectly analyzing big data. Big data is an important commodity that underwrites much of internet commerce. As such, this data is sold to advertisers for economic objectives, which can be legitimate or illegitimate, as well as declared or hidden. A good example is Mark Zuckerberg’s US election interference in 2020. Zuckerberg used data extracted from Facebook, unbeknownst to the user, to favor the democratic candidate. This was achieved by controlling what contents were allowed to be posted and circulated, as opposed to contents that were blocked or demoted. Further, deepfakes present another major challenge for the foreseeable future as tools to create deepfakes are continually evolving. A senior female news presenter at the Omani TV service stated that deepfakes are not far away from being indistinguishable from reality. She cited a personal experience of a deepfake video where she appeared at the news studio reading out a commercial for a certain product:

“A video went viral on social media, featuring me reading out a commercial from the newsroom. It was shockingly perfect! The voice, lip synching... I had to post it on my accounts to say it was a deepfake.” (Info.1)

Theme 4: Training

Qualifying audio-visual media professionals to use AI

The participants agreed that continued training is necessary to enable



the effective use of AI across all Omani audio-visual media platforms. The researcher confirmed that each respondent possessed a varying level of qualification and training as it relates to AI tools. Through analyzing responses, it is clear that state-run platforms—radio and TV—currently have the highest number of workshops and training programs on AI integration. Clearly, this marks an intentional direction taken by the state:

“A big number of various training programs are provided by the Media Training Center of the Ministry of Information yearlong in cooperation with Omani and non-Omani experts and specialists. These programs include, without limitation, using AI in detecting and analyzing social media activities and AI-powered podcasting.”
(AYN.1)

Although AYN is state-run media, some of the AYN media professionals that were interviewed did indicate that AI training was not limited to workshops offered by the Media Training Center of the Ministry of Information. Instead, there were also numerous regional and international programs and events, which demonstrate a keenness to benefit from domestic and global expertise. These efforts aligned with the Oman Vision 2040 initiative.

“We had an AI application training program. It was organized by Gulf Radio & TV Organization for GCC States. We also took part in the NAB Show 2024 in Las Vegas on AI integration in the media industry.” (AYN.3)

In contrast to AYN, private radio stations have adopted different training models. Several senior media professionals who work at these stations specified the AI training models where they work are continually evolving. Initially, these radio stations relied on external AI workshops. However, employees who attended these external workshops returned with little significant improvement in their AI capacities. Some respondents indicated that several employees who were sent to these external workshops perceived the time spent away from the office as a break, rather a learning opportunity. This was a primary reason why the training model evolved.

“We have decided to go for in-house on-the-job training. We have appointed an AI specialist young person and integrated him into the team to gradually and sustainably transfer his expertise as and when needed.” (Wis.1)

While institutional AI training efforts are unequivocally important, the participants agreed that personal aptitudes also play a key role in the process of adapting to AI. Meanwhile, Oman Radio & TV has adopted a conservative approach to AI integration. Concurrently, younger media professionals demonstrate a strong desire and aptitude to adopt and gradually apply such technologies. Interestingly, Oman Radio only recently



started disseminating visual content via social media. This was confirmed by a program producer with Oman Radio who recently purchased a drone at his own expense to shoot visual reports for social media broadcasting. Although this purchase was not professionally mandated, the respondent indicated he wanted to capture more captivating content to provide a better visual experience to followers on social media:

“I’ve bought a drone from my own money to better the reports I make and to air them visually on social media platforms. What I had in mind was much better and more attractive visual experience on social media. I want to shoot whenever I want without having to go through red-tape measures.” (Wis.2)

Several Ministry of Information media professionals indicated the Ministry is now adopting a novel one-man crew approach, which signified a distinct shift away from previous hiring practices. More specifically, this novel approach aims to hire well-rounded media practitioners who can produce media content from start to finish. For example, new hires who are employed under the one-man crew approach will be able to creatively source, produce, edit, and disseminate the story. Formerly, all employment agreements were specific to each job. In other words, each job and its corresponding job duties were rigorously defined through a single role, such as presenter, director, or program writer, etc. However, this one-man crew approach has toppled this former dynamic as employment agreements integrate multiple job roles and a wide range of responsibilities. As such, media professionals are forced to adapt in the face of novel technology, which results in learning new skills. AI is instigated much of this transformation.

Discussion

The analysis of the interviews identified a mostly positive attitude towards AI technologies and AI integration in respondent’s daily media work. To the respondents, adoption and integration of AI likely saves time that was formerly spent on routinely repetitive tasks that require no human creativity. This conclusion is corroborated by studies that investigate AI in media (Anantrasirichai and Bull 2022; Chan-Olmsted 2019). The respondents of the present study demonstrated an open attitude towards AI integration, but not without reservations. Moreover, previous studies substantiate their reservations, which identified concerns regarding AI replacing their jobs in the future (de-Lima-Santos and Ceron 2021). The present study identified different perceptions and perspectives regarding AI. Some respondents believe AI proliferation is inevitable. Meanwhile, others argue that AI must remain a helping tool rather than to serve as a replacement to media professionals. These respondents strongly indicated that AI should serve as a collaborative tool to augment creative output and



not usurp the human touch. As revealed in this study, human-made media content is still prevalent and preferred by viewers. However, this may change. Moreover, there are tasks AI cannot directly manage, which include those of presenters and anchorpersons. Respondents felt it was necessary for humans to perform these jobs to convey emotions to the audience, which is not something AI is currently capable of performing. This belief was identified in research that revealed AI may be able to do the job but falls short by failing to emotionally reach and relate to the audience when compared to humans (Pugh 2024).

Upon analyzing the examples cited by the respondents, it has been found that AI is quickly becoming part of all audio-visual production phases, which includes searching for research, brainstorming, scriptwriting/storyboarding, audio-visual editing, translating, subtitling, and analyzing data. This increasing usage of AI tools demonstrates their effectiveness throughout the production process by offering media professionals with multiple options to enhance their final outputs and more effectively reach the target groups. Therefore, the present study corroborates the findings of Bailer et al. (2022) and Ridwan and Heikal (2023).

The study unveiled several challenges as reported by participants. Most notable is the AI algorithm bias through opaque means that render it difficult to effectively promote content and reach potential viewers. AI-powered algorithms determine what is promoted or demoted via unclear rules, which could include increasing the reach of paying customers to the detriment of non-paying customers (Kundi et al. 2023). This present study identified similar issues, which begs the question of how truly fair are algorithmically based technologies?

The insufficient number and depth of contemporary AI Arabic databases is troubling. Such insufficiency renders AI incapable of recognizing many Arabic contexts, which is clearly demonstrated by subpar Arabic outputs, failure to precisely recognize Arabic accents, and imprecise visual outputs on Arabic cultural identity. These defects require additional effort by media professionals to ensure the outputs correctly and accurately serve their purposes. The participants blamed these defects on weak investments in AI research, which highlights the need to establish Arabic databases and migrate away from simply being AI consumers and become AI producers.

The present study identified user awareness as a key challenge in the era of AI. Deepfakes are continually refined to a degree that renders it increasingly difficult to identify. Consequently, a critical eye is necessary. This criticality is also crucial when using any AI, for example ChatGPT, to ascertain if the output information is accurate and reliable. Otherwise,



uneducated or uncritical users may implicitly trust AI output that is not attributed or reliable (Owsley and Greenwood 2024). Therefore, awareness of this issue and continued vigilance are paramount, especially due to the ease of circulating inaccurate or false information. This is particularly pertinent to news media, which is an institution that traditionally is relied upon to convey reliable and accurate information.

The study has further concluded that training for effectively using AI tools is necessary. Equally, this must be sustainable through continued on-the-job education, which provides the best model to ensure organic, gradual, and sound AI integration and to avoid ineffective integration. Regarding training, the size, mission, and capabilities of institutions should always be considered. Moreover, respondents indicate that personal aptitude and individual preparedness plays a key role in integrating novel technologies and AI tools. Accordingly, each respective media institution will possess professionals with stronger inclination and aptitude regarding AI adoption, as well as desire to engage in training. These employees should be selected to initially train on AI so they can cultivate a positive culture within the institution regarding integration. Such an approach would create a technologically integrated society.

Conclusion and Future Research

This study examines Omani media professionals and their perspectives on AI integration into news media. The results indicate the respondents generally hold a positive view of AI integration in audio-visual media and recognize its effectiveness and efficiency while managing routine tasks. However, they simultaneously emphasize the importance of human oversight and intervention. As such, concerns remain regarding potential drawbacks of using AI, such as algorithmic bias, insufficient Arabic databases, AI overreliance, and deepfake threats. The study also reveals the necessity for continuing practical AI training for media professionals. Future research should explore the long-term impact of AI on job roles and investigate strategies for developing robust Arabic-language AI databases. Additional studies could assess AI regulations, as well as policies and ethics in the evolving landscape of Omani media. Further research could also examine the audience attitudes toward AI-generated content in Oman.

References

- Abdelraouf, Eslam Mohamed. "A critical analysis of the dialectic science-religion relationship in popular science show discourse." *Arab Media and Society* 2019, no. 28 (2019): 30-50. <https://doi.org/10.70090/EAR28CAD>.
- Almuqeemi, K. M. S. 2024. "*The notion of nation in the centralized media systems and the challenges of new media: Oman's media system as a case study*." Ph.D. thesis, University of Bedfordshire.
- Althiabi, S. A. 2022. "Saudi Arabia's media elite's vision of the role of artificial



- intelligence technologies in combating social media fake news.” *International Journal of Media and Mass Communication* (IJMMC), 4(2), 123-163.
- Anantrasirichai, N., & Bull, D. 2022. Artificial intelligence in the creative industries: a review. *Artificial intelligence review*, 55(1), 589-656.
- Bailer, W., Thallinger, G., Krawarik, V., Schell, K., & Ertelthalner, V. 2022, March. *AI for the media industry: application potential and automation levels*. In International Conference on Multimedia Modeling (pp. 109-118). Cham: Springer International Publishing.
- Boukhenoufa, A. 2024. “Exploring the Radio Listening Habits and Preferences of Working Women in Oman: A Study on Uses and Gratifications.” *International Journal of Media and Mass Communication*, 6(1), 10-46988.
- Chan-Olmsted, Sylvia M. 2019. “A Review of Artificial Intelligence Adoptions in the Media Industry.” *JMM* 21 (3–4): 193–215.
<https://doi.org/10.1080/14241277.2019.1695619>.
- Ciriello, R. F., Richter, A., & Mathiassen, L. 2024. Emergence of creativity in IS development teams: A socio-technical systems perspective. *International Journal of Information Management*, 74, 102698.
- Crimaldi, F., & Leonelli, M. 2023, January 1. AI and the creative realm: A short review of current and future applications. Cornell University.
<https://doi.org/10.48550/arXiv.2306>.
- Dave, Manas, and Neil Patel. 2023. “Artificial Intelligence in Healthcare and Education.” *British Dental Journal* 234 (10): 761–64.
<https://doi.org/10.1038/s41415-023-5845-2>.
- Davis, F. D. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- de-Lima-Santos, M. F., & Ceron, W. 2021. Artificial intelligence in news media: current perceptions and future outlook. *Journalism and media*, 3(1), 13-26.
- Dibra, M. 2015. Rogers theory on diffusion of innovation-the most appropriate theoretical model in the study of factors influencing the integration of sustainability in tourism businesses. *Procedia-Social and Behavioral Sciences*, 195, 1453-1462.
- García-Avilés, Jose Alberto, Miguel Carvajal-Prieto, Félix Arias, and Alicia De Lara-González. 2018. “How Journalists Innovate in the Newsroom. Proposing a Model of the Diffusion of Innovations in Media Outlets.” *the Journal of Media Innovations* 5 (1): 1–16. <https://doi.org/10.5617/jomi.v5i1.3968>.
- Hariri, R., Rostami, F., & Abd Ali, H. 2023. “Artificial Intelligence Strategies in Saudi Arabia and the UAE and its Consequences on Regional Security in Mesopotamia (Case Study of Iraq).” *Mesopotamian Political Studies*, 2(3).
- Jayakrishnan, P. V., Mottadelli, L., & González, M. H. 2023. “Novel landscaping applications of geosynthetics in ‘Museum of the Future’ project in Dubai.” In Geosynthetics: Leading the Way to a Resilient Planet (pp. 1882-1888). CRC Press.
- Jayanthiladevi, A., Arun Gnana Raj, R Narmadha, Sajin Chandran, Sai Shaju, and K Krishna Prasad. 2020. “AI In Video Analysis, Production and Streaming Delivery.” *Journal of Physics. Conference Series* 1712 (1): 012014.
<https://doi.org/10.1088/1742-6596/1712/1/012014>.



- Kundi, B., El Morr, C., Gorman, R., & Dua, E. (2023). Artificial intelligence and bias: a scoping review. *AI and Society*, 199-215.
- Legris, Paul, John Ingham, and Pierre Colletette. 2003. "Why Do People Use Information Technology? A Critical Review of the Technology Acceptance Model." *Information & Management* 40 (3): 191–204. [https://doi.org/10.1016/s0378-7206\(01\)00143-4](https://doi.org/10.1016/s0378-7206(01)00143-4).
- Lewis, A., Stachowicz-Stanusch, A., & Elshareif, E. 2023. "Is the UAE ready for the Fourth Industrial Revolution in the age Artificial Intelligence? Development of Artificial Intelligence in the United Arab Emirates." In *Proceedings of International Conference on Research in Education and Science* (pp. 162-171).
- Meng, Liu, Wan Anita Binti Wan Abas, and Roslina Mamat. 2023. "Research in the Use of Artificial Intelligence Technology in Media Integration in China." *International Journal of Academic Research in Business & Social Sciences* 13 (5). <https://doi.org/10.6007/ijarbss/v13-i5/16955>.
- Minister of State for Artificial Intelligence. "UAE National Strategy for Artificial Intelligence 2031," n.d. <https://ai.gov.ae/strategy/>.
- Mogielnicki, Robert. 2021. "Free Zones in Dubai: Accelerators for Artificial Intelligence in the Gulf." In *Springer eBooks*, 141–59. https://doi.org/10.1007/978-981-16-0771-4_8.
- Nasr, H., Abdelraouf, Eslam. & Al Hatali, Waad. 2023. "Psychological Burnout Among Media Professionals in the Sultanate of Oman TV." *Journal of Arts and Social Sciences*, 14(1), 63-82.
- Oman AI Summit. Oman AI Summit, Tazeez AI for Artificial Intelligence – Oman, <https://omanaisummit.com/en/>. Accessed 17 July 2024.
- Oman Vision 2040. (2024, January 1). <https://tejarah.gov.om/en-us/Why-Oman/Oman-Vision-2040>
- Owsley, C. S., & Greenwood, K. 2024. "Awareness and perception of artificial intelligence operationalized integration in news media industry and society." *AI & SOCIETY*, 39(1), 417-431.
- Pugh, A. J. 2024. *The Last Human Job: The Work of Connecting in a Disconnected World*. Princeton University Press.
- Radu R. 2021. "Steering the governance of artificial intelligence: national strategies in perspective." *Policy Soc*, 40(2):178–193.
- Ramzi, Mahinaz & Al Rawas, Anwar. 2017. "Gratifications and Uses of FM Radio Stations Among Omani Youth." *The Scientific Journal of Radio and TV research*, (10), 169-233.
- Ridwan, D., & Heikal, J. 2023. Application Of Artificial Intelligence (AI) In *Television Industry Management Strategy Using Grounded Theory Analysis: A Case Study on Tvone. Jurnal Scientia*, 12(03), 4184-4190.
- Rogers, E. M., & Cartano, D. G. 1962. Methods of measuring opinion leadership. *Public opinion quarterly*, 435-441.
- Scherer, Ronny, Fazilat Siddiq, and Jo Tondeur. 2019. "The Technology Acceptance Model (TAM): A Meta-analytic Structural Equation Modeling Approach to Explaining Teachers' Adoption of Digital Technology in Education." *Computers*



- and Education/Computers & Education* 128 (January): 13–35.
<https://doi.org/10.1016/j.compedu.2018.09.009>.
- SDAIA. “National Strategy for Data & AI.” Accessed July 6, 2024.
<https://ai.sa/index.html>.
- Sengaji, Zulfahmi, and Egi Radiansyah. 2022. “How Entrepreneur Intention to Digitize Micro, Small and Medium Enterprises.” *International Journal of Education and Social Science Research* 05 (02): 26–35. <https://doi.org/10.37500/ijessr.2022.5203>.
- Sharma M, Luthra S, Joshi S, Kumar A. 2022. “Implementing challenges of artificial intelligence: evidence from public manufacturing sector of an emerging economy.” *Government Information Quarterly*, (4):101624.
- Simon, Felix M. 2023. “Escape Me if You Can: How AI Reshapes News Organizations’ Dependency on Platform Companies.” *Digital Journalism* 12 (2): 149–70.
<https://doi.org/10.1080/21670811.2023.2287464>.
- Stuart, William David. 2001. *Influence of Sources of Communication, User Characteristics and Innovation Characteristics on Adoption of a Communication Technology*. UMI eBooks.
<http://ci.nii.ac.jp/ncid/BA7197522X?l=en>.
- UNDP. Harnessing AI for Sustainable Development Goals in the Arab Region. (2024, May 29). <https://www.itu.int/net4/wsis/forum/2024/Agenda/Session/525>.
- Wang, Xiaocui, Chuanlin Liu, and Yue Qi. 2021. “Research on New Media Content Production Based on Artificial Intelligence Technology.” *Journal of Physics. Conference Series* 1757 (1): 012062.
<https://doi.org/10.1088/1742-6596/1757/1/012062>.
- Zhang, Yayin. 2023. “The Integration of Traditional Broadcasters With Artificial Intelligence in Television News Programs.” *SHS Web of Conferences* 158 (January): 02009.
<https://doi.org/10.1051/shsconf/202315802009>.