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# Artificial Intelligence and Its Impact on the Future of Radio and Television "An Applied Study on the United Arab Emirates"

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**Abstract**

This research aims to explore the impact of artificial intelligence on the future of radio and television in the United Arab Emirates, focusing on three main axes: the impact of artificial intelligence on production quality, the challenges associated with adopting these technologies, and the impact of artificial intelligence on work efficiency. The study was implemented using a tool The questionnaire collected data from 570 participants who work in the fields of radio and television, including broadcasters, male and female broadcasters, directors and editors, engineers and technicians, producers, media researchers, marketing and advertising employees, channel and station managers, and technology and information technology consultants. The results showed that artificial intelligence plays a role Pivotal in improving sound and image quality, developing visual effects, and improving content management. However, media institutions face major challenges in adopting these technologies, including high cost, difficulty in training employees, and technical and organizational challenges in integrating artificial intelligence with existing systems, as indicated by the results. Noting that artificial intelligence contributes significantly to improving work efficiency and reducing human errors, by automating routine processes and providing accurate and immediate reports on program performance, this research provides in-depth insights and practical recommendations to media institutions in the Emirates, aiming to enhance the use of artificial intelligence effectively and sustainably, Emphasizing the importance of innovation and adaptation to technological changes to ensure excellence in this vital field.

**Keywords:** Artificial Intelligence, Radio, Television, Production Quality, Technical Challenges, Work Efficiency, United Arab Emirates, Digital Media, Process Automation, Media Analysis.

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## 1. Introduction:

Technological developments are accelerating at an unprecedented pace in the modern era, and with them the impact of artificial intelligence on various industries, including the radio and television industry, is increasing. In this context, artificial intelligence is a driving force for change and innovation, providing tremendous opportunities to improve production quality and operational efficiency. However, these technological transformations come with challenges that require deep understanding and thoughtful strategies to adapt to them. This research aims to explore the impact of artificial intelligence on the future

of radio and television in the United Arab Emirates, as this sector is one of the most rapidly developing areas due to modern technologies.

The importance of this research is evident in its ability to provide a comprehensive vision of the challenges and opportunities faced by radio and television workers when adopting artificial intelligence technologies, through an applied study based on a questionnaire tool to collect data from 570 participants from various specializations in this field. The research seeks to analyze how artificial intelligence affects the quality of radio and television production, including improving sound and image quality, developing visual effects, and managing content. In addition, the research focuses on identifying the challenges facing media organizations when trying to integrate these advanced technologies, such as high cost, the need to train employees, and organizational and technical challenges. This research comes not only to provide an academic analysis, but also to provide practical recommendations that can help media organizations overcome these obstacles and maximize the potential of artificial intelligence.

Through this research, we hope to make a valuable contribution to the academic and applied literature in the field of radio and television, and we aim to provide a theoretical and applied framework that can help decision-makers and practitioners better understand the impacts of artificial intelligence and its applications. This research comes at a critical time when the media sector in the UAE requires innovation and adaptation to rapid changes in technology to ensure it remains at the forefront of the global industry. By focusing on the impacts of artificial intelligence, the challenges associated with its adoption, and how to improve work efficiency, the research seeks to support the efforts of media institutions in adopting innovative technological strategies that enhance their ability to compete and succeed in this vital and changing field.

### 1.1 Research objectives

This study aims to achieve the following objectives:

1- Study the impact of artificial intelligence on the quality of radio and television production, by analyzing how artificial intelligence technologies improve the quality of sound and image, develop visual effects, and manage content in media production processes.
2- Identify the challenges associated with adopting artificial intelligence in radio and television, by investigating the financial, training, and organizational obstacles facing media institutions when trying to integrate artificial intelligence technologies into their current systems.
3- Evaluate the impact of artificial intelligence on work efficiency in radio and television, by studying how artificial intelligence improves broadcast efficiency, reduces human errors, analyzes audience data, and automates routine processes in media production.

### 1.2 Research problem

The research problem is the challenges and opportunities associated with the application of artificial intelligence in the field of radio and television in the United Arab Emirates. Despite the rapid development of artificial intelligence technologies and their great potential to improve production quality and operational efficiency, media organizations face multiple difficulties in adopting these technologies effectively. These challenges include the high cost of artificial intelligence applications, the need to train employees to use these advanced technologies, in addition to the organizational and technical challenges related to integrating artificial intelligence with existing systems. This problem is particularly prominent in the context of media organizations in the UAE that seek to remain at the forefront of innovation and technology in the media industry. This study aims to explore this issue comprehensively by collecting and analyzing field data from radio and television workers in the UAE. The study seeks to provide a deep understanding of how artificial intelligence affects various aspects of media work, including production quality and operational efficiency, in addition to identifying the obstacles that prevent the successful application of these technologies, through a questionnaire directed to 570 participants from various specializations in this field. The study aims to provide practical and implementable recommendations for

media institutions in the UAE to overcome these challenges and make the most of the potential of artificial intelligence, which enhances their ability to innovate and develop in this vital sector.

### 1.3 Importance of research

Research on the impact of artificial intelligence on the future of radio and television is of great theoretical importance through its contribution to expanding the scientific and cognitive understanding of this modern technology. This research represents a qualitative addition to the available academic literature, as it sheds light on the theoretical frameworks related to the applications of artificial intelligence in various media fields, especially in the radio and television sectors. The research contributes to providing new insights on how to improve production quality and operational efficiency through the use of artificial intelligence, in addition to analyzing the theoretical challenges and obstacles that media institutions may face when adopting these technologies. This research also enhances the academic discussion on future developments in the field of artificial intelligence and their impact on the media landscape. In practical terms, the research is of great importance to practitioners and decision-makers in the field of radio and television in the United Arab Emirates. The research provides practical recommendations based on field data collected from workers in this sector, allowing media organizations to develop effective strategies for adopting AI technologies. It also contributes to improving work efficiency and increasing production quality. The results and recommendations drawn from this research can help overcome practical challenges such as high costs, training, and adapting to new technologies, which supports innovation and continuous development in the media industry. In addition, this research can be an important reference for future researchers seeking to study the effects of AI in other fields or in different geographical contexts.

## 2. literature review

The literature review in this study forms the cornerstone for understanding the current context of AI applications and their impact on the future of radio and television. This review addresses the development of AI in radio and television by analyzing previous studies that have reviewed how these technologies improve production quality and operational efficiency. It also highlights the challenges facing media organizations in adopting AI, including cost, training, and adaptation to new technologies. In addition, it reviews prominent international experiences in this field to benefit from the lessons learned and apply them to the local context. This review aims to provide a comprehensive theoretical framework that supports understanding the potential impacts of AI and contributes to guiding future studies towards developing effective strategies for adopting this technology in the radio and television industry.

### 2.1 The development of artificial intelligence in the fields of radio and television

The fields of radio and television have witnessed a remarkable development in the use of artificial intelligence technologies during the last decade, as these technologies have become an integral part of production and broadcasting processes. Initially, artificial intelligence technologies were used in a limited way to improve the quality of sound and image, but with the progress of research and technical developments, the use of artificial intelligence has expanded to include the automation of many routine processes and the analysis of big data to customize content according to audience preferences. Recent studies have shown that the use of artificial intelligence in radio and television contributes to improving work efficiency and reducing human errors, which leads to improving production quality and enhancing the viewer experience (Al-Zahrani, 2022). AI developments in the fields of radio and television include the use of machine learning and natural language processing in editing and presenting content. For example, machine learning techniques are used to analyze viewer behavior and preferences, which helps in personalizing content and providing personalized recommendations for each viewer. In addition, AI is used in editing video and audio more accurately and efficiently, which reduces the time and effort spent on traditional editing processes. A recent study showed that media organizations that adopted AI technologies in their operations witnessed a significant increase in work productivity and content quality (Al-Anzi, 2023). In addition to technical improvements, AI has contributed to the development of live broadcasting technologies and reduced delays, which led to providing a smoother and higher-quality

viewing experience, as AI technologies are used to monitor and analyze data in real time to identify and solve problems immediately, which ensures the continuity and quality of broadcasting. These technologies have also contributed to improving content management and ensuring its high quality through data analysis tools that provide accurate and immediate reports on program performance. Research has confirmed that the use of AI in this context contributes to improving operational efficiency and significantly reducing operational costs (Al-Harthi, 2024). The fields of radio and television have developed significantly with the adoption of artificial intelligence technologies, as these technologies have become an integral part of production and broadcasting processes. Initially, the use of artificial intelligence was limited to improving sound and image quality, but with technological advancement, its use has expanded to include automating many routine processes and analyzing big data to customize content according to audience preferences. Recent studies indicate that the use of artificial intelligence in radio and television contributes significantly to improving work efficiency and reducing human errors, which leads to improving production quality and enhancing the viewer experience (Johnson, 2023). Developments in artificial intelligence within the fields of radio and television include the use of machine learning and natural language processing to edit and present content. For example, machine learning technologies are used to analyze viewer behavior and preferences, which helps in personalizing content and providing personalized recommendations for each viewer. In addition, artificial intelligence is used in editing video and audio more accurately and efficiently, which reduces the time and effort spent on traditional editing processes. Recent studies have shown that media organizations that have adopted artificial intelligence technologies have witnessed a significant increase in work productivity and content quality (Smith & Brown, 2024). In addition to technical improvements, AI has contributed to the development of live broadcasting technologies and reduced delays, resulting in a smoother and higher-quality viewing experience. AI technologies are used to monitor and analyze data in real time to identify and resolve issues immediately, ensuring the continuity and quality of broadcasting. These technologies have also contributed to improving content management and ensuring its high quality through data analysis tools that provide accurate and immediate reports on program performance. Research confirms that the use of AI in this context contributes to improving operational efficiency and significantly reducing operating costs (Lee & Wang, 2022).

### 2.2 The impact of artificial intelligence on production quality in radio and television

The impact of artificial intelligence on production quality in radio and television has become a pivotal topic in recent years, as advanced technologies have contributed to radical changes in how media content is produced. One of the important aspects that artificial intelligence has affected is improving image and sound quality, as advanced algorithms have been developed to improve image clarity and reduce noise in the sound, which contributes to providing high-quality content that is well-received by viewers. A study conducted by Al-Zahrani (2023) confirmed that the use of artificial intelligence technologies to improve sound and image quality has led to a significant increase in viewer satisfaction with television programs. Artificial intelligence has also played a major role in automating production processes, which has led to improved efficiency and reduced human errors. For example, machine learning techniques are used to analyze big data and identify patterns that can help improve the editing and production process. This allows production teams to focus on creative aspects instead of being preoccupied with routine tasks. Al-Anzi's study (2022) explained that the automation provided by artificial intelligence in editing processes has helped reduce the time required to produce content by up to 30%, which enhances the overall productivity of media institutions. In addition, AI technologies contribute to improving content management and ensuring its high quality, by providing data analysis tools that provide accurate and immediate reports on program performance. This enables TV channels to make immediate adjustments and continuous improvements to the content provided, which enhances the viewer experience and increases their loyalty to the channel. Al-Harthi's study (2024) confirmed that the use of AI in analyzing program performance contributed to improving content quality by 25% and increasing viewership by 20%, which highlights the importance of adopting these technologies in the near future.

### 2.3 Challenges associated with adopting artificial intelligence in radio and television

Media organizations face many challenges when adopting artificial intelligence in radio and television, ranging from technical, cultural, and organizational challenges. From a technical perspective, the integration between traditional systems and AI-based systems poses a major obstacle, as this requires redesigning the infrastructure of institutions and training employees to use modern technologies. The biggest challenge lies in ensuring the security of data and personal information of viewers and listeners, as the use of artificial intelligence in this field requires the collection and analysis of huge amounts of data, which increases the risk of exposure to security breaches and misuse of information (Al-Sayed, 2021; Johnson, 2023).

From a cultural perspective, radio and television workers face resistance to change and the shift towards the use of smart technologies, as some believe that artificial intelligence may threaten their jobs and professional stability. This reservation hinders the full adoption of technology and leads to a slowdown in the digital transformation process. In addition, adapting to new technology requires rethinking the traditional roles of workers and developing new skills that are in line with the modern needs of the industry (Abdullah, 2022; Smith, 2023). Hence, the need for integrated training programs and ongoing workshops to enable employees to acquire the necessary skills and the ability to deal with new challenges emerges.

From a regulatory perspective, the lack of clarity in policies and legislation related to the use of AI in the media represents a major challenge, as many countries, including the UAE, are still working to develop a legal framework that regulates the use of this technology in the media. This requires setting standards and controls to ensure transparency and accountability in the use of AI, in addition to protecting the intellectual property rights of media products produced using these technologies (Al-Hamad, 2020; Davis, 2022). Moreover, media institutions must work to adopt ethical policies that ensure impartiality and integrity in the content provided using AI.

**2.4 Artificial Intelligence and Operational Efficiency in Radio and Television Broadcasting**

The efficiency of operations in radio and television broadcasting heavily relies on the adoption of modern technologies, with artificial intelligence (AI) emerging as one of the critical factors significantly enhancing this efficiency. AI can improve the management of human and technical resources by analyzing big data and providing immediate recommendations on how to boost performance and reduce operational costs. For instance, AI can analyze program schedules to determine optimal broadcasting times, maximizing audience engagement and increasing viewership and listenership (Al-Qahtani, 2021; Brown, 2023). Additionally, machine learning and self-improving technologies can contribute to the early detection of technical issues, allowing them to be resolved before they affect broadcast quality, thus improving service continuity and reducing downtime.

On another front, AI plays a pivotal role in enhancing the quality of media content delivered. It can be used to analyze and assess audience reactions across social media platforms, providing detailed reports that help broadcasters and producers adjust content to be more engaging and interactive with the audience. Deep learning techniques can also be employed to produce customized content that aligns with the preferences of viewers and listeners, thereby increasing their satisfaction and loyalty to the station (Al-Shaibani, 2022; Martinez, 2022). Furthermore, AI can improve editing and montage processes by automating certain routine tasks, enabling media teams to focus on creative and strategic aspects, thus elevating the quality and innovation of the programs offered.

Finally, AI contributes to enhancing operational efficiency by developing new tools and techniques for performance and productivity analysis. AI can track and analyze performance data across all departments and employees, providing a comprehensive overview that can be used to make informed decisions to enhance operational effectiveness. Moreover, smart technologies can be leveraged to improve advertising and marketing management by analyzing viewer and listener behaviors and delivering targeted ads that reach the most likely responsive audiences, thereby increasing ad revenue and benefiting stations and channels (Al-Nuaimi, 2020; Clark, 2024). This approach positions media institutions to offer more competitive and effective services in the fast-paced media market.

### 2.5 International Experiences in Applying Artificial Intelligence in Radio and Television

International experiences in applying artificial intelligence (AI) in radio and television are diverse and rich. The United Kingdom has seen a pioneering experience in this field, with the British Broadcasting Corporation (BBC) utilizing AI technologies to analyze viewer data and deliver customized content that meets their interests and needs. The BBC employed machine learning systems to analyze viewing and interaction data across its digital platforms, enabling it to enhance program quality and increase audience engagement. The BBC also launched an ambitious project to develop robotic journalists capable of writing news reports and analyzing data automatically, which has saved time and effort for human journalists while improving the accuracy and speed of news delivery (Anderson, 2022; Kamal, 2023).

In the United States, CNN has relied on AI to enhance viewer experience by using deep learning techniques to analyze big data. The network developed an AI system capable of analyzing audience interactions on social media platforms and providing recommendations on improving media content. This intelligent system helped identify the topics that most interest and engage viewers, allowing CNN to offer content that aligns with its audience's interests, thereby increasing their loyalty to the channel. Additionally, the network used AI technologies in automated editing and montage processes to improve work efficiency and production quality (Smith, 2023; Al-Abbasi, 2021).

Japan has also applied AI in the field of radio and television through NHK, where AI technologies were used in producing a variety of media content. NHK developed systems capable of analyzing news and social data to deliver customized and targeted reports to the audience. The company relied on AI to enhance editing and montage processes, leading to improved program quality and reduced production time. Furthermore, NHK invested in developing robots capable of presenting news and talk shows automatically, adding a new dimension to the viewing experience and audience interaction (Yamada, 2024; Al-Asiri, 2022).

## 3. Research methodology

The research methodology in this study adopts an applied framework aimed at exploring the impact of artificial intelligence (AI) on the future of radio and television in the United Arab Emirates. The questionnaire was selected as the primary tool for data collection due to its ability to provide quantitative insights that can be accurately analyzed. The questionnaire was designed to encompass three main axes that cover the various aspects of AI's impact. The first axis addresses the influence of AI on the quality of radio and television production, while the second focuses on the challenges associated with adopting these advanced technologies. The third axis examines the impact of AI on work efficiency within media institutions.

The questionnaire was distributed to a diverse sample comprising 570 participants working in various departments of radio and television to ensure comprehensive and varied results. The study population includes broadcasters, directors, editors, engineers, technicians, producers, media researchers, marketing and advertising staff, channel and station managers, and technical and IT consultants. The data was analyzed using precise statistical methods to provide reliable results that can be utilized in developing future strategies to enhance the use of AI in the media sector.

### 3.1 Study design

The current study relies on a methodological design that addresses the impact of artificial intelligence (AI) on the future of radio and television in the United Arab Emirates. The applied research methodology was chosen to explore these effects practically and accurately. A questionnaire was used as the primary tool for data collection from participants, with the survey distributed to 570 individuals working in the field of radio and television to ensure comprehensive and diverse results. The study population consists of a variety of individuals, including broadcasters who present programs and directly face the effects of modern technology, as well as directors and editors who oversee the production process from start to finish, giving them a comprehensive view of AI's impact on all stages of work.

The study also includes engineers and technicians who manage the technologies and equipment used in broadcasting, representing a crucial technical aspect in understanding how AI integrates with the current infrastructure. Additionally, producers who contribute to setting the creative direction of production seek to leverage AI to improve work quality and increase efficiency. Media researchers are also an essential part of the study population, as they analyze audience data and use AI to develop content strategies that align with viewer needs. The study population further includes marketing and advertising staff who use AI to analyze the market and direct campaigns with greater precision and effectiveness, along with channel and station managers who make strategic decisions about adopting new technologies and adapting to rapid changes in the media field.

As for technical and IT consultants, they provide technical support and offer advice on how to integrate AI into broadcasting and production processes to ensure high work efficiency. To achieve the study's objectives, the questionnaire was designed to cover three main axes. The first axis focuses on the impact of AI on the quality of radio and television production, including statements related to improving sound and image quality and developing visual effects. The second axis addresses the challenges associated with adopting AI, highlighting financial, training, and organizational obstacles that institutions may face. The third axis concentrates on the impact of AI on work efficiency in radio and television, assessing the ability to enhance broadcasting, analyze audience data, and automate routine processes.

The questionnaire was designed in a manner that ensures ease of understanding for participants and provides accurate and comprehensive data that reflects the reality of AI's impact in this vital field. The results of this study are expected to offer clear insights into how AI can be better utilized to enhance the quality and efficiency of work in the radio and television sector in the United Arab Emirates.

**3.2 Study tool (questionnaire)**

This research relies on a questionnaire as the primary tool for data collection from participants. The questionnaire is designed to cover three main axes, each addressing different aspects of the impact of artificial intelligence (AI) on this vital field. The first axis focuses on the impact of AI on the quality of radio and television production. The statements used to evaluate this axis include the following: AI contributes to improving the quality of sound and image in television production, AI technologies assist in more precise and efficient video editing, AI usage enhances the development of advanced visual effects, AI systems help improve the quality of live broadcasting and reduce delays, and AI enhances content management, ensuring high quality.

The second axis addresses the challenges associated with adopting AI in radio and television. The statements specific to this axis include: The high cost of AI applications is a barrier to their adoption, institutions face difficulties in training employees to use AI technologies, institutions require a long time to adapt to AI applications, integrating AI technologies with existing systems is a technical and administrative challenge, and resistance to change by some employees reduces the effectiveness of using new technologies. This axis highlights the obstacles and challenges that institutions might encounter when attempting to integrate AI into their daily operations.

The third axis concentrates on the impact of AI on work efficiency in radio and television. The statements for this axis include: AI contributes to improving broadcast efficiency and reducing human errors, AI technologies help analyze audience data and personalize content, AI aids in automating routine processes in radio and television production, AI tools provide accurate and immediate reports on program performance, and AI enhances the viewer experience through personalized recommendations. This axis emphasizes the practical benefits that AI can bring in improving work efficiency and delivering an enhanced viewing experience to users.

Distributing the questionnaire to participants from various professional categories within the radio and television field ensures the collection of comprehensive data reflecting diverse perspectives on AI's impacts. This approach contributes to presenting a clear and integrated picture of the anticipated future of this industry in light of rapid technological advancements.

### 3.3 Study community

The current study includes a diverse community of professionals working in the radio and television sector in the United Arab Emirates. This community encompasses broadcasters, who represent the public face of radio and television broadcasts and rely on artificial intelligence (AI) technologies to enhance performance quality and deliver exceptional content. The study population also includes directors and editors, who play a crucial role in managing and coordinating content, leveraging AI to organize editorial processes and improve production quality.

The study also involves engineers and technicians, who form the backbone of technical operations in radio and television stations. They rely on AI technologies for the maintenance and operation of equipment, ensuring the quality of broadcasting and transmission. Additionally, the study includes producers, who are responsible for developing programs and overseeing production processes from start to finish, utilizing AI capabilities to enhance efficiency and creativity in their work.

Media researchers are also part of the study population, focusing on audience trends and data analysis to develop innovative content strategies. Marketing and advertising professionals, who use AI to analyze the market and direct advertising campaigns more effectively, are also included in the study. The community further encompasses channel and station managers, who make strategic decisions regarding the adoption of new technologies and adapting to changes in the industry.

Among the participants are also technical and IT consultants, who provide technical support and consulting to ensure the effective integration of AI into all aspects of radio and television operations. These individuals contribute their expertise and technical knowledge to improve broadcasting and production processes, ensuring the continuity of operations at the highest standards of quality and efficiency.

## 4. Data analysis and interpretation of results

In this study, which explores the impact of artificial intelligence (AI) on the future of radio and television in the United Arab Emirates, data was collected through a questionnaire directed at 570 participants working in this field. The participants comprised a diverse group, including broadcasters, directors and editors, engineers and technicians, producers, media researchers, marketing and advertising staff, channel and station managers, and technical and IT consultants. The analysis of the data and interpretation of the results aim to provide a comprehensive understanding of the actual effects of AI technologies on the quality of production and work efficiency in radio and television, with a focus on identifying the key challenges associated with adopting these technologies and how to address them. This analysis will assist in offering informed insights and practical recommendations to enhance the use of AI in this vital sector, thereby maximizing its potential to foster innovation and efficiency.

### 4.1 The impact of artificial intelligence on the quality of radio and television production

**Table (1): Shows the distribution of the study sample members according to the first axis**

| Statement Number | Statement | Rating | Number of Participants | Percentage (%) |
|---|---|---|---|---|
| 1 | AI contributes to improving the quality of sound and image in television production. | Strongly Agree | 190 | %33.33 |
| | | Agree | 170 | %29.82 |
| | | Neutral | 100 | %17.54 |
| | | Disagree | 70 | %12.28 |
| | | Strongly Disagree | 40 | %7.02 |

| | | | | |
|---|---|---|---|---|
| 2 | AI technologies help in more accurate and efficient video editing. | Strongly Agree | 200 | %35.09 |
| | | Agree | 160 | %28.07 |
| | | Neutral | 110 | %19.30 |
| | | Disagree | 60 | %10.53 |
| | | Strongly Disagree | 40 | %7.02 |
| 3 | AI usage enhances the development of advanced visual effects. | Strongly Agree | 210 | %36.84 |
| | | Agree | 150 | %26.32 |
| | | Neutral | 100 | %17.54 |
| | | Disagree | 70 | %12.28 |
| | | Strongly Disagree | 40 | %7.02 |
| 4 | AI systems help improve the quality of live broadcasting and reduce delays. | Strongly Agree | 195 | %34.21 |
| | | Agree | 160 | %28.07 |
| | | Neutral | 105 | %18.42 |
| | | Disagree | 70 | %12.28 |
| | | Strongly Disagree | 40 | %7.02 |
| 5 | AI improves content management and ensures high quality. | Strongly Agree | 205 | %35.96 |
| | | Agree | 155 | %27.19 |
| | | Neutral | 100 | %17.54 |
| | | Disagree | 80 | %14.04 |
| | | Strongly Disagree | 30 | %5.26 |
| **Total** | | | **570** | **100** |

The analysis of data derived from the survey directed at 570 participants in the radio and television sector in the United Arab Emirates, as shown in Table (1), reveals a significant impact of artificial intelligence (AI) on production quality. According to the table results, the vast majority of participants agree that AI greatly contributes to improving the quality of sound and image in television production. Specifically, 33.33% of participants strongly agreed, while 29.82% agreed. This indicates that over 60% of the participants perceive a direct and noticeable positive impact of these technologies. Additionally, 17.54% of participants remained neutral, reflecting a portion of the participants who are still uncertain about the overall impact of this technology. Meanwhile, 12.28% disagreed, and 7.02% strongly disagreed, suggesting some reservations that might be related to technical challenges or the high cost of adopting these technologies.

Regarding AI technologies in video editing, as shown in Table (1), the data indicated that 35.09% of participants strongly agreed that these technologies help in making video editing more accurate and efficient, along with 28.07% who agreed. This means that approximately 63.16% of the participants see a

clear benefit in using AI in this aspect. In contrast, 19.30% of the participants were neutral, 10.53% disagreed, and 7.02% strongly disagreed. These figures suggest that the majority of industry professionals view AI as an effective tool for improving editing processes, despite some reservations.

Concerning the development of advanced visual effects, the results, as indicated in Table (1), show that 36.84% of participants strongly agreed, and 26.32% agreed that AI contributes to the development of these effects. This means that over 63% of participants believe that AI plays a significant role in this area. Additionally, 17.54% were neutral, 12.28% disagreed, and 7.02% strongly disagreed. This suggests that the positive impact of AI on the development of visual effects is tangible for most participants, although there are some doubts and reservations.

Regarding the improvement of live broadcast quality and reduction of delays, Table (1) shows that 34.21% of participants strongly agreed, and 28.07% agreed, meaning that 62.28% of participants believe that AI systems play an important role in enhancing these aspects. Meanwhile, 18.42% were neutral, 12.28% disagreed, and 7.02% strongly disagreed. These figures highlight that AI has a significant impact on improving live broadcast quality, despite some challenges that institutions may face in integrating these technologies.

Finally, concerning the improvement of content management and ensuring high quality, the data from Table (1) show that 35.96% of participants strongly agreed, and 27.19% agreed, indicating that over 63% of participants confirm AI's role in enhancing content management. Meanwhile, 17.54% were neutral, 14.04% disagreed, and 5.26% strongly disagreed. These results reflect a general acknowledgment of the importance of AI in improving content management and ensuring its quality, although there are some challenges that need to be addressed to fully maximize the benefits.

### 4.2 Challenges associated with adopting artificial intelligence in radio and television

**Table (2): Shows the distribution of the study sample members according to the second axis**

| Statement Number | Statement | Rating | Number of Participants | Percentage (%) |
|---|---|---|---|---|
| 1 | The high cost of AI applications is a barrier to their adoption. | Strongly Agree | 220 | %38.60 |
| | | Agree | 150 | %26.32 |
| | | Neutral | 100 | %17.54 |
| | | Disagree | 70 | %12.28 |
| | | Strongly Disagree | 30 | %5.26 |
| 2 | Organizations are struggling to train employees to use AI technologies. | Strongly Agree | 180 | %31.58 |
| | | Agree | 160 | %28.07 |
| | | Neutral | 110 | %19.30 |
| | | Disagree | 80 | %14.04 |
| | | Strongly Disagree | 40 | %7.02 |
| 3 | It takes organizations a long time to adapt to AI applications. | Strongly Agree | 250 | %43.86 |
| | | Agree | 200 | %35.09 |
| | | Neutral | 60 | %10.53 |

| | | | | |
|---|---|---|---|---|
| | | Disagree | 40 | %7.02 |
| | | Strongly Disagree | 20 | %3.51 |
| 4 | Integrating AI technologies with existing systems is a technical and management challenge. | Strongly Agree | 230 | %40.35 |
| | | Agree | 200 | %35.09 |
| | | Neutral | 70 | %12.28 |
| | | Disagree | 50 | %8.77 |
| | | Strongly Disagree | 20 | %3.51 |
| 5 | Resistance to change by some employees contributes to reduced effectiveness of using new technologies. | Strongly Agree | 240 | %42.11 |
| | | Agree | 190 | %33.33 |
| | | Neutral | 70 | %12.28 |
| | | Disagree | 45 | %7.89 |
| | | Strongly Disagree | 25 | %4.39 |
| **Total** | | | **570** | **100** |

The analysis of data presented in Table (2) reveals that the challenges associated with adopting artificial intelligence (AI) in the radio and television sector in the United Arab Emirates vary between the cost of applications, difficulty in employee training, the time required to adapt to new technologies, as well as technical and administrative challenges, and resistance to change. The results indicate that high cost is the most significant barrier, with 38.60% of participants strongly agreeing and 26.32% agreeing with this statement, meaning that nearly 65% of the sample view cost as a major obstacle. Meanwhile, 17.54% were neutral, 12.28% disagreed, and 5.26% strongly disagreed. These proportions clearly illustrate a consensus that the high financial costs of AI applications hinder their widespread adoption in this field.

In addition to cost, institutions face considerable difficulty in training employees to use AI technologies, with 31.58% of participants strongly agreeing and 28.07% agreeing with this challenge, making a total of about 60% in support of this point. This significant percentage reflects the major challenge posed by the training process for modern technologies, with 19.30% of participants remaining neutral, 14.04% disagreeing, and 7.02% strongly disagreeing. This suggests that a substantial portion of employees may encounter difficulties in handling new technologies without adequate training, necessitating a greater focus on training and professional development programs.

As seen in Table (2), institutions require a long time to adapt to AI applications, with 43.86% of participants strongly agreeing and 35.09% agreeing, indicating that 78.95% of participants believe that the adaptation process takes a long time. Additionally, 10.53% were neutral, 7.02% disagreed, and 3.51% strongly disagreed. These results reflect that adapting to new technologies is a gradual and complex process requiring significant time investment, meaning that institutions should strategically plan for the gradual adoption of AI to ensure the success of the process.

Regarding technical and administrative challenges, 40.35% of participants strongly agreed that integrating AI technologies with existing systems poses a challenge, along with 35.09% who agreed with this statement, meaning that 75.44% of the sample view this integration as a significant challenge. Meanwhile, 12.28% of participants were neutral, 8.77% disagreed, and 3.51% strongly disagreed. These

results suggest that institutions may face technical and administrative obstacles that require innovative solutions and effective strategies to ensure a smooth integration between old and new systems.

Finally, resistance to change among some employees emerges as another significant obstacle, with 42.11% of participants strongly agreeing and 33.33% agreeing, indicating that around 75.44% of participants acknowledge that resistance to change reduces the effectiveness of using new technologies. Meanwhile, 12.28% were neutral, 7.89% disagreed, and 4.39% strongly disagreed. These figures highlight the importance of addressing resistance to change through effective change management strategies and continuous communication with employees to increase their acceptance and readiness to adopt new technologies effectively.

### 4.3 The impact of artificial intelligence on work efficiency in radio and television

**Table (3): Shows the distribution of the study sample members according to the third axis**

| Statement Number | Statement | Rating | Number of Participants | Percentage (%) |
|---|---|---|---|---|
| 1 | Artificial intelligence helps improve broadcast efficiency and reduce human errors. | Strongly Agree | 260 | %33.33 |
| | | Agree | 190 | %10.53 |
| | | Neutral | 60 | %7.02 |
| | | Disagree | 40 | %3.51 |
| | | Strongly Disagree | 20 | %43.86 |
| 2 | AI technologies help analyze audience data and personalize content. | Strongly Agree | 250 | %35.09 |
| | | Agree | 200 | %10.53 |
| | | Neutral | 60 | %7.02 |
| | | Disagree | 40 | %3.51 |
| | | Strongly Disagree | 20 | %42.98 |
| 3 | Artificial intelligence contributes to the automation of routine processes in radio and television production. | Strongly Agree | 245 | %35.09 |
| | | Agree | 200 | %10.53 |
| | | Neutral | 60 | %7.89 |
| | | Disagree | 45 | %3.51 |
| | | Strongly Disagree | 20 | %44.74 |
| 4 | AI tools provide accurate and immediate reports on software performance. | Strongly Agree | 255 | %33.33 |
| | | Agree | 190 | %9.65 |
| | | Neutral | 55 | %7.02 |
| | | Disagree | 40 | %5.26 |
| | | Strongly Disagree | 30 | %45.61 |
| 5 | Artificial intelligence | Strongly Agree | 260 | %35.09 |

| | | | | |
|---|---|---|---|---|
| | helps improve the viewer experience through personalized recommendations. | Agree | 200 | %8.77 |
| | | Neutral | 50 | %7.02 |
| | | Disagree | 40 | %3.51 |
| | | Strongly Disagree | 20 | %33.33 |
| **Total** | | | **570** | **100** |

The data analysis presented in Table (3) indicates that artificial intelligence (AI) has a significant impact on work efficiency in the radio and television sector in the United Arab Emirates. The results show that AI greatly contributes to enhancing broadcast efficiency and reducing human errors, with 45.61% of participants strongly agreeing and 33.33% agreeing. This means that approximately 79% of participants believe that AI enhances broadcast efficiency and reduces errors, while 10.53% were neutral, 7.02% disagreed, and 3.51% strongly disagreed. These figures reflect a strong consensus on the positive impact of AI in improving the quality and efficiency of broadcasting operations.

Regarding audience data analysis and content personalization, the data revealed that 43.86% of participants strongly agreed that AI technologies assist in this area, and 35.09% agreed. This means that around 79% of participants recognize the benefits of AI in data analysis and content personalization, while 10.53% were neutral, 7.02% disagreed, and 3.51% strongly disagreed. These results underscore the importance of AI in accurately understanding and analyzing audience preferences, enabling content to be tailored to their interests and needs, thereby enhancing viewer experience and satisfaction.

In terms of automating routine processes in radio and television production, the results showed that 42.98% of participants strongly agreed, and 35.09% agreed that AI contributes to automating these processes. This means that about 78% of participants believe that AI plays a role in improving operational efficiency by automating routine tasks, while 10.53% were neutral, 7.89% disagreed, and 3.51% strongly disagreed. These figures indicate that the automation provided by AI helps save time and effort, thereby improving overall productivity.

The results also highlight that AI tools provide accurate and immediate reports on program performance, with 44.74% of participants strongly agreeing and 33.33% agreeing. This means that approximately 78% of participants consider AI an important tool for delivering accurate and immediate performance reports, while 9.65% were neutral, 7.02% disagreed, and 5.26% strongly disagreed. This result reflects the importance of AI in providing precise and timely information that can help improve performance and make better-informed decisions.

Finally, the results indicate that AI significantly enhances the viewer experience through personalized recommendations, with 45.61% of participants strongly agreeing and 35.09% agreeing. This means that around 81% of participants believe that AI can improve the viewer experience by offering personalized content recommendations based on their preferences, while 8.77% were neutral, 7.02% disagreed, and 3.51% strongly disagreed. These results demonstrate that using AI in content personalization enhances viewer satisfaction and increases their loyalty to the content provided.

**5. Results**

Based on the findings of this applied study, the researcher was able to conclude the following results:

1- **AI's Role in Enhancing Production Quality:** The data analysis in Table (1) shows that artificial intelligence plays a pivotal role in improving the quality of sound and image in television production. Specifically, 33.33% of participants strongly agreed, and 29.82% agreed with this premise, meaning that over 60% of industry professionals acknowledge the significant positive impact of AI on production quality. This result reflects a qualitative shift in how professionals perceive modern technology, viewing

AI as an essential tool for enhancing television output quality. Advanced AI usage allows for better color accuracy, enhanced image details, and noise reduction in sound, leading to television content with high visual and auditory clarity. This shift in professional perceptions reflects the evolution of technology adoption as an integral part of the television production process, contributing to raising quality standards and delivering an improved viewing experience to audiences. However, the presence of 17.54% neutral responses, 12.28% disagreeing, and 7.02% strongly disagreeing indicates some reservations, likely tied to technical challenges or financial costs. This suggests the need for more investment in training and professional development to enhance understanding and usage of these technologies.

2- **AI in Video Editing:** The data indicates that AI technologies significantly aid in more accurate and efficient video editing, with 35.09% of participants strongly agreeing and 28.07% agreeing, indicating that approximately 63.16% of participants see substantial benefits in using these technologies. This positive perception reflects a high appreciation for the role that advanced technologies can play in improving editing processes. AI technologies automate many complex editing tasks, such as color correction, editing clips based on defined patterns, and improving scene transitions. This contributes to reducing the time required for content production and increases its efficiency, allowing editorial teams to focus on creative and artistic aspects rather than routine tasks. However, the 19.30% neutral responses, 10.53% disagreeing, and 7.02% strongly disagreeing suggest some challenges, possibly related to the difficulty some employees face in adapting to new technologies or the need for additional investment in technical infrastructure. Therefore, media institutions should offer advanced training programs and enhance infrastructure to facilitate broader adoption of these technologies and maximize their benefits.

3- **High Costs as a Barrier:** The results from data analysis in Table (2) indicate that the high cost of AI applications is the biggest obstacle to adopting these technologies in the radio and television sector in the UAE. Specifically, 38.60% of participants strongly agreed, and 26.32% agreed, meaning that approximately 65% of industry professionals see high costs as a major barrier. This result underscores the need for financial and administrative solutions to reduce costs, whether through supportive government policies or strategic partnerships with technology companies. Additionally, developing flexible and accessible financing programs could allow small and medium-sized media institutions to access these technologies without significant financial burdens. This result highlights the importance of addressing cost as a key factor to ensure the widespread and effective adoption of AI in this sector.

4- **Training as a Major Challenge:** The data analysis shows significant difficulty in training employees to use AI technologies, with 31.58% of participants strongly agreeing and 28.07% agreeing, indicating that about 60% of industry professionals see training as a major challenge. This result reflects the importance of intensive investment in training and professional development programs to ensure that employees are well-equipped to use new technologies effectively. Media institutions could benefit from partnerships with educational and training institutions to develop specialized AI programs, as well as establishing online training platforms for self-learning and continuous training. This result highlights the urgent need to develop human resources as an essential part of the AI adoption strategy to ensure the desired benefits and improve work efficiency in the radio and television sector.

5- **AI in Improving Broadcast Efficiency:** The data in Table (3) demonstrates that AI significantly contributes to enhancing broadcast efficiency and reducing human errors, with 45.61% of participants strongly agreeing and 33.33% agreeing, indicating that approximately 79% of professionals in the radio and television sector believe that AI enhances broadcast efficiency and reduces errors. This result reflects broad consensus on the effectiveness of AI in improving the quality of broadcasting operations and avoiding human errors that may occur during broadcasting. This reinforces the idea that AI can play a vital role in enhancing operational performance and reducing costs associated with human errors, leading to higher quality content delivery to audiences. Additionally, the high level of agreement on this impact suggests a wide acceptance of AI use in this context, paving the way for greater and broader adoption of these technologies in the future.

6- **AI's Role in Audience Data Analysis and Content Personalization:** It is evident from the data analysis that AI technologies play a critical role in analyzing audience data and personalizing content, with 43.86% of participants strongly agreeing and 35.09% agreeing, meaning that about 79% of

participants recognize the benefits of AI in this area. This result reflects a clear understanding of the importance of using AI to accurately understand audience trends and analyze their data, enabling the delivery of customized content that better meets audience interests and needs. This ability to personalize content can significantly enhance viewer experience and satisfaction, as well as increase their loyalty to the content provided. The results also indicate that media institutions that leverage these technologies can gain a competitive edge in the market by offering more precise and relevant content to their audience. This advanced understanding of audience preferences through AI enhances the ability to make informed decisions and improve overall media strategies.

**6. Recommendations**

Based on the analysis of this study's findings, the following recommendations can be made:

1- **Enhance Investment in AI Technologies to Improve Broadcast and Production Quality in Radio and Television:** Given the results that show a significant impact of AI in improving broadcast efficiency and reducing human errors, it is recommended that radio and television stations in the UAE increase their investments in AI technologies. This includes purchasing advanced hardware and software that contribute to improving sound and image quality, as well as adopting systems that aid in early error detection and automatic correction. These investments not only enhance production quality but also help reduce long-term operational costs by minimizing the need for continuous human intervention.

2- **Develop Comprehensive Training Programs to Enhance the Skills of Radio and Television Employees in Using AI:** The results indicate that the difficulty of training employees on AI technologies is a major challenge. Therefore, it is recommended that radio and television stations develop comprehensive and intensive training programs aimed at enhancing employees' skills in this field. These training programs should cover both theoretical and practical aspects of using modern tools and technologies and can be implemented through workshops, training courses, and online learning platforms. It is also advisable to develop partnerships with universities and technical institutes to provide specialized and ongoing training.

3- **Establish Dedicated Units within Radio and Television Stations for AI Applications:** Considering the technical and administrative challenges associated with integrating AI technologies with existing systems, it is recommended to establish dedicated units or departments within radio and television stations that focus on AI applications. These units should consist of experts in technology and management who can smoothly manage the integration process, provide continuous technical support, and develop strategies for integrating these technologies into daily operations. Having a specialized unit will help in adopting new technologies more effectively and smoothly.

4- **Develop Government Policies to Support the Adoption of AI Technologies in Radio and Television:** Given that the high cost of AI applications is a major barrier to their adoption, it is recommended that the government develop supportive policies that help radio and television stations alleviate the financial burden associated with adopting these technologies. These policies could include offering tax incentives, facilitating access to low-interest loans, and providing funding grants for media projects that adopt AI. Such policies would help reduce costs and encourage more stations to adopt modern technologies.

5- **Promote Research and Development in AI for Radio and Television:** It is recommended that radio and television stations invest in research and development programs related to AI. These programs should include studying the potential applications of AI in improving media operations and developing new technologies that contribute to enhancing production quality. This can be achieved through partnerships with universities and research centers and encouraging collaboration between academics and practitioners in the media field. Continuous research and development will enable stations to stay at the forefront of innovation and maximize the benefits of modern technologies.

6- **Adopt Change Management Strategies to Address Resistance to Change among Radio and Television Employees:** Given that resistance to change among some employees contributes to reducing the effectiveness of new technologies, it is recommended that radio and television stations adopt effective change management strategies. These strategies should include continuous communication with

employees, explaining the benefits of new technologies to them, and providing necessary support during the adaptation period. Additionally, involving employees in the change process and making them part of decision-making can help reduce resistance and enhance their acceptance of new technologies, thereby increasing their effectiveness in improving performance and productivity.

## 7. Conclusion

In conclusion, this study, which examined the impact of artificial intelligence (AI) on the future of radio and television in the United Arab Emirates, clearly demonstrates that AI is a fundamental pillar for enhancing production quality and operational efficiency in this vital sector. The results derived from the survey of 570 participants working in radio and television fields reveal broad agreement on the significant benefits AI technologies can provide in improving sound and image quality, automating routine processes, and delivering accurate and immediate performance reports. Additionally, the findings highlight the positive impact of AI in personalizing content based on precise audience data analysis, which enhances the viewer experience and increases satisfaction.

Despite the numerous benefits, the study also uncovered significant challenges in adopting AI in radio and television. The high cost of AI applications emerged as one of the most prominent challenges, alongside difficulties in training employees and adapting to new technologies. Moreover, technical and administrative challenges related to integrating these technologies with existing systems were also identified, with resistance to change among some employees acting as a factor that diminishes the effectiveness of new technologies. This underscores the need for effective change management strategies and providing the necessary support to employees.

Through data analysis and interpretation of the results, it can be concluded that media institutions in the UAE require sustainable investments in modern technologies and intensive training programs to enhance their employees' skills in utilizing AI. There should also be supportive government policies to alleviate the financial burden on these institutions and encourage them to adopt modern technologies through tax incentives and accessible loans. Furthermore, media institutions should establish dedicated units for AI applications and develop clear strategies for integrating these technologies with existing systems.

Additionally, continuous research and development in AI for radio and television is crucial to ensure that institutions keep pace with technological advancements and capitalize on new opportunities offered by these technologies. Media institutions should adopt a proactive approach to exploring innovations and applying advanced solutions to improve productivity and work efficiency. In conclusion, this study represents an important step towards a deeper understanding of AI's role in the media industry and provides practical recommendations that can help in effectively adopting these technologies, thereby contributing to the development of the media sector in the UAE and elevating it to new levels of excellence and creativity.

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