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The Perception of Artificial Intelligence in the News Industry

A Study of Al Jazeera Network

Jana Elmesselmani

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The Perception of Artificial Intelligence in the News Industry

A Study of Al Jazeera Network

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A Thesis Submitted to the Faculty of College of Humanities and Social Sciences in Partial Fulfillment of the Requirements for the Degree of Master of Arts

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ABSTRACT

This study aims to examine the perceptions of the news industry on artificial intelligence utilizing Aljazeera as a case study. Literature reported that studies on A.I. in the context of the news industry are scarce; therefore, exploratory and qualitative research approaches were used to study this phenomenon in greater detail. The data were collected through four in-depth interviews coupled with a survey. The interview participants were carefully selected to understand the research topic comprehensively. Different perspectives were sought: a professor and a decision-maker with a broad vision and plan for the future of artificial intelligence, an expert in A.I. models providing a technical perspective, a journalist and an academic at the same time, and an Aljazeera producer working with A.I. models. A structured five-point Likert Scale questionnaire was completed by 33 respondents working at Aljazeera media network. This study used descriptive statistics to extract information from the collected data. Descriptive statistics reported that 91% of respondents believe that A.I is less biased compared to humans. The results further revealed that the majority (62.5%) of respondents showed disagreement that A.I might replace humans in the newsroom for writing articles. Moreover, 66% of respondents believe A.I will increase the unemployment rate in the news industry because of replacing humans. Most respondents showed disagreement that A.I will comply with the journalism ethics, with only 21% agreeing.

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DEDICATION

I extend my sincerest thanks to my friends and family. This project would not have been possible without their valuable contributions and input. To them, I express my most profound appreciation and gratitude.

CHAPTER 1

1.1 Introduction

One of the first Artificial intelligence tools was created to monitor basketball news. In 2007, an engineer at the IT and networking company Cisco launched “Stat Sheet”, an online sports network. The network covered everything, from points, assists, rebounds, steals, blocks, turnovers, and fouls (Saad & Issa, 2020).

A.I. gradually integrated into the news industry to cover all topics. Respected media companies in the United States, including Forbes and Associated Press, led the game in around 2010, when software companies; Narrative Science and Automated Insights, provided them with A.I. technologies that generated hundreds of thousands of texts (Saad & Issa, 2020). Europe has also ridden the wave, with companies providing limited services to a select group of media consumers. There, automatically- generated texts mainly revolve around stocks, weather forecasts, and sports. Although Aljazeera utilizes A.I. for collecting data and news verification, as well as other technical uses, it has not applied to its newsrooms.

As the media employs A.I. in story discovery, story generation, and story distribution, this process gives cause for severe ethical concerns. In this case, multiple questions can be raised: Who will assume ownership of A.I. generated intellectual property assets? Who will be responsible for the generation of correct output? Will robots obey journalism ethics? Does the application of intelligent technology suggest the conquest of the long-awaited complete objectivity? While the list of questions goes on, several authors have tackled the ethical challenges posed by this tool to make news.

Humanity was slow to realize the true potential of A.I. It was only recently that this topic took center stage in the discussions of high-profile investors and entrepreneurs. Despite the potential impact of artificial intelligence, some experts still believe that the development of such technology could bring about the end of the human race (Barrat, 2013).

A.I. simulates human intelligence, and thus it is mainly used in industries or jobs that require human intelligence. The news industry is a case in point, as A.I. can detect, filter, and distribute relevant news significantly.

1.2 Peculiarities of A.I. in the News Industry

A.I. uses in the media can be both beneficial and detrimental. On the one hand, A.I. may be incorporated to carry out daily recurring tasks, yet it may not completely replace human interaction. What differentiates the media industry and journalism from other sectors is the human interaction needed. Unlike industries such as manufacturing and transportation, in which thousands of jobs consist of repetitive tasks (Gentzkow, 2018), journalism entails the production of complex content that particularly emphasizes areas like judgment, interpretation, creativity, and communication, where humans have the upper hand.

A.I. provides tools to help journalists in breaking news collection (Xiao et al., 2015), help reporters cover news happening in other geographic locations, spot emerging trends, and increase the efficiency of retrieving, understanding, and publishing relevant content. A.I. upholds and enhances the journalistic process by offering real-time multilingual headlines, articles, and dynamic summaries extracted from thousands of trusted online news outlets around the globe.

Most importantly, when A.I. tools are left to carry out repetitive and recurrent journalism tasks, human journalists focus more on and dedicate more time to more complex and advanced tasks (Fanta, 2017). These developed skills can include analyzing documents, making observations, and conducting interviews. As for A.I. technology helps memorize and store the data it collects through carefully crafted algorithms and pattern-matching. In other words, A.I. can store enormous amounts of data. Moreover, A.I. technologies are a powerful tool for speeding up research and accumulating and cross-referencing data.

To translate these abilities on the ground, the leading UK news agency, Press Association (PA), for instance, has entered into a partnership with news automation specialists Urbs Media; The aim was to create robots to write as many as 30,000 local news pieces every month (Radcliffe & Ali, 2017). Some media outlets go even further, like Bloomberg News, which uses automated technology for around a third of the content it publishes (Peiser, 2019).

1.3 A Shield Against Fake News

Every minute, marketers, public opinion makers, politicians, and propagandists share 120,000 pieces of information over different media platforms to achieve political, economic, and social benefits, sixty percent of which are fake (Kim, 2019).

In the past, the world relied on credible newspapers and TV channels as their sources of knowledge and information. Nowadays, there is an overload of information and an urgency to put it out on social media and populate websites without fact-checking and verifying any news. This, in turn, propagates inauthentic content. The situation in the Middle East is even worse as the governments control the media and disseminate the information needed to

shape their citizens' global and domestic political perceptions (Jones, 2015). However, with A.I.-powered analytical tools, fake news can be detected and monitored in real-time. For instance, Twitter adopts Natural Language Processing (NLP), which observes how words in a sentence are connected to understand the meaning and the context of a whole sentence. Likewise, Facebook has deployed various A.I. tools, such as SimSearchNet++, to flag and spot false and manipulated images (Meta A.I. blog, 2020). Moreover, DeepText is an A.I. algorithm adopted by Instagram, a text understanding engine that provides users with a spam-free experience (Meta A.I. blog, 2020). Furthermore, Aljazeera network uses A.I in news verification in digital newsgathering, which will be discussed in depth in this study.

1.4 Challenges and ethical concerns

Although A.I. can be a shield in the face of fake news, the challenge remains in creating reliable A.I. that can report and accurately analyze news free from any manipulation. As stated by Túñez-López (2021), Caswell argues that the computational approach to news is an unfinished product developed in various cases and lacks an integrated framework. Humans make A.I. tools and technologies; therefore, it is dependent on humans to design and train trustworthy models. For instance, these models must follow fair and consistent processes, make just decisions, and include internal and external checks to reduce discriminations and biases. Getting accurate, high-quality, reliable, and authentic information is the right of every citizen, and it is the responsibility of both national and international newsrooms to ensure the reliability, authenticity, and accuracy of shared information in print and electronic media. This requires that news channels give editorial freedom to journalists, provide independent, unbiased, and accurate reporting, and utilize artificial intelligence to cater to fake news issues.

This study explores the use of A.I. in journalism, emphasizing the ethical decision-making process that comes along with implementing this technology. In particular, the Al Jazeera network will serve as our case study, thanks to its contribution to combating fake news and controlling fake content through A.I. The study will explain the strategies and approaches that the network has adopted for this purpose. In addition, the interviews carried out with specialists in the field will be showcased in a documentary, in which they provide their points of view and opinions regarding A.I. in the news industry.

Staff in Al Jazeera Network were interviewed about the different A.I. tools incorporated in the newsroom. This research discusses the possible ethical challenges which might be arising from implementation of A.I in the newsroom. GPT3 is the latest A.I technology that produces human-like text using deep learning (Floridi & Chiriatti, 2020). The model can learn and produce human-like text using large text datasets, and it became the most extensive neural network ever built according to OpenA.I. (2022). Another area that will be tackled is that the Arabic language falls short of A.I. tools and is often excluded in A.I. inventions. In addition, a survey is conducted to explore Aljazeera employees' opinions about A.I. and its implication in newsrooms. Finally, after covering these areas, relevant recommendations will be provided.

CHAPTER 2: LITERATURE REVIEW

2.1 Artificial Intelligence

In recent times, the term artificial intelligence has gained massive popularity; however, the concept dates to 1955, when the term was first used to describe engineering as a branch of science used to make intelligent machines. Jamil (2021) noted that the general information type and communication technology and the "datafication" of society extended their applicability in most disciplines, including journalism. Therefore, artificial intelligence

technology has witnessed noteworthy progress in recent times. Pashkevich (2018) noted that the field of artificial intelligence is chiefly connected to understanding and making intelligent entities that are safe and work effectively in various novel situations. Hence, artificial intelligence entails carrying out human tasks such as identifying images and doing recurrent tasks. On the other hand, Munoriyarwa et al. (2021) defined *artificial intelligence* as the steps to use the computing systems which work with machines that can finish operations parallel to human decision-making. Thus, artificial intelligence depicts a step-by-step process of resolving routine and special issues.

As suggested by Barcelo et al. (2021), Artificial intelligence is categorized into seven subfields: computer vision, machine learning, speech recognition, planning, scheduling and optimization, natural language processing, robotics, and expert systems. Machine learning can design algorithms that produce data-driven modules without any previous solutions to the issue. The authors further noted that the implementation of machine learning could significantly minimize the operational cost and the cost of human resources within the news industry. In other words, Artificial intelligence interprets, organizes, and generates news through algorithms that process massive amounts of data.

2.2 Artificial Intelligence in the News Industry

Every minute, marketers, public opinion makers, politicians, and propagandists share 120,000 pieces of information over different media platforms to achieve political, economic, and social benefits, 60% of which are fake (Kim, 2019). Ong and Cabanes (2018) claimed that half of Europeans and two-thirds of Americans experienced disinformation daily. The situation in the Middle East is even worse as the governments control the media and the information to shape the global and domestic political perceptions of their citizens. This is because the likelihood of fake news spread is about seventy times

higher than factual news. Fake news refers to misleading material spread; the phenomenon first occurred with the beginning of the written press and eventually evolved into an element of journalism (Stavre & Punti, 2019). The term "fake news" became an apparent and essential aspect following Trump's successful bid, Brexit (Rose, 2017), the Catalan independence, Brexit, and the Arab Spring because of its devastating impact on society, financial markets, public opinion, democracy, and reduction in watch time and viewership. For instance, Martin and Hassan (2020) reported that Arab News Media faced a 30% reduction in newspaper circulation and a 70% reduction in News viewership. Getting accurate, high-quality, reliable, and authentic information is the right of every citizen and it is any newsroom's responsibility to ensure the reliability, authenticity, and accuracy of shared information in print and electronic media. This requires news channels to give editorial freedom to journalists and encourage independent, unbiased, and accurate reporting while utilizing artificial intelligence (A.I.) to deter fake news issues.

Numerous empirical studies have demonstrated the potential of artificial intelligence, specifically in the technological and scientific fields. Even though the cost of developing an artificial intelligence system is high, researchers and practitioners have acknowledged that integration of artificial intelligence minimizes the costs. According to Kothari and Cruikshank (2021), the major barrier to implementing artificial intelligence in the news media is the talent competition that entails attracting talent and retaining the professionals in the newsroom who offer low wages compared to the tech industry. This brain drain, which is prevalent in newsrooms, works against implementing the technologies within the news industry. Nevertheless, the news industry across the globe is embracing artificial intelligence solutions within the news industry. Research carried out by Ali and Hassoun (2019) revealed that many newsrooms have started to automate the news industry. Despite

the fact that journalistic bots do not employ machine learning, they rely on processes to organize and schedule messages for publication.

Andrade et al. (2018) identified four distinct categories of news bots in their research, including inputs and sources of input data, news bot output, and the algorithms that control how a news bot turns inputs into outputs. Kothari and Cruikshank (2021) noted that artificial intelligence techniques aim to lessen the cost of investigative journalism. They are established to create a story, which implies that algorithms should be devised and applied for projects. Torrijos (2021) added that news projects based on investigations that rely on a computer operation program, necessitate considerable investments in technological infrastructure and the hiring of professionals to design codes. The authors stated that artificial intelligence models are programmed through old and biased datasets to generate ethical complications. Similarly, Gody's (2021) study examined the application of A.I. in the newsroom to combat fake news. This study reported that Al-Jazeera might face three critical challenges in implementing A.I. in newsrooms: lack of technological infrastructure (costly, algorithm bias, database building, Arabization), expertise, and resistance to change.

2.3 Ethical Considerations in Journalism

Jamil (2021) postulated that truth and accuracy are the primary aspects of journalism ethics. The authors argued that even though journalism cannot always ascertain "truth," it should get the facts right as journalism's predominant principle. Along these lines, the journalists should strive for accuracy and verify facts presented to the public. Additionally, Rogers (2018) pointed out that independence is an essential ethical aspect that needs to be followed by journalists. Correspondingly, they must not act formally or informally or by following specific cultural, business, or political interests.

Similarly, Kothari and Cruikshank (2021) believed that fairness and impartiality are central to journalism, as the majority of the stories have at least two sides. Every piece of the news stories ought to be balanced and at the same time presented with context. Another dimension of ethics that needs to be taken into consideration by journalists is accountability. This signifies responsibility and professionalism with respect to journalism.

The preceding segments discussed the ethical challenges of traditional journalism. Nevertheless, the new media grounded in technology calls for new criteria in respect of journalists' ethics.

The inclusion of artificial intelligence in the newsroom of Associated Press back in 2013 has created ethical concerns. Along these lines, several questions have been raised, such as whether the audience needs to know that the article's author is an automated machine? From the legal dimension, who is the actual author of the news article? How should a robot be trained to follow journalism ethics? Finnset (2020) pointed out that pre-algorithmic journalism also implies threats to good journalistic practices, such as searching for better metrics and more significant popularity to the detriment of product quality improvement.

Its use, therefore, opens debates that go beyond the substitution of the individual for the machine to issues of ethics, content veracity, and the creation of new spheres of control over information that is published at a time, when professional journalistic ethics must be redefined to fit the current media ecosystem. Several authors focused on the ethical challenges posed by this formation to make news. Linden (2017) argues that one of the most controversial, but still unexplored, is authorship, while Guzman (2021) pays attention to organizational fairness. To this end, one way to approach ethics related to automated journalism is to think of it as the intersection of journalistic ethics, the ethics of developing intelligent machines, and computer ethics. The research carried out by Germain and White (2021) shed light on the ethical issues pertaining to designing computer systems. Some of

the predominant ethical issues include respect for globally recognized human rights, the legal status of intelligent machines, universal internet access, and avoiding discrimination. In addition, minimization of exploitation of information and accountability of producers and designers are other ethical issues surrounding automated journalism.

Schiemer et al. (2019), in their research, highlighted the ethical issues associated with the general issue of accidents or unintentional as well as detrimental behaviors of machine learning systems in the newsroom. According to the authors, the social impact of artificial intelligence is widespread besides privacy concerns. Moreover, Porter (2021) noted that mass media has a significant impact on society, so the ethics of automated journalism has become the center of debate for media scholars. The researcher discussed the ethics associated with artificial intelligence and analyzed social, legal, and moral issues such as free speech, property, and privacy. They identified various technical and ethical concerns in relation to automated journalism such as algorithmic authority, the extent of data search and origin, data usage and abuse, and algorithmic transparency.

The study conducted by Kiuj (2017) analyzed the ethics of artificial intelligence in journalism in two predominant dimensions: technical, and the impact of the integration of the A.I. on established journalistic practices and newsroom organization. The study's outcomes pointed out that since technology supposes automated publishing without preediting, there are threats that factual error might effortlessly infuse into the journalistic materials. Various researchers, including Smuha (2019), have indicated concern about the high chances of automated journalism making misleading statements. The authors demonstrated possible stages of ethical conflict in newsrooms directed by artificial intelligence. These include the input, throughput, and output stages of content generation.

Jamil (2021) argued that incorrect interpretation of the underlying information by the algorithms within the software could have a real-world impact. This is because the fundamental assumptions on which the algorithms based their evaluation is not often apparent to the designers. Therefore, when trusting algorithms, it is crucial to be mindful that humans programmed it. Accordingly, as humans are prone to error, so too is the machine algorithm.

Germain and White (2021) opined that the use of artificial intelligence in journalism poses a series of ethical dilemmas related to the substantial values of the profession. Fairness is one of them. Does the application of intelligent technology suggest the conquest of the long-awaited complete objectivity? The researchers have a clear answer. "Humans design artificial intelligence, and humans make mistakes." An A.I. system is only as good as the data it is fed," they point out from the Associated Press. "It is just as important to verify the reliability of a source as that of an A.I. system." The precision of automated journalism will be possible if the underlying algorithm is free of ideological bias and the programmers do not distort the data. This is what Smuha (2019) maintains in his study in which he points to the ethical principle of accuracy as a guide when searching for data. "Seeking the most rigorous data and checking different databases is a great way to avoid embarrassing mistakes or spreading fake news," he reiterates. The solution to the ethical 'entanglements' that A.I. brings with it could go through creating codes of conduct that guide programmers and journalists in preserving the traditional values of journalism. No document of this type has yet been developed, but debates and initiatives are being generated to discover ways to embed journalism ethics into machines.

Besides fundamental ethical concerns pertaining to the artificial intelligence-driven journalism-namely quality of the information and the interpretation of the algorithms, there

is another significant moral aspect that prevails at the time of the implementation of artificial intelligence in the newsrooms that is increasing unemployment in journalism. According to Jamil (2021), incorporating artificial intelligence in the newsrooms leads to automation of the journalist's tasks, which places additional pressure on the journalists to learn to program and acquire digital skills. The authors express concerns regarding the future development of automated journalism as the implementation of labor-saving technology such as artificial intelligence has the potential to rearrange the production of news so that the duty of providing high-quality material is pushed away from journalists, resulting in undermining labor unions.

The study of Yu and Huang (2021) examined human journalists' perception of AI in Chinese media outlets. This study conducted in-depth interviews with the media persons to understand the perspective of AI in the newsroom. The findings were consistent with the literature that AI may help journalists spot noteworthy data and stories with greater accuracy, intelligently, and quickly. However, respondents revealed that although AI is more efficient in data identification, collection, arrangement, or extracting information from the given data, it lacks human-like execution techniques and production values.

2.4 Research Gap

Journalism does not escape the irruption of artificial intelligence, and the new panorama is generating opportunities and concerns in equal parts. In 2013, the US news agency

Associated Press began using the Automated Insights tool to produce stories from data. First, it was sports news. Then the corporate reports. The Washington Post uses the Heliograph system for political and sports news. Quake Bot reports immediately after an earthquake occurs in the Los Angeles Times. The list of media outlets employing A.I. daily

continues with CNN, Forbes, and The Wall Street Journal, among many others. As the Associated Press points out in its Guide to Newsrooms in the Age of Intelligent Machines, many media outlets are succeeding in training journalists to analyze data, identify patterns, convert data to text, or gain more incredible speed, accuracy, and diversity of coverage. AlJazeera is known for its independent, unbiased, and accurate reporting, and it also implemented A.I. to tackle fake news. However, utilizing A.I. in the newsroom might raise severe ethical concerns such as should we reveal or conceal it from readers who are the author? Legal ownership of content, who will be responsible for correctness as output depends on input provided by humans, will robots obey general and journalism ethics, and so on. Algorithm ethics remain a crucial topic to research because machine reasoning differs from human reasoning, and the consequence is hard to anticipate. It is also important to acknowledge the human costs in terms of labour. There are fewer studies done on the perceptions of journalists and news professionals on how they see the impact of AI on their industry.

CHAPTER 3: METHODOLOGY

The lack of in-depth studies that project professionals' perspectives on A.I. and journalism in Aljazeera have stimulated this exploratory research that describes the existing practices of A.I. in news production, identifies ethical challenges and their impact on journalism, and reveals the limitations of the technology in the Network.

In-depth personal interviews are utilized to employ qualitative methodologies. Additionally, a sample of journalists working at Al-Jazeera media channel was chosen for a questionnaire. This research was approved by the institutional review board, and data were obtained in a legal way (see Appendix 3). The interview subjects were chosen carefully to get a complete perspective of the research topic. Firstly, the perspectives of decision-makers on A.I were considered in order to understand how A.I could overcome

fake-news issues or help Al-Jazeera channel in the general operational context. Second, a technical perspective is taken from an expert in A.I. models. Third, the perspective of a journalist and an academic at the same time is elicited to get an overview on how technology affects journalists. Finally, the study obtained the perspective of an Aljazeera producer who works in-depth with A.I. in an Arabic newsroom.

3.1 Interviewees

Technology has progressed rapidly in recent years, and technological change has also helped journalism evolve. In the past, artificial intelligence A.I. was used for simple tasks like identifying objects in satellite images, but now it is used to write entire articles. In the news, artificial intelligence has been met with praise and skepticism. The documentary discusses thoughts from experts on how these changes will impact the news industry.
The interviewees offer different perspectives that are valuable in understanding the whole issue. The interviewees in the film were chosen carefully based on their knowledge of A.I. and their relationship with the Aljazeera media network.

The first participant is the Executive Director of Al-Jazeera Media Network's Digital Division, where he oversees digital media strategy and innovation and has extensive expertise in artificial intelligence.

The second participant is the head of Newsplex at the University of South Carolina. The professor addresses new media issues worldwide. Additionally, the interviewee teaches media ethics classes at the University of South Carolina, which made him an essential voice in the documentary addressing artificial intelligence's ethical issues in the news industry.

The third participant is the founder of SANAD, the digital newsgathering, and verification unit in the Al-Jazeera network. SANAD, which uses A.I. in article gatherings and in factchecking, is the third source for Al Jazeera Arabic, English, and digital newsrooms, and it is supportive of Al Jazeera journalists trying to reveal different angles of any given story. The interviewee discusses the uses of A.I. in fact-checking at Aljazeera networks, and the limitation of the technology, particularly those related to the Arabic Language.

The fourth participant is a co-founder of Create Labs, a community ambassador for OpenA.I., a GPT3 developer, and the associate director of the NYC Media Lab. His point of view is crucial in investigating how GPT3 works and in better understanding the technology's limitations. This interview provides the other voice of A.I from the perspective of someone who works in the A.I production industry.

3.2 Survey

The Survey aims to understand how Aljazeera employees' viewpoints on artificial intelligence affect media jobs and journalism ethics. The Survey collected a systematic sample of 33 staff working in the Aljazeera media network: producers, editors, T.V. presenters, and administrators. Google survey was used to create the Survey. Questions were based on the primary interviews conducted with the participants in the film (Appendix 2).

3.3 Choice of Interview Locations

Each interview location was chosen carefully, considering the topic under investigation and the participants' stances. From a visual point of view, the presence of televisions and computers in the film frame was present in Aljazeera staff interviews.

The first interviewee was filmed in his office in Aljazeera media network. It is where most of the major decisions and meetings happen. Blue color grading was added to his interview to represent technology. The interviewee was placed on the left side of the medium shot, as his opinion represents Aljazeera's perspective of using A.I. On the other hand, the fourth participant was placed on the right side. The filming was done in two locations. The interview took place in Bell works, N.J. The building is the reimagined version of the former Bell Labs building in New Jersey, representing a technology ecosystem (BellWorks, n.d.). Other B-rolls were filmed in the interviewee's house.

The third interview was filmed in the newsroom. The newsroom is the main topic of the film, and it is the location where the SANAD team works on fact verification. Other B rolls were filmed at his desk, where the participant explains the A.I. tools used in Aljazeera for data verification. Similarly, the second interview location was the newsroom. The university professor represents the Western view of journalists and has vast knowledge in ethics, standing between the perspectives of Al Jazeera journalists and the Western A.I. industry. The window and sun reflection in the interview is a symbol of intellectual thought and hope for journalism ethics in the era of robot journalists.

3.4 Equipment

The Interviews were filmed with two Sony 7 alpha cameras. The lens used was a 70/200 for medium shots and 24/70 for long shots. Additional equipment included the prime lens, tripods, a neck mic, and a zoom device to record sound. The lighting used was Dedo lights for the key and filled light to create a lighting effect on the floor. The interviews were shot in a 4k setting to satisfy the high visual quality of the documentary.

3.5 Video Editing

The main program used for video editing is Final cut pro-X. The footage was imported into the program and categorized via the date created. I then synchronized each interview's medium shot, long shot, and sound file. First interviews were edited separately and then combined on the main timeline. Later, the B-rolls, and general shots were added in correspondence with the content. Finally, audio mixing was performed by adding the music and sound effects. Davinci resolve was also used for color correction and color grading. Among the interviews, one was conducted in Arabic, so there was a need to translate and add subtitles to the interview (Appendix 4).

CHAPTER 4: DISCUSSION

The interviewees all agreed that it is crucial to have a human being present in news production and that the final publication decision should not be given to the machine. Nevertheless, some experts worry about whether language processing models create biased or false stories because they have been developed with partial data. On the other hand, others believe that A.I. can help positively shape journalism by helping journalists build more sophisticated stories with more context and background information than ever before. These A.I. applications reduce the workload on journalists by automating tasks that would otherwise have to be completed manually.

Survey results showed that the majority (45.5%) of the participants were aged between 25 and 35 years, 40% were 36-45 years old, and five were 46 and older. 57.6% had heard of A.I. programs capable of generating news articles, yet 42.4% did not know that such programs existed. Employees are well informed about A.I. practices in different fields, yet a significant number had not heard of models generating news articles, even though GPT was first introduced nearly four years ago. On the question about whether A.I. can replace journalists in the newsroom in the future, 20 people answered no, 11 yes, one thought that everything is possible, and one replied that A.I. could probably complement the work done by journalists but not replace them entirely. Figure 4.1 shows that 33% of the participants anticipate that administrative jobs will most likely be replaced by A.I., while 30% considered this would be the case for T.V. presenters. This could be related to the new A.I. anchors that have been used by the Chinese news agency since 2018 (Handley, 2018). In comparison, 15.2 % voted for other professions, while the remaining 21% of responses varied between editor, producer, and reporter. These professions were the least likely to be replaced by A.I., from the employees' perspective, these are the main professions existing

in newsrooms (9.1%, 6.1%, 6.1%). This implies that it is still early to think that A.I. could replace humans in the newsroom.

Figure 4.1

Media Profession to be replaced by A.I.

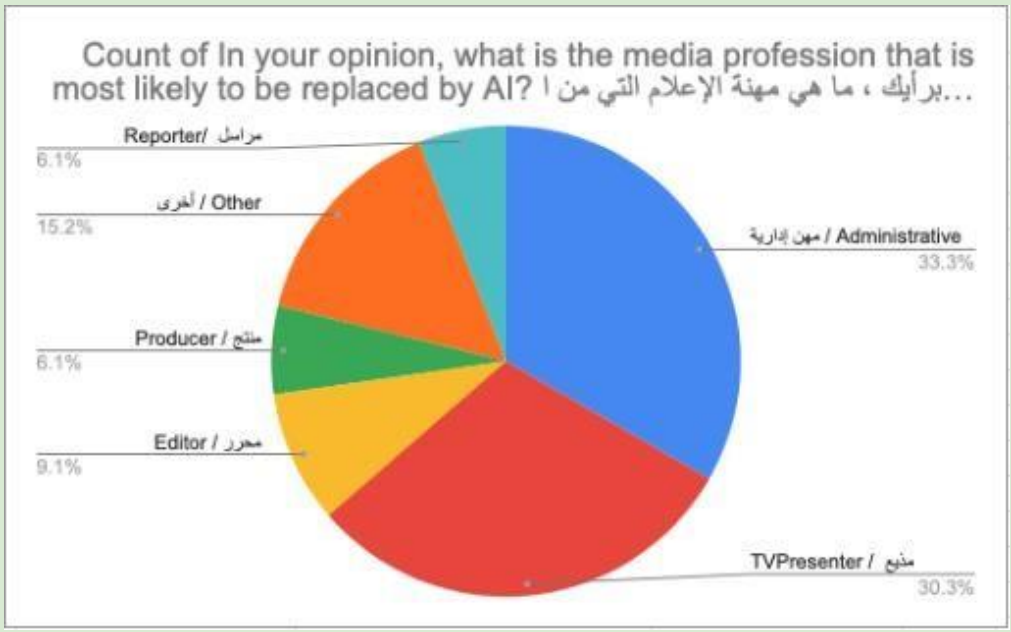
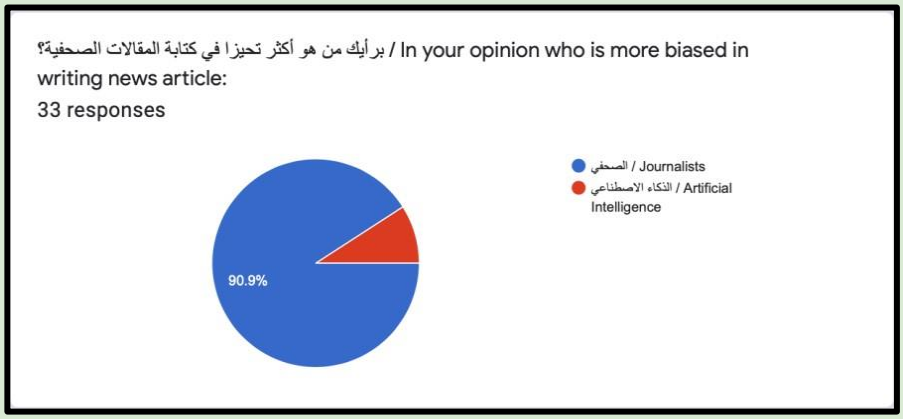


Figure 4.2 shows that 91% of Aljazeera staff think that the journalist is more biased than Artificial intelligence, while only 9% think the opposite. This result is emphasized in previous studies. A study by Wu (2020) showed that automated news articles are significantly more objective than news stories written by journalists, which supports studies that have also supported the objectivity of algorithms and algorithms' intrinsic objectivity, and the limitations of journalists' subjective in evaluating news stories (Wu, 2020). Algorithm-generated text is considered to be more informative, accurate, and objective.

(Clerwall, 2014). Some participants in the interviews agreed with the literature on the objectivity of A.I. Covington, for instance, mentioned that journalists could be unethical, and that the rules are not precise enough. On the other hand, Dr. Bishr thinks that even though A.I. is a compelling platform, it is highly biased against certain minorities because the data fed into the system were biased.

Figure 4.2

Who is more biased in writing news articles

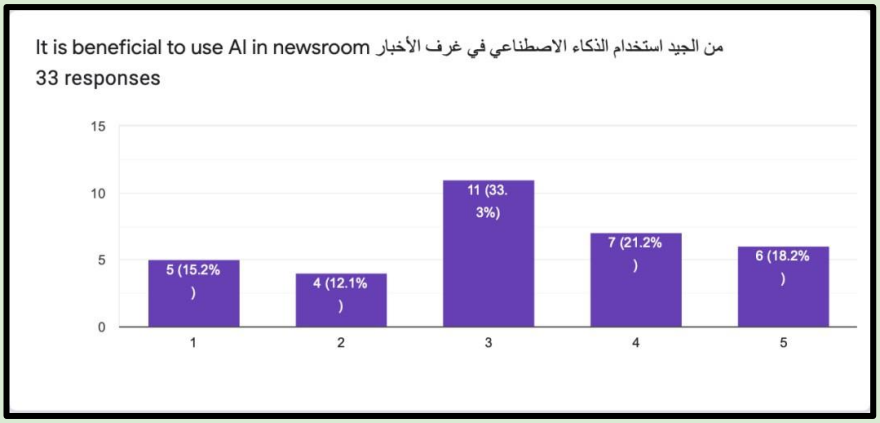


Machine learning is at the intersection of classical mathematics and statistics, as well as computer science and software engineering, and is now expanding rapidly into journalism. (Linden, 2017). Nevertheless, Al Jazeera employees do not completely agree on the benefit of A.I. in the newsroom. As shown in Figure 4.3, 11 people were neutral about the benefit of A.I. in the newsroom, seven people agreed, six people strongly agreed, four disagreed, and five strongly disagreed. Most crucially, when A.I. technologies are left to handle routine and repetitive tasks, human journalists may devote more time and attention to more

sophisticated and advanced activities.

Figure 4.3

A.I. in newsrooms



There was almost an even split when it came to the question of trusting an article generated by A.I., with 17 agreeing that it could be trusted while 16 disagreed. On whether A.I. will increase the rate of unemployed journalists, 39% strongly agreed, 27 agreed, 9% were neutral, 15% disagreed, and the rest strongly disagreed. Regarding whether A.I. will commit to journalism ethics, ten people were neutral, seven agreed, two strongly agreed, ten disagreed, and four strongly disagreed. There is trust among Aljazeera employees toward A.I., yet the unemployment of journalists is a concern among them (Appendix 2).

Employees in Aljazeera are generally optimistic about using A.I., but not in the newsroom. There are concerns that A.I. was produced in the West, and data fed into the system were collected from Western media reports, implying that it is biased against non-Western societies. Journalism ethics is complicated, and it is still unclear how an A.I. could make news decisions given the particularities of news stories; a decision that might fit one story could be wrong for another. Nevertheless, with the extensive capabilities of A.I., it is crucial to have a human being in the process to monitor and decide what to publish.

CHAPTER 5: CONCLUSION

Decision-makers are utilizing A.I. to figure out unique solutions to daily life issues. The importance of A.I has increased in every field of life, including the news industry. Statistics revealed that approximately 60% of news reported at different social, electronic, and print media platforms, including news channels, are fake, and that A.I. might help solve this issue. The situation in the Middle East is even worse as the governments control the media and the information is used to shape their citizens' global and domestic political perceptions. Because of this, the likelihood of fake news spread is about seventy times higher than factual news.

Therefore, this study aimed to examine the perspective of A.I. in the news industry, and Aljazeera news channel was taken as a case study to explore the implications of A.I in the newsroom. An exploratory and qualitative research approach was used to achieve the study's objective. The data were collected through a structured five-point Likert scale questionnaire from 33 respondents working at Aljazeera news channel. Descriptive statistics reported that 91% of respondents believe that A.I is less biased than humans. The results further revealed that the majority (62.5%) of respondents disagreed with A.I might replace humans in the newsroom for writing articles.

Similarly, 66% of respondents believe A.I will increase the unemployment rate in the news industry as it will replace humans. Analysis showed mixed results in respect of those who it might replace: one-third (33%) reported that A.I will replace administrative jobs, onethird believe that it will replace news reporters, while the remainder think it might replace producers and editors in the news industry. The results also reported that 39% of respondents believe that A.I will be beneficial if implemented in the news industry, whereas

33% believe it would not make a significant difference, with the rest displaying neutrality on the issue. Results also showed poor acceptability of articles authored by A.I as 48% of respondents stated. Finally, a large number of respondents (42%) showed disagreement that A.I will comply with journalism ethics, with only 21% agreeing.

This study has covered theoretical implications and has used primary sources for data collection. From a practical perspective, this study concluded that A.I might be used to writing articles with minimum bias, which might help the news industry overcome fake news issues. From a theoretical perspective, this study will contribute to the A.I literature in the context of the news industry, especially Aljazeera.

5.1 Limitations

The representation of data in this study was limited to only one media outlet in the Middle East, with 37 participants. Throughout the filming of the documentary, I have encountered many challenges. First, most participants were hard to reach. The schedule of the executive of the digital division at Al Jazeera was very busy, and we had to reschedule the interview many times. I had only thirty minutes to conduct the entire interview. This is a short time to position a decent setup, test the lighting and the sound, and sync the two cameras' settings. Nevertheless, I managed to arrange the setup in eight minutes, film the B rolls in five minutes, and conduct the interview itself in seventeen minutes. The available short timing created a lighting issue processed in the post-production.

Other interviewees were in the United States. At first, it was challenging to communicate with participants in the United States due to the time difference; Qatar is almost 8 hours ahead of N.Y., USA. I could not travel to the USA because issuing the visa was timeconsuming and the time frame for delivery was indefinite. After many attempts, I connected with a production company to film the interview. In the case of finding a

production company in another country, it is risky to find a good quality of shooting that matches the visualization in mind.

Furthermore, I intended to interview someone from the contrast department in the Aljazeera network. A.J. Contrast is a media innovation studio and immersive storytelling platform, and they use immersive technology such as 360 and V.R. to present marginalized communities. Their point of view could have added a unique angle to the documentary because there is a fundamental ethical challenge when using virtual reality to tell the story of marginalized groups and how A.I. is employed in the narrative press. I contacted a senior producer in AJ Contrast; however, she was unavailable before March 11, so the interview was canceled.

5.2 Recommendations

This study concluded that although A.I may help Al-Jazeera media network to disseminate more accurate and authentic news, it may also pose serious ethical challenges. For instance, A.I may increase job insecurity among journalists, make it difficult to identify who authored the article, and know what input was used to write news, which is obviously impossible without some form of human input.

The technology is being created in the West and Asia, where foreign cultures and languages are integrated into the dataset. Arabic A.I. projects and initiatives are numerous in the last couple of years, but are still lagging behind English. There should be Arabic A.I in which Arabic perspectives should be included in the datasets to prevent biased outcomes. Moreover, the use of A.I. will not lead to journalists' unemployment as long as journalists adapt to the new partnership. The use of A.I. in the media industry will create new job opportunities, and it is the responsibility of journalists to learn new skills. Finally, humans

should not leave the final publishing decision to A.I. since A.I. cannot recognize journalism ethics. Whether journalists and new agencies like it or not, A.I. is here to stay. This being the case, it is time to fully embrace this revolutionary technology and to make it work for us rather than against us.

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APPENDICES

Appendix 1: Survey Questions

Artificial Intelligence and Journalism

أنت مدعو للمشاركة في دراسة بحثية حول الذكاء الاصطناعي وصناعة الأخبار: دراسة حالة لشبكة الجزيرة. يهدف هذا الاستبيان إلى استكشاف منظور صحفيي الجزيرة تجاه استخدام الذكاء الاصطناعي في صناعة الأخبار.
نعتبر موافقتك على ملء هذا الاستبيان بمثابة موافقة ضمنية على المشاركة في عينة البحث.
إن مشاركتك في هذه الدراسة طوعية. نتعهد بالتعامل مع إجاباتك بسرية تامة، وضمن أطر النزاهة العلمية والأخلاقية.
إذا كان لديك أي استفسار يمكنك الاتصال على الرقم 00974 33304540
جزيل الشكر.

الباحثة الأكاديمية/ جنى المسلماني

You are invited to participate in the research study: Perceptions of AI on the news industry: A study of Al Jazeera. This survey aims to explore Aljazeera journalists' perspectives on using AI in the news industry.
We consider your acceptance of filling out this questionnaire as implicit consent to participate in the research sample.
Note that Your participation in this study is voluntary. We pledge to deal with your answers in a confidential manner that reflects the rules of integrity and objectivity.
If you have any questions, do not hesitate to contact me on 00974 33304540.
Many Thanks.

Jana Elmesselmani

How old are you? كم عمرك/كِ *

- ○ 25-35
- ○ 36-45
- ○ 46+

Gender/ الجنس *

- ○ أنثى / Female
- ○ ذكر / Male

What is your profession in Aljazeera? ما هي مهنتك في شبكة الجزيرة؟ *

- Editor / محرر
- Producer / منتج
- Anchor / مذيع
- Reporter / مراسل
- Other...

Have you heard of AI programs capable of generating news articles? هل سمعت عن برامج ذكاء اصطناعي قادرة على كتابة مقالات إخبارية؟ *

- Yes/ نعم
- No / لا
- Other...

In your opinion, can AI in the future replace journalist in the news room ? برأيك هل يمكن للذكاء الاصطناعي في المستقبل أن يحل محل الصحفي في غرفة الأخبار؟ *

- Yes/ نعم
- No / لا
- Other...

* In your opinion, what is the media profession that is most likely to be replaced by AI? برأيك ، ما هي مهنة الإعلام التي من المرجح أن يحل محلها الذكاء الاصطناعي؟

- Reporter/ مراسل
- Editor / محرر
- Producer / منتج
- TVPresenter / مذيع
- Administrative / مهن إدارية
- Other / أخرى

* In your opinion who is more biased in writing news / article: برأيك من هو أكثر تحيزا في كتابة المقالات الصحفية؟

- Journalists / الصحفي
- Artificial Intelligence / الذكاء الاصطناعي

* It is beneficial to use AI in newsroom من الجيد استخدام الذكاء الاصطناعي في غرف الأخبار

	1	2	3	4	5	
Strongly disagree	○	○	○	○	○	Strongly agree

* I am with using AI in newsroom أؤيد استخدام الذكاء الاصطناعي في غرفة الأخبار

	0	1	2	3	4	5	
strongly disagree	○	○	○	○	○	○	Strongly agree

I trust reading an article written by AI أثق في قراءة مقال كتب من خلال الذكاء الاصطناعي *

	0	1	2	3	4	5	
strongly disagree	○	○	○	○	○	○	Strongly agree

AI will increase the rate of unemployed journalist سيزيد الذكاء الاصطناعي من نسبة الصحفيين العاطلين عن العمل *

	0	1	2	3	4	5	
strongly disagree	○	○	○	○	○	○	Strongly agree

Using AI in the newsroom will allow journalists to focus on more complicated tasks سيتيح استخدام الذكاء الاصطناعي في غرفة الأخبار لإتاحة الوقت للصحفي للتركيز على مهام أكثر تعقيدًا *

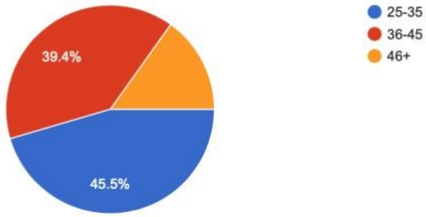
	0	1	2	3	4	5	
strongly disagree	○	○	○	○	○	○	Strongly agree

AI will commits to journalism ethics يلتزم الذكاء الاصطناعي بأخلاقيات مهنة الصحافة *

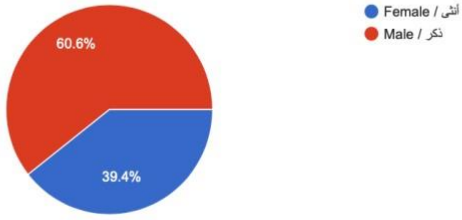
	0	1	2	3	4	5	
strongly disagree	○	○	○	○	○	○	Strongly agree

Appendix 2: Survey Results

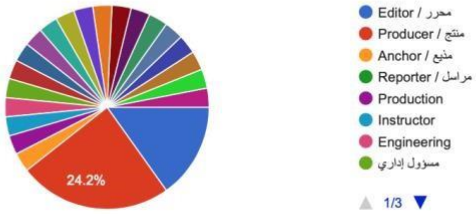
How old are you? كم عمرك/ك
33 responses



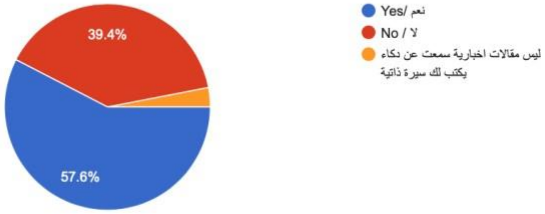
Gender/ الجنس
33 responses



What is your profession in Aljazeera? ما هي مهنتك في شبكة الجزيرة؟
33 responses

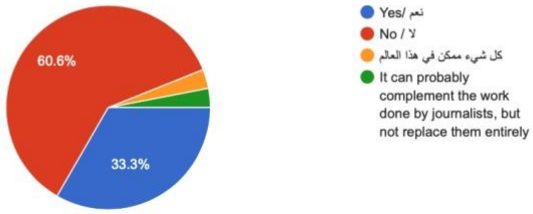


Have you heard of AI programs capable of generating news articles? هل سمعت عن برامج ذكاء اصطناعي قادرة على كتابة مقالات إخبارية؟
33 responses



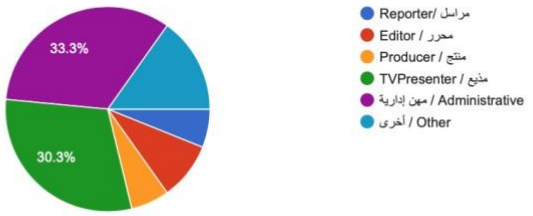
In your opinion, can AI in the future replace journalist in the news room ? برأيك هل يمكن للذكاء الاصطناعي في المستقبل أن يحل محل الصحفي في غرفة الأخبار؟

33 responses



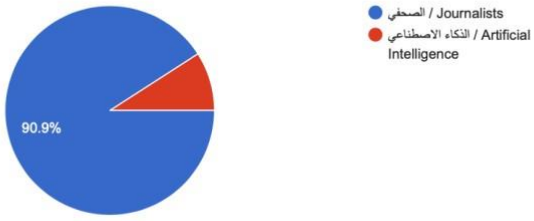
In your opinion, what is the media profession that is most likely to be replaced by AI? برأيك ، ما هي مهنة الإعلام التي من المرجح أن يحل محلها الذكاء الاصطناعي؟

33 responses



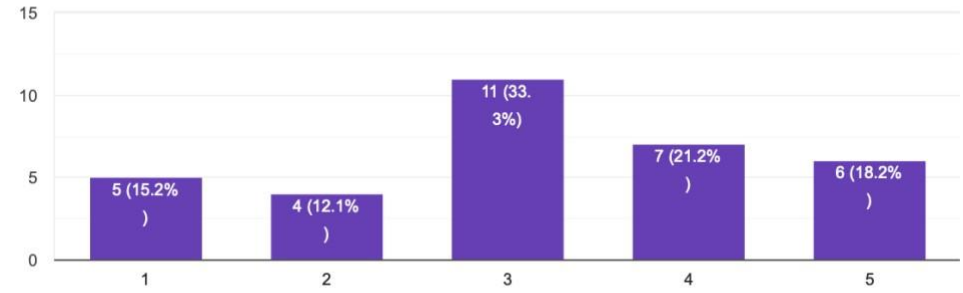
برأيك من هو أكثر تحيزا في كتابة المقالات الصحفية؟ / In your opinion who is more biased in writing news article:

33 responses



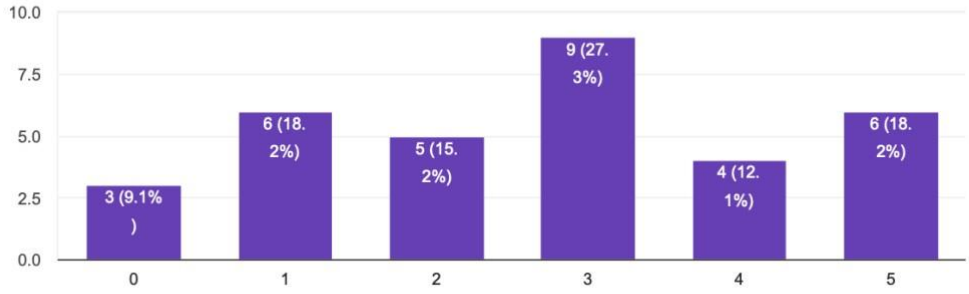
It is beneficial to use AI in newsroom من الجيد استخدام الذكاء الاصطناعي في غرف الأخبار

33 responses



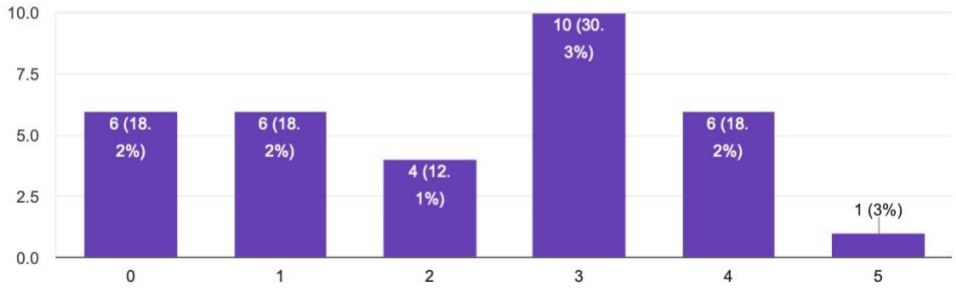
I am with using AI in newsroom أؤيد استخدام الذكاء الاصطناعي في غرفة الأخبار

33 responses



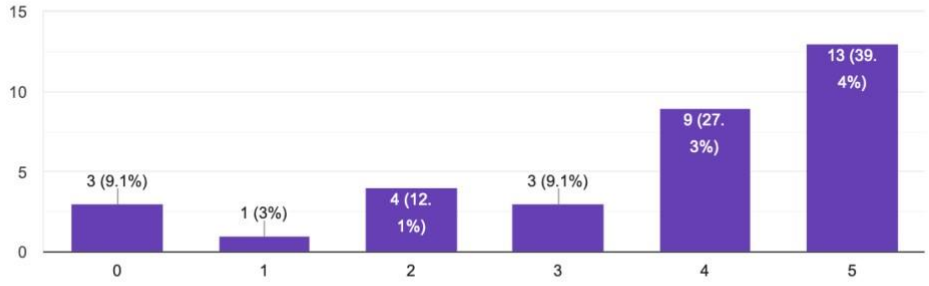
I trust reading an article written by AI أثق في قراءة مقال كتب من خلال الذكاء الاصطناعي

33 responses



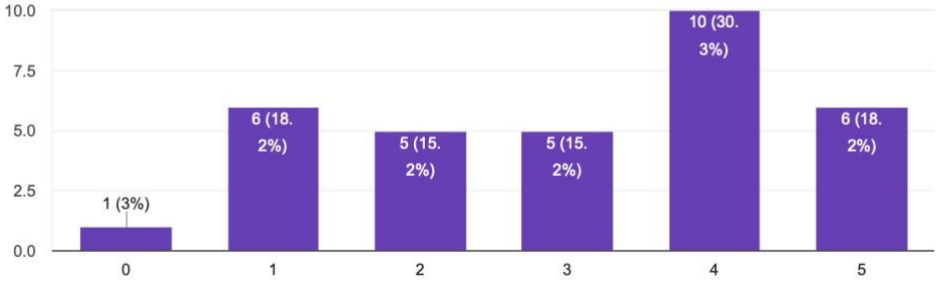
AI will increase the rate of unemployed journalist سيزيد الذكاء الاصطناعي من نسبة الصحفيين العاطلين عن العمل

33 responses



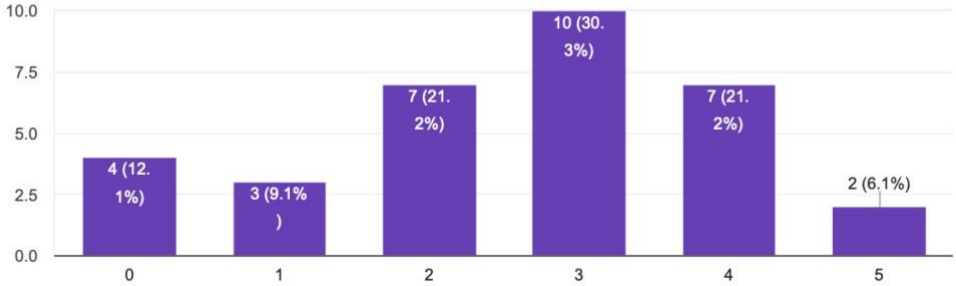
Using AI in the newsroom will allow journalists to focus on more complicated tasks سيتيح استخدام الذكاء الاصطناعي في غرفة الأخبار لإتاحة الوقت للصحفي للتركيز على مهام أكثر تعقيدًا

33 responses



AI will commits to journalism ethics يلتزم الذكاء الاصطناعي بأخلاقيات مهنة الصحافة

33 responses



Appendix 3: IRB Approval

Date: 4-2-2022

IRB #: QBRI-IRB-2023-16
Title: Perspectives of Journalists on The Impact of A.I. on the News Industry: Al Jazeera As a Case Study
Creation Date: 2-20-2022
End Date:
Status: Approved
Principal Investigator: Jana ElMesselimani
Review Board: QBRI-IRB
Sponsor:

Study History

Submission Type Initial	**Review Type** Expedited	**Decision** Approved

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Member Jana ElMesselimani	**Role** Primary Contact	**Contact** jael34005@hbku.edu.qa