"Analysis of the mechanisms of using artificial intelligence to manipulate social media content and mislead public opinion in the Middle East"

Wafaa Salah Abdel Rahman

Assistant Professor of Public Relations and Advertising

Abstract

The Arab world is witnessing fundamental changes in the use of digital platforms, as these media have become key tools for influencing public opinion. Especially since the countries of the Arab region have become the target of rumors and misinformation, and the dissemination of false information and false news about the events they went through due to Israel's genocidal war on Gaza, the expansion of aggression on Arab lands and the Syrian events after the fall of Bashar al-Assad, the threat to navigation in the Red Sea, and other serious events that the region has not experienced before.

With the increase in allegations related to the Egyptian affair circulating through social networking sites addressed by the "Google Fact Check" tool during 2024 in terms of fields and classifications of Egyptian affairs, which reached nearly 170 claims related to the political, economic, social, military, sports, health and other fields, and the political field topped the rest of the fields with about 68 claims 170, and in second place the social field with 32 claims, the third place the military field with 14 claims, the economic field ranked Fourth, which amounted to 13 claims, the sports field ranked fifth, with the number of allegations reaching 11.

This research aims to analyze and comprehensively review the most common AI tools used to manipulate digital content on social media to mislead public opinion in the Middle East, whether it is text, video or image, highlighting how actors exploit these tools to guide public debate, foster social divisions, and fuel political conflicts. A descriptive and analytical

approach was adopted to understand the phenomenon, relying on the analysis of the content of social media posts. Which concerns the issues of the Middle East during the year 2024, which is considered the most conflicting period in the region. The results showed that digital manipulation strategies are used intensively to achieve political and social goals, directly affecting political decisions and societal trust. Based on these findings, the research recommends developing strict legislation, promoting digital awareness, and investing in AI technologies to combat fake news.

Keywords: AI tools, digital manipulation, fake news, public opinion, social media, Middle East.

Introduction:

Our Arab world has undergone profound transformations at all levels, and social media has become an integral part of our daily lives. With this widespread spread, new challenges have emerged that threaten the fabric of our societies. In the absence of adequate censorship, fake news and misleading campaigns, these platforms have become an arena for hidden conflicts aimed at shaping public opinion and directing it towards specific goals where political and social challenges are intertwined with technological developments, especially artificial intelligence tools. These sites played a dual role; on the one hand, they provided a space for expression. Community engagement, on the other hand, has become an arena for manipulating information and spreading misleading news. This is aided by the nature of the digital environment that facilitates the rapid spread of content without sufficient verification, allowing actors to exploit these platforms to achieve their goals. (Tufekci, Z. 2017)

Fears have been strengthened for users around the world about the possibility of distinguishing between trustworthy and untrustworthy content, especially on social networking sites, which have become arenas for misinformation in light of wars and conflicts, and according to a study by the Oslo Peace Research Institute, there are 59 armed conflicts around the world, led by the wars in Gaza and Ukraine, and Africa is at the forefront of those conflicts, then Asia and the Middle East, then Europe and the Americas. (African Readings 2024)

The Reuters Digital News Report 2024 found concern about the credibility of online news up 3% from last year, with nearly six in ten (59%) expressing concern about not distinguishing between real and fake news. Africa recorded the highest levels of anxiety (75%), and at the country level, the concern is most pronounced in South Africa (81%) and the United States (72%) (Ansari, 2024). Projections suggest that this worrying trend will continue in the coming years – with some researchers predicting that up to 90% of online content could be created industrially by 2026 (Bakel, 2023).

There are many strategies used to manipulate public opinion in the Middle East, from creating fake accounts and spreading rumors, to using artificial intelligence to generate fake content through many techniques, the most important of which is the deepfake technique that has been used to manipulate public opinion polls, and spread false news that leads to mistrust and confusion among the public (Bueermann, G., Perucica, N., 2023)

This research addresses the phenomenon of manipulation of public opinion as one of the most prominent challenges facing societies in the region. By analyzing digital manipulation strategies through AI tools, the research aimed to shed light on the mechanisms used to guide public debate and attract audiences. The research is an attempt to understand the intertwined dynamics between technology, media and the public, in a regional context characterized by rapid changes and increasing tensions.

Literature review

The manipulation of public opinion in the Middle East through digital platforms is an important and multidimensional issue. Several studies have examined the use of social media to influence public opinion, focusing on how platforms such as Facebook, X, Instagram, and YouTube are exploited by governments, political parties, and various groups to direct public discourse, manipulate information, or reinforce certain positions by creating deceptive content.

If we look at the relationship of social media to political participation, according to a study (Boulianne, S. 2015), we find that social media has a major role in influencing political participation in the Middle East. A study (Howard, P. N., & Hussain, M. M. 2013) illustrated the significant impact of digital media on the Arab uprisings, and the use of social media by governments and political groups in the Middle East as a key tool for organizing, mobilizing, and successfully guiding public opinion.

The results of a study (Vosoughi, S., Roy, D., & Aral, S. 2018) confirmed that fake news spreads faster and more deeply in social networks. It also showed that links that spread fake news tend to be more emotional and controversial. A study by (Allcott, H., Gentzkow, M., & Nyhan, B. 2016) found that fake news spread faster and more widely on social media than real news during the 2016 U.S. election. It also showed that links spreading fake news were shared more frequently on Twitter and Facebook.

The results of the studies pointed to the personal targeting and personalization that characterizes social networking sites such as Facebook and X, as they provide tools for accurate targeting based on users' personal data, allowing political or economic institutions to effectively direct specific messages, which contributes to shaping the public's opinion on certain issues. Such as the study of (Sabbagh, K., & Harb, Z. 2020) and the study of (Mourtada, R., & Salem, F. 2017) in which the results indicated the impact of social media on the cultural and political identities of young people in the Middle East.

In the current era, cyber warfare by actors has increased, using digital attacks to create political chaos in the Middle East to weaken their political opponents or even to create internal divisions. Studies have shown that digital platforms have become key tools in influencing election outcomes in many Middle Eastern countries. This includes spreading offensive or fake messages against certain candidates, or promoting extremist messages with the aim of attracting voters such as the study of (Gorman, S., & Zengler, T. 2020).

Some studies have also examined political strategies and propaganda manipulation and how some governments have used digital propaganda strategies to guide public opinion through techniques such as influential "memes" and "hashtags", which contribute to fostering a sense of political belonging or weakening dissent, such as Meyer, A. (2020) and Hassan, I. (2018). They discussed the role of cyberwarfare in influencing domestic and foreign policies in

the Middle East and emphasized the impact of cyberattacks on shaping public opinion in the Middle East, especially in light of political conflicts.

Studies focusing on the psychological and social aspect have examined how digital platforms affect the psychology of individuals and groups in the Middle East, and how these effects are shaped by technologies such as targeted media and emotional guidance. Several studies have examined how the Internet is used to guide religious and cultural discourse in the Middle East, with the aim of promoting religious, national or ethnic identities, sometimes to serve specific political interests. According to the study of (Al-Rawi, A. 2020) concerns are growing about how social media contributes to social and political divisions in the region, and how it was used as a tool to shape public opinion during the events of the Arab Spring. The results of the research showed that digital platforms may contribute to deepening gaps between different groups, leading to increased tensions and conflicts.

As for the role of artificial intelligence in disinformation campaigns, many studies have addressed the role of media disinformation and fake news in shaping public opinion, such as publishing distorted stories or fake videos with the aim of distorting facts and stirring up public feelings. According to a study (Al-Debaisi, 2025) manipulating the truth and falsifying awareness to mislead public opinion is a phenomenon that is not new, but rather repeated throughout history, and the results of the study confirmed that the digital

revolution and the rapid progress in artificial intelligence techniques helped to spread it at the present time. Generative artificial intelligence has become able to produce deceptive information closer to reality easily, and spread it at high speed on social networking sites for targeted users, and the capabilities of artificial intelligence algorithms in the production of deepfakes have grown until Disinformation is a global phenomenon that must take the necessary measures at the international level to protect societies from its dangers.

Arafat's study (2025) also examined recent trends in artificial intelligence research and its uses in the media during the period from 2020 to 2024. The study focused on how artificial intelligence is used to analyze and direct social media content, and its impact on shaping public opinion in the region. The results indicated the increasing use of artificial intelligence technologies in the creation and distribution of media content, which raises questions about the credibility of information and its impact on the public, and the study of Al-Zubaidi and Al-Hasani (2024) showed how artificial intelligence technologies are exploited in designing and implementing targeted advertising campaigns on social media, with the aim of influencing public opinion in the countries of the Middle East. It found that these technologies are used to accurately identify target groups, and to deliver personalized content that enhances the effectiveness of sponsored messages, leading to the formation and direction of public opinion in unprecedented ways. Many studies have addressed the use of artificial intelligence techniques in creating and distributing fake

news on social media platforms. The results of the study of Al-Zoubi and Al-Husseini (2024) showed how artificial intelligence is used to design and implement disinformation campaigns targeting social media users in the Middle East, as these campaigns rely on advanced algorithms to analyze user behavior and target misleading content in ways that increase its spread and influence on public opinion. In Ahmed and Ali's study (2023), the results indicated that artificial intelligence is increasingly being used to create misleading content that is difficult to distinguish from real news, leading to misleading public opinion and increasing the spread of misinformation. ElSayed and Hassan (2023) focused on how AI can be used to spread disinformation on social media during periods of political crisis in the Middle East. The results showed that actors are using AI techniques to create networks of fake accounts and fake content, contributing to misleading the public and increasing tensions. Al-Khatib, N.S., and Ali, Z.Y. (2023) provided an analysis of disinformation networks that use AI to create and disseminate disinformation content on social media in the Middle East. The study focuses on how to detect these networks and understand their mechanisms of action, as well as providing recommendations to combat the spread of disinformation. Al Hammadi and Al Nuaimi (2023) reviewed how AI-based deepfakes are used to create fake media content, and their impact on the credibility of information circulating in social media in the Middle East. The results indicated that these technologies are increasingly

being used to spread disinformation, distorting facts and misleading public opinion.

The study (Todd, C. 2022) showed the dangers of this counterfeiting through cases of Russia targeting the 2016 United States elections, as well as China for demonstrators in Hong Kong, as well as skeptics about the effectiveness of coronavirus vaccines in 2019, where the study dealt with the way counterfeiting techniques work, noting that they are videos with artificially modified footage in which the digitally photographed face or body is modified to appear as a person or something else. The study concluded with recommendations that could contribute to reducing the use of artificial intelligence techniques in spreading disinformation, including the need for governments, social media platforms and private sector stakeholders to invest in technology to detect the uses of artificial intelligence techniques to falsify facts, and increase media literacy efforts.

A study (Bradshaw, S., Howard, P. N., 2021) confirmed the great success of using AI in disinformation campaigns on social media, including smart robots and automated analysis. According to a study by (Verdoliva, L., 2020), the various technologies used to create and edit content on social media using artificial intelligence, including deepfakes, have a significant impact on society. Although disinformation is an old problem, the AI systems found in the current digital web ecosystem contribute to exacerbating the problem in two ways. First, they can be exploited by malicious

stakeholders in order to manipulate individuals in a particularly effective and widespread manner. Second, they directly increase the prevalence of such content so that fake content becomes increasingly realistic. The study stressed the need to promote access to accurate information while respecting freedom of expression and information, which requires the support of the media and journalists. The study (Guess, A., Nyhan, B., & Reifler, J. (2019) also warned that deep fakes are dangerous for the future, as this technology can generate highly realistic fake videos of people doing things they did not commit. This type of disinformation is a major threat to trust in visual information and is difficult to detect.

Some studies have shown that artificial intelligence (AI) techniques are used to shape public opinion, such as algorithms that suggest specific content to users based on their past interactions, where these technologies are strategically used by governments or political groups to direct messages and promote certain agendas. Studies such as (Hossain, M., & Azad, S. 2021) have shown that there is a complex interaction between humans and machines in producing impactful content, such as chatbots that can be used to spread certain political or social messages in a coordinated manner. The results of the study showed the role of influential artificial intelligence and algorithms in shaping public opinion, and how to use them to manipulate information to serve special interests. The findings of (Azad, S. 2021), (Mellouli, S., & Hossain, L. 2021), (Ben-Nun, S., & Levi, A. 2020) where they emphasized the

effective impact of the use of algorithms and artificial intelligence in shaping public opinion and how it can be a tool for political manipulation.

Research problem:

The digital arena in the Middle East is witnessing a remarkable rise in the manipulation of digital content on social media sites to influence public opinion, as various actors use advanced strategies to spread false news and misleading campaigns, the most important of which are artificial intelligence tools. These processes greatly influence public opinion, ignite conflicts, and polarize societies. The responsibility to counter manipulation of public opinion lies with many parties, including governments, social media platforms, media organizations, and citizens themselves. It has therefore become necessary to develop strategies to counter the manipulation of public opinion in the Middle East. These strategies should include developing tools to detect fake news, enhancing media awareness among the public, and tightening censorship of digital platforms.

The research problem can be formulated by the following question: How do different actors exploit the digital platforms and AI tools available to manipulate public opinion in the Middle East?

Significance of Research:

1. The research contributes to shedding light on the role of AI tools in misleading public opinion, helping to better understand the growing digital threats facing societies in the Middle East.
2. The research highlights the risks posed by the misuse of artificial intelligence technologies, such as deepfakes and intelligent robots, spurring governments and institutions to take preventive measures.
3. The research contributes to bridging a knowledge gap on the impact of artificial intelligence on digital media in the Middle East.
4. The research provides evidence-based recommendations that can guide decision-makers towards developing effective policies to counter digital disinformation and enhance digital security.
5. The research contributes to the development of AI-based technical solutions to monitor and detect content manipulation, enhancing the immunity of social media platforms.

Research Objectives:

1. Analyze the use of AI tools to mislead public opinion by examining patterns and ways in which AI technologies, such as deepfakes and intelligent robots, are used to

produce and distribute misleading content on social media.

2. Assess the factors contributing to the success of disinformation campaigns by analyzing the technical and social factors that contribute to the spread of disinformation, such as the use of algorithms to target specific groups or the exploitation of local cultures.
3. Propose mechanisms to reduce the impact of disinformation using AI by providing recommendations to improve awareness strategies and address content manipulation by strengthening the role of governments, digital platforms, and civil society.
4. Develop a model to detect content manipulation and propose technical solutions based on AI itself to detect and prevent the dissemination of misleading content on social media sites.

Research Questions:

The main question: How are AI tools used to mislead public opinion by manipulating social media content in the Middle East, and what measures are possible to counter them?

- **Sub-questions:**

1. What are the most prominent artificial intelligence technologies used to produce and disseminate misleading content on social media?
2. How much does AI-powered disinformation affect public opinion on political, social, and economic issues in the Middle East?
3. How do algorithms and social media platforms promote or limit the spread of disinformation?
4. What are the possible technical and ethical solutions to reduce the impact of AI on digital disinformation?
5. How can AI itself be employed to detect and prevent content manipulation on social media platforms?

Theoretical Framework:

Information Disorder Theory

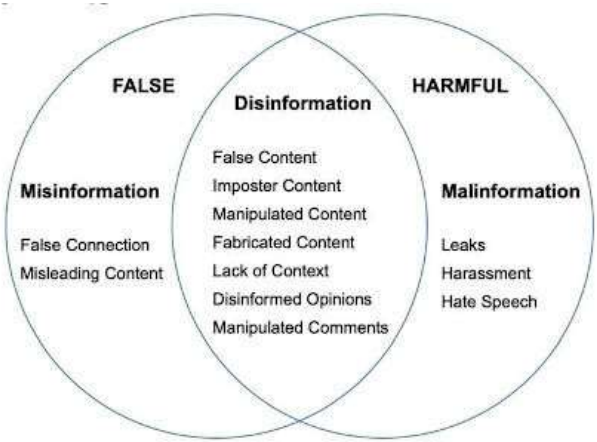


Figure (1) Information Disorder Theory
Source: Humprecht, Esserl & Van Aelst, 2020, p. 495

Information disorder theory emerged to provide a framework for understanding the different types of disinformation spread via digital means. It was presented by Claire Wardle and Hossein Derachshan in 2017 in a report to the Council of Europe. (Wardle, C., & Derakshan, H. 2017)

The three types of information disorder:

1. **Misinformation:** Misinformation that is unintentionally disseminated to mislead.

2. **Disinformation: False** information disseminated with the intent to mislead.
3. **Malinformation: Real** information used to cause harm.

The main foundations of the theory:

1. **Rapid spread: Digital** platforms contribute to the rapid spread of misleading content.
2. **Exploitation of algorithms: the** emergence of controversial or emotional information is enhanced.
3. **Social and political impact:** Information turmoil undermines trust in institutions and increases polarization.

The theory helps to understand how fake news spreads issues concerning the Middle East and its impact on public debate, especially on sensitive political, social and economic issues, and how disinformation can be exploited to influence public opinion. The theory provides a powerful framework for analyzing strategies for digital manipulation of social media through AI tools to achieve the interests of actors.

Methodology:

This research is considered descriptive research that adopts the survey methodology, which is used to understand social phenomena and analyze the relationships between variables. It aims to explore the artificial intelligence tools

used to manipulate and falsify the content of social networking sites on political, economic and social issues to mislead public opinion to achieve the interests of the active forces by scanning the posts of social networking sites (Facebook, X, Instagram, and TikTok) related to the Middle East during October, November, December 2024, and analyzing them to clarify how these technologies are used to mislead public opinion to achieve the interests of the active forces.

Data collection methods:

The research relied on analyzing the content of misleading and fake political, social and economic publications that affect the interests of the Middle East. The analysis was carried out according to the following steps:

1. Use tools to detect misleading posts, images, and videos through keywords.
2. Use social media monitoring tools and websites to find out the nature of counterfeiting in publications related to prominent political, economic and social events in the region.
3. View a sample of the most trending photos, videos, and text posts.
4. Analyze data and classify content through:
    1. Determine the percentage of manipulation by platform.

2. Identify the type of manipulation (distortion of text, editing images, or falsification of videos).

Results:

To prepare an inventory of the most important news, videos, and images that were manipulated, falsified and published on social networking sites with the intention of influencing public opinion during the research period, the following steps were followed:

1. Keyword research

Common keywords associated with controversial events were used: (very urgent, major scandal, you will not believe, disaster, exclusive, no publication, confirmed news, the first of its kind, the next war, coup, betrayal, secret alliance, dangerous secrets, new fatwa, sectarianism, war on Gaza, troop withdrawal, new weapon, new threats, mass demonstrations, conspiracy, deal of the century, shadow state, secret plan, global organization, save, witness before deletion, Zionist enemy, mujahideen, martyrs, targeting civilians, human slaughterhouse.). The result of the count was 6542 publications.

2. Use social media monitoring tools to verify posts, photos and videos obtained as a result of research. This is done through the following steps:
   - Adjust the settings of the tools for monitoring by creating an account on the tool, entering the specified keywords and hashtags, adding language filters (Arabic), geographical location (Middle East), content

type (post, photos, videos), and then reviewing the control panel to see the linked content in real time.

- Analyze suspicious content through the following tools:

Table (1) Tools for detecting tampering with digital content

Tool	Function
- First Draft News	Monitor the most engaged posts
- Crowd Tangle	Monitor trending content on social media, analyze the spread of fake news, monitor news related to specific keywords
- Hootsuite Google Trends	Monitor keywords and hashtags, and generate reports on user engagement
-Talk walker	Monitor keyword-related content across multiple platforms and identify misleading content through context analysis.
- Lead Stories - Fact Crescendo - Full Fact - Media Bias/Fact Check - PolitiFact - AdVerif.ai	News Validation
- FactCheck.org	An independent organization to verify facts and clarify fake news.
- PolitiFact	Check for political statements and fake news related to politics.

Tool	Function
- Snopes	A site to check fake news and myths trending on the Internet.
- Botometer - Truth Nest	Analyze the accounts and ascertain whether they are managed by robots or real users.
- Hoaxy	View how fake news spreads on XX, and follow the evolution of shady news stories
- Google Jigsaw's Perspective API	Analyze and categorize text to detect misleading content.
- ExifTool - FotoForensics - Berify - TinEye - Amped Authenticate - TinEye Forensically	Detect any modifications in images or taken from context
-Google Reverse Image Search	Search for similar images online, which helped determine if the image was outdated or used in other contexts.
- Deeptrace Labs - InVID - Deepware Scanner - Amped Replay - YouTube DataViewer - Verify	Validate videos by checking the origin, time, date, and detection of counterfeiting using AI

Research shows that detecting misleading content and manipulating digital posts relies primarily on a variety of specialized tools. These tools were analyzed based on their main functions in detecting fake news, analyzing photos and videos, and monitoring suspicious activities on social media platforms.

Dealing with various previous tools, tools such as Crowd Tangle, Google Reverse Image Search and PolitiFact have been shown to be highly efficient at detecting fake news and detecting manipulation. As for the analysis of images and videos, you need advanced technologies such as InVID and FotoForensics that provide accuracy in detecting modifications. Tools such as Botometer and Hoaxy are integrated in analyzing suspicious accounts and detecting the use of bots to spread misleading content.

After checking with the tools, it was found that 1,300 publications were manipulated, falsified or created through AI tools to influence public opinion towards the interests of the effective force. These publications were as follows:

Table (2) Misleading Social Media Posts

Publications / Platform	Political		Economy		Social	
	D.	D.	D.	%	%	%
Facebook	200	150	150	11.5	11.5	15.3
X	180	120	100	7.7	9.3	13.8
Instagram	120	80	100	7.7	6.2	9.3
TikTok	30	30	40	3.1	2.3	2.3

After verification using counterfeiting detection tools, the research showed that 1,300 posts were manipulated or created using artificial intelligence tools with the aim of

influencing public opinion in favor of influential forces. These publications were distributed among political, economic, and social groups on various social media platforms.

Political content turned out to account for the largest proportion of misleading posts across all platforms. That finding is consistent with the result of the (Meyer, A. 2020). Facebook recorded the highest percentage of misleading political posts, with 200 posts, equivalent to 15.3% of the total misleading posts, and X came in second place with 180 misleading political posts (13.8%), followed by Instagram contributed 120 posts (9.3%), and finally TikTok recorded the lowest percentage, with only 30 posts (2.3%). These results show that misguided people focus on platforms with an active political audience such as Facebook and X to publish political content aimed at shaping public opinion.

Economic content came in second in terms of counterfeiting, with marked variation between platforms. Facebook recorded 150 misleading economic posts (11.5%), X contributed 120 posts (9.3%), and Instagram recorded 80 posts (6.2%). Finally, TikTok came with the fewest percentage, with only 30 posts (2.3%). This data suggests that platforms such as Facebook and X are used as main channels to mislead the public about economic issues, such as investment or financial crises. That result is consistent with the result of the (Al-Rawi, A. 2020) which stressed that digital platforms may contribute to deepening gaps between different groups on economic issues, leading to increased

tensions and conflicts between members of society in favor of active forces.

Social posts were the least prevalent compared to political and economic content, but they still play an important role in misinformation. Facebook recorded 150 misleading social posts (11.5%), followed by X and Instagram contributing 100 posts (7.7%) and TikTok had the lowest percentage with 40 posts (3.1%). He notes that misleading social content is promoted less on platforms than political and economic content, but relies primarily on emotion to attract attention.

The previous analysis shows that Facebook is the most targeted platform for spreading misleading posts in all categories, reflecting its significant impact on public opinion. Most of the results of previous studies such as (**Al-Rawi, A. 2020),**(Al-Debaisi, 2025) agreed with this result .Platforms such as X and Instagram also play a notable role, especially in political and economic content, while TikTok shows the lowest rates of counterfeiting, but focuses on visual social content. The high percentages of political and economic publications indicate a clear targeting to direct public opinion on issues affecting the political and economic stability of the Middle East.

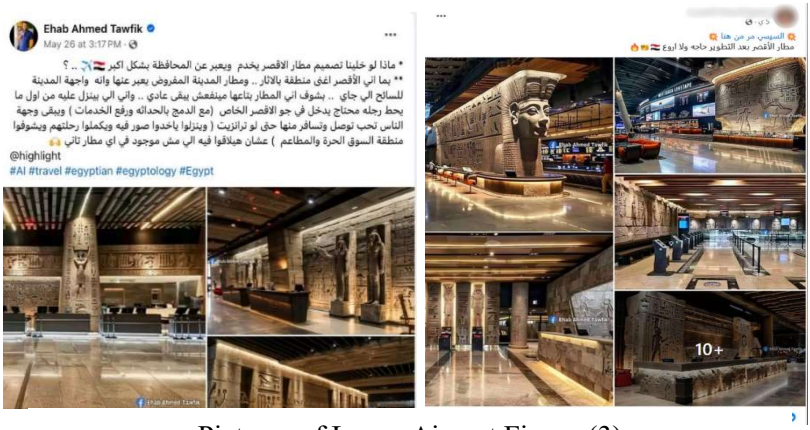
Examples of images that have been widely circulated by social media pioneers and have been manipulated or created with artificial intelligence are the following:

A design copy of the Egyptian passport and its issuance instead of the previous passport

Figure (2) New design for the Egyptian passport

A picture circulated through social media platforms, showing a new technical design for the Egyptian passport and issuing it instead of the previous passport, and the comments came as follows: «Happy news for all Egyptians, the Egyptian passport was like this and will remain like this». But the image is fabricated and incorrect and was designed with artificial intelligence tools, as the Presidency of the Council of Ministers published a statement denying the rumors circulating for the new technical design of the Egyptian passport, and the Prime Ministry indicated that there is no validity to the images circulating in this regard, and that the images circulating is not issued by the ministry, stressing that the current design of the Egyptian passport is unchanged.

- Luxor Airport after development



Pictures of Luxor Airport Figure (3)

One of the Facebook pages published the picture and attached the following description: "Sisi passed through here Luxor Airport after the development is a need and not the most wonderful." It claims to show Luxor Airport in Egypt recently after the completion of airport development work. Through a direct search in the account whose name is fixed on the images "Ehab Ahmed Tawfik", it was found that the images were published by the Egyptian engineer and designer Ehab Ahmed Tawfik on May 26, 2024, explaining in describing it as an imaginary design designed by artificial intelligence techniques for Luxor Airport, expressing the beauty of the governorate more.

- Haram Cafe in Egypt

Figure (4) AI-generated image of a pyramid-shaped café in Egypt

The image of the pyramid café in Egypt ignited social media with comments that this unique café was built in the shape of a pyramid, using the same type of limestone found in the ancient pyramids of Giza. With its seven floors, it offers a different and wonderful experience for visitors, and the interior of the pyramid is decorated with hieroglyphs and ancient statues of pharaohs. They claimed that I could buy replicas of ancient antiques and local artisans' products, and at night it became an astronomical observation space. The observatory, equipped with modern telescopes, allows visitors to explore the night sky. And learn about the constellations that fascinated the ancient Egyptians. But the image was created with artificial intelligence and there is no café like this in reality.

- Picture of a residential building in the form of a popular neighborhood

Figure (5) AI generated image of a residential building in Cairo

A photo of a residential building in the form of a popular neighborhood with a comment: «A residential building in one of the popular neighborhoods in Cairo» has garnered thousands of interactions and hundreds of shares from several pages on the social networking site Facebook, claiming that it belongs to one of the residential neighborhoods in Cairo, and many believed that the image is real. While it is an image generated using artificial intelligence, it goes back to an art series created by the Egyptian engineer and digital artist Hassan Ragab using artificial intelligence, where huge popular residential buildings appear on his Instagram account on February 8, 2024, among other designs showing huge popular residential buildings, and the attached comment stated that they were designed using artificial intelligence under the title "Cairo Drawings".

- Plane lands at Lebanon airport amid bombing

Figure (6) AI-produced image A plane lands at Lebanon airport amid the bombing

The photo was widely circulated on social media during the Israeli bombardment of Lebanon. The photo shows a Lebanese Airlines plane approaching landing at Rafic Hariri Airport in the Lebanese capital Beirut as the airport is surrounded by heavy and unprecedented bombardment of Beirut. But by research and scrutiny, there is manipulation that shows that the image is produced by an artificial intelligence program, there are several windows illuminated in the building shown in the picture, which are not parallel to the building itself, but rather inclined abnormally and contrary to building rules, the front of the plane is shorter than in the types of aircraft belonging to the Lebanese national airlines, and the tail paint looks different from what is in reality, and the front windows of the plane are hidden.

- Cyber-attack blows up computers, phones and solar plants in Lebanon

Figure (7) Image of a cyber-attack blowing up computers, phones and solar stations in Lebanon

After the bombing of pagers in Lebanon on Tuesday and Wednesday, September 17 and 18, 2024, which killed at least 37 people and injured about 3,000 people, fake images and deceptive videos spread online about other similar incidents of a cyber-attack blowing up computers, phones and solar stations in Lebanon, according to what a social media user wrote on the X website, and posted along with the caption a picture of a charred laptop. But this image of a charred laptop has nothing to do with the explosions of pagers and wooki talkies in Lebanon and the images used to signal these attacks have been manipulated with artificial intelligence tools.

- Gaza Events

Although the real images of the people of the Gaza Strip from the Israeli army's attacks during the ongoing war since October 2023 that express the situation as it is are no less

terrible than the images generated by artificial intelligence, the fake images spread and create misleading effects, which may be used to distort the facts and mislead, especially by the Israeli media and campaigns questioning the suffering of the people of the Strip. Fake images spread quickly on social media, making it difficult for users to distinguish them from photos in fact, it always speaks to emotions, represented by two main categories: the first category concerns images that focus on the suffering of civilians and arouse sympathy for them, and the second category exaggerates the support that Israel receives or similar to that provided to Hamas or the Palestinians in a way that evokes patriotic feelings. These images include:

- Children sleeping in mud covered in mud in front of or inside tents

Figure (10)

Figure (9)

Figure (8)

Not only did websites and a number of social media users publish real photos of Palestinian children in the Gaza Strip of sleeping children who were flooded by the tents in which they reside in various governorates of the Gaza Strip, and the real tragedy they caused to the displaced by the ongoing

Israeli war, but also published images generated by artificial intelligence, claiming that they show children sleeping in a tent the moment it sinks.

As in Image (8), which was created using artificial intelligence, there are clear signs that the image is not real as each of the boys has a foot with only four fingers - a known mistake that artificial intelligence makes. In addition, the right foot of the boy on the left looks disproportionate, the children's intertwined fingers appear very similar, their wrists should be facing back more, and the child's head on the left appears to lie higher than the pillow.

Picture No. (9) showing two children was posted on X, Instagram and TikTok platforms. Light reflections on the floor and the bottle at the bottom of the image look unnatural. The second finger on the girl's foot at the bottom of the photo appears very large. The girls underfoot appears unusually, as if they were standing on the floor or suffering from flat feet. The skin appears flawless – which is also a hallmark of images resulting from the use of artificial intelligence.

When checking the details of picture (10), we find a few fingers, abnormal tangles and errors in lighting, as the lower parts of their bodies overlap with each other. It seems that the front girl without legs. It also shows the distortion of drawings on fabrics, and the distortion as a result of an error in artificial intelligence.

- A dog shot by Israeli soldiers at an elderly Palestinian woman while she was sleeping

Figure (11) AI-generated image of a dog attack by Israeli soldiers on an elderly woman

Al-Jazeera published exclusive footage showing an Israeli police dog attacking an elderly Palestinian woman in Jabalia refugee camp in the northern Gaza Strip. The leaked footage from a camera mounted on the dog by the occupation soldiers shows the moment he attacked the elderly woman while she was in bed, as she started screaming while the dog was eating her body and dragging her. The scenes provoked a state of anger and condemnation towards the occupation's action against the elderly woman. Several hours later, an AI-generated photo of the crime suffered by the elderly woman in Gaza was posted and was widely popular on social media. Although it expresses a crime that is no less horrible than the image itself, some websites and users have published the image and claimed

that it is real, while it is generated using artificial intelligence techniques was published for the first time in the account of designer Islam Nour On the Instagram platform he pointed out that it is a work of art and design done by him and not real. Besides, the details of the image itself and the shape of the dog clearly show that it is not real. Going back to the scenes published by Al-Jazeera during the dog attacking the elderly woman, it is also clear that her dress is different from the one shown in the photo circulating in the claim and that the Israeli dog looks different from the dog that attacked the Palestinian woman.

- Photo of a child under the rubble holding a balloon in his hand

Figure (12) AI-generated image of a child under the rubble holding a balloon in his hand

The previous photo was widely popular on social media and websites, indicating that it is a photo of a Palestinian child taken in the Gaza Strip. But the photo was posted on Ibrahim Al-Sayed 's Instagram account on October 31, 2024, and he commented on his post by saying, "I tried to embody hope despite the pain of the people of Gaza with artificial intelligence."

- Photo of a father with his five children

Figure (13) AI-generated image of a father with his five children amid the rubble of the Israeli bombardment

The previous photo was widely shared on X and Instagram to illustrate the extent of the losses caused by the Israeli bombardment of the Gaza Strip. But the image is fake by standing on many errors and contradictions that are always found in fabricated images by artificial intelligence, as it can be seen that the father's right shoulder is disproportionately high with his left shoulder, as well as the strangeness of the position of the hands of the two children around their father's neck, and there is a difference in the number of fingers, whether in hands or feet, with the truth.

- Soldiers wave Israeli flags as they march through a settlement amid the rubble of destroyed homes

Figure (14) Fake AI photo of Israeli soldiers in Gaza

A picture shows soldiers waving Israeli flags as they walk through an area of Gaza amid the rubble of destroyed homes. The accounts that posted the photo on X and Instagram turned out to be pro-Israel. The image was found in a Bulgarian newspaper article without saying it was a fake. The fabrication of the image is shown by observing the way Israeli flags flutter. The street in the middle of the image also looks clean, opposite its sides, and the rubble is in a very homogeneous shape. The visual impression of the image shows that it is so unrealistic that the image appears to be drawn and is a sign of the use of artificial intelligence.

- A picture of the director of Shifa Hospital in Gaza raising the victory sign

Figure (14) AI produced photo of the director of Shifa Hospital in Gaza

A fake photo of Dr. Mohammed Abu Salmiya, director of Al-Shifa Medical Complex in Gaza, was published showing him raising the victory sign in front of the rubble of a building after his release from an Israeli prison in July 2024. The image was produced using artificial intelligence by designer Islam Nour, who stated that it reflects Abu Salmiya's announcement of his return to the Shifa Complex and the resumption of his work.

- Photos from Sednaya prison in Syria

Figure (14) AI produced photo of a Syrian detainee imprisoned in the pit

Previous photos widely circulated by Syrian and Arab accounts show a man who looks surprised and terrified inside a narrow hole, and said that it is a Syrian detainee in Sednaya prison, known as the "human slaughterhouse", terrified and incredible of what is happening when they managed to reach him to free him. But a reverse image search via Google search proved that the snapshot was taken from an AI-generated video that simulates a man emerging from a hole with a huge spider.

- Sednaya prison plan in Syria

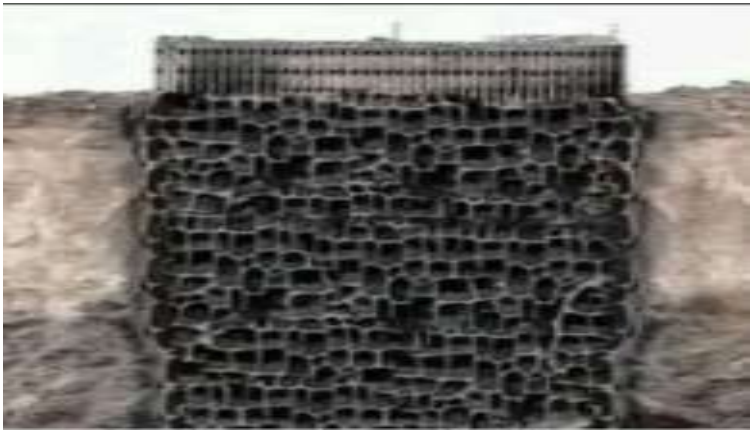


Figure (15) Fabricated picture of secret cellars in Sednaya prison

The previous image spread and its publishers claimed that it was for secret underground cellars in Sednaya prison in Syria, and commented the owner of the image designer Mustafa Yacoub, who posted it on Facebook, "If Dante Allegri entered the Sednaya military prison, which was invented by Assad's mind sick of criminality, to rewrite the chapter of hell again as an admission of the helplessness of

his imagination in front of the brutality of reality." As he followed the designer's page, we find that he commented on the image by saying, "I wanted to highlight the injustice and brutality of the hell of Saydnaya, which exceeds the hell described by Dante, and I consider the image a simulation of Dante's hell, especially through the painting of the Italian artist Sandro Botticelli, and I wanted to portray hell layers that narrow as we head down as Dante and Bocelli saw it, and I modified the idea to make it a greater extension. The cells were inspired by the ant kingdoms to leave the impression of phobia of holes in the recipient," all to describe Sednaya prison through the help of artificial intelligence tools.

3- **Data analysis and content classification**

Table (3) Fake Social Media Content and Methods of Falsification

Content	Percentage of manipulation by platform	Manipulation methods
Political content	○ Facebook 40% of posts ○ X 35% of Tweets ○ Instagram 25% of photos and videos ○ TikTok 20% of videos	○ Use artificial intelligence to edit photos and videos. ○ Create fake accounts to post content.
Social Content	○ Facebook accounts for 30% of posts. ○ X 20% of Tweets ○ Instagram 15% of photos and videos ○ TikTok 25% of videos	○ Use photo and video editing software. ○ Amplify events using automated calculations (Bots).

Content	Percentage of manipulation by platform	Manipulation methods
Economic Content	○ Facebook: 50% of posts ○ X: 40% of tweets ○ Instagram: 35% of photos and videos ○ TikTok: 30% of videos	○ Voice counterfeiting using artificial intelligence. ○ Modify text and images to change meaning.

Research results show that social media sites have become a major platform for spreading fake content that aims to shape opinions and influence audiences in various fields. Based on the data collected, this fake content was categorized into three main categories: political, social, and economic, with the methods used to falsify each.

1. **Political Content:** The results showed that fake political content occupies a large percentage of activity on social media platforms. Facebook recorded the highest percentage (40% of political posts), followed by X (35%), Instagram (25%), and TikTok (20%). The main methods of fabricating this content involve using artificial intelligence to edit photos and videos, allowing for the distortion of political figures or modification of significant event scenes. Additionally, fake accounts are created to amplify messages, making fake political narratives widely disseminated and creating a false impression of public opinion (Bradshaw & Howard, 2021; Al-Debaisi, 2025; Verdoliva, 2020).
2. **Social Content:** Social content is affected by fake information to a relatively lower extent compared to

political content. Fake content constitutes 30% of posts on Facebook, 20% on X, 15% on Instagram, and 25% on TikTok. Photo and video editing tools are primarily used to exaggerate social events, making them appear more dramatic or tragic than they actually are. Automated accounts (bots) are also used to intensify reposting of fake content, thereby enhancing its spread and influencing audience emotions (Vosoughi, Roy, & Aral, 2018).

3. **Economic Content:** Economic content was the most affected by misinformation, with Facebook recording the highest percentage of fake posts (50%), followed by X (40%), Instagram (35%), and TikTok (30%). A key method of falsifying economic content is **audio deepfake technology**, where artificial intelligence is used to generate fake voice recordings of influential economic figures to spread misinformation. Text and images are also altered to manipulate economic reports or investment opportunities, misleading the public and provoking ill-considered financial decisions (Chesney & Citron, 2019).

Implications of Fake Content on Society

Research findings indicate that the spread of fake content leads to serious societal repercussions. In the political sphere, it contributes to **public opinion manipulation** and political instability (Bradshaw & Howard, 2021). In the social sphere, it fosters **division and exacerbates societal issues** by spreading rumors and fake news (Vosoughi et al., 2018). Fake economic content results in **financial losses**, as

decisions are made based on misinformation (Chesney & Citron, 2019).

Discussion of Findings

1. **The Role of AI in Eroding Public Trust:** The results revealed that AI-generated fake content makes it difficult to distinguish between real and fake news, significantly affecting public trust in online information. This aligns with prior research findings (Bradshaw & Howard, 2021; Al-Debaisi, 2025; Verdoliva, 2020).
2. **Strategies of Manipulating Social Media Content Using AI:**
    - **Fake Accounts:** Fake accounts (bots) are widely used to spread misinformation and influence discussions (Bradshaw & Howard, 2021).
    - **Emotional Manipulation:** Fake images and videos are used to elicit anger or empathy, as emotions strongly influence public opinion (Vosoughi et al., 2018).
    - **Partial Misinformation:** Some campaigns present **partially accurate but misleading** information to manipulate public perception (Bradshaw & Howard, 2021).
3. **Digital Manipulation and Public Opinion Trends:** Digital manipulation significantly influences public opinion, as evident from followers' comments on

manipulated posts, where **82% of users accepted the content as factual**. This manipulation leads to:

- Increased public vulnerability to misinformation.
- Greater polarization in political and social issues (e.g., political conflicts, regional disputes, and sectarian divisions) (Chesney & Citron, 2019).

4. **The Role of Social Media Platforms in Spreading Misinformation:**
   - **Rapid Information Dissemination:** social media facilitates fast information spread but lacks effective mechanisms to curb misinformation (Bradshaw & Howard, 2021).
   - **Algorithmic Bias:** Some platforms prioritize engagement, amplifying the spread of fake news (Chesney & Citron, 2019).
5. **AI Tools and Techniques Used to Manipulate Public Opinion:**
   - **Algorithm Exploitation:** Algorithms on platforms like Facebook and Twitter are manipulated to promote specific content, increasing emotional reactions such as anger and fear (Bradshaw & Howard, 2021).
   - **Bots:** Automated bots amplify or promote content, especially on political issues. Research identified fake accounts publishing identical messages to incite

different factions in Syria (Bradshaw & Howard, 2021).

- **Inflammatory Hashtags:** Controversial hashtags are created to shape public debate, influencing narratives in favor of active forces. This technique has been used in economic crises in Egypt and the Syrian conflict (Vosoughi et al., 2018).
- **Deepfake Videos:** AI-generated videos require sophisticated technology, significant financial resources, and skillful execution. Fabricated videos were widely used in the Israeli-Palestinian conflict and manipulated speeches of Egyptian President Abdel Fattah el-Sisi (Verdoliva, 2020).
- **Voice Cloning Technology:** Applications allow users to simulate the voices of influential figures, spreading false economic information to manipulate financial markets (Chesney & Citron, 2019).
- **Deepfake Images:** AI-generated images have been widely circulated, especially in Gaza, depicting exaggerated realities to sway public opinion (Verdoliva, 2020).

6. **Key Actors Behind Fake Content:**
   - **State and Government Actors:** Some governments use misinformation to influence domestic and international public opinion, either to improve their image or discredit opponents (Bradshaw & Howard, 2021).

- **Non-State Actors:** Armed groups, dubious NGOs, and lobbying entities spread misinformation to serve political and financial agendas (Chesney & Citron, 2019).
- **Individuals and Influencers:** Many influencers engage in misinformation for financial gain, boosting engagement metrics through fake news (Vosoughi et al., 2018).

7. **Motivations for Spreading Fake Content:**
   - **Political Control:** Fake news influences elections, increases support for specific causes (e.g., the Palestinian struggle), or strengthens regime loyalty (Bradshaw & Howard, 2021).
   - **Deepening Social Divisions:** Misinformation promotes hatred between sectarian and ethnic groups, leading to protests, election abstentions, and even violent conflicts (Vosoughi et al., 2018).
   - **Economic Manipulation:** Fake news destabilizes markets, directs specific investments, and fosters distrust in ruling institutions (Chesney & Citron, 2019).

Suggestions and Recommendations:

Over time, creating fake posts, photos and videos will become easier and faster, and will rely on much less data and images than at the present time, and the day will come when individuals can create fake images that look realistic using

smartphone applications only, and it will be difficult to detect them, and such factors will inevitably lead to an increase in the number of parties involved in creating and publishing fake content, which in turn will reduce the possibility of arresting the perpetrators or paying the resulting geopolitical price, therefore, the researcher suggests some Recommendations that may limit the threat to the integrity and validity of information, including:

Recommendation	Responsible for implementation
○ Enhance transparency in social media platforms by requiring social media platforms to provide clear tools for users to report misleading content and promote automatic detection techniques.	○ Major social platforms. ○ Regulatory bodies on digital media.
○ Support research and development in anti-disinformation technologies by allocating funds to support research related to the development of artificial intelligence tools capable of detecting counterfeiting and digital manipulation. Strengthen partnerships between governments and technology companies to develop more effective tools to combat digital disinformation.	○ Governments and research institutions. ○ Tech startups. ○ International donors and global organizations.

Recommendation	Responsible for implementation
o Establishing a regional and international cooperation framework to exchange information and experiences on digital disinformation campaigns and ways to combat them	o Regional and international governments. o International organizations such as the United Nations and the Organization of Islamic Cooperation.
o Include educational programs to develop students' critical thinking skills and combat digital disinformation	o Ministries of Education. o Educational institutions and universities.
o Impose strict laws to protect user data from exploitation in digital disinformation campaigns.	o Governments and data protection authorities. o Technology companies responsible for collecting and processing data.
o Training journalists and media professionals to use news and information verification tools to counter digital disinformation.	o Media institutions. o Media Training Organizations
o Update and develop local and regional laws related to combating digital disinformation to include penalties for misusing AI in the production of misleading content.	o Governments and legislatures. o Regional organizations (such as the League of Arab States).

Recommendation	Responsible for implementation
o Develop AI-based platforms to monitor and track misleading content and analyze its sources and spread patterns.	o Specialized technology companies. o Universities and scientific research centers. o Collaborate with major social platforms.
o Launch comprehensive awareness campaigns to inform the public about the dangers of digital disinformation and methods of verifying content on social media.	o Ministries of Information and Education. o Civil society organizations. o Major media platforms.

Conclusion:

To conclude this research, we emphasize that employing artificial intelligence tools to mislead public opinion by manipulating social media content poses a major challenge for societies in the Middle East, where advanced technologies overlap with social and political dimensions to have wide-ranging impacts. Through this research, we reviewed the most prominent tools and techniques used in digital disinformation, and shed light on the patterns and strategies that are exploited to target the public, while analyzing their repercussions on the stability of societies and the awareness of individuals.

The results also showed the importance of strengthening local and regional legislation and policies, as well as the role of digital platforms in assuming their responsibilities towards reducing the spread of misleading content. At the same time, employing AI as a defensive tool to detect and stop misinformation remains a key focus in countering this phenomenon.

In conclusion, this research represents a first step towards a deeper understanding of the challenges of digital disinformation in the Middle East, and hopes to serve as a reference that contributes to the development of technical and ethical solutions to protect societies and promote public awareness. Meeting this challenge requires concerted efforts among governments, organizations, and civil society to ensure a safer and more sustainable digital environment.

References:

1. African Readings**.** 2024. *Oslo Peace Institute: A Record Level of Armed Conflicts in 2023 with Africa at the Forefront.* Retrieved from humanglemedia.com.
2. Ahmed, S.M., & Ali, N.K. (2023). The impact of artificial intelligence on the credibility of news in social media: an analytical study. *Journal of Digital Media Studies*, 5(2), 45-67.
3. Al-Ansari, A. 2024. *Reuters Digital News Report 2024: The Future of Journalism Facing YouTube, TikTok, and Influencers.* Retrieved from reutersinstitute.politics.ox.ac.uk.
4. Al-Debaisi, A. 2025. "The Uses and Applications of Artificial Intelligence in Measuring Public Opinion Trends and the Impact of Misinformation." *Al Jazeera Communication and Media Studies* 5: 213–244.
5. Al-Hammadi, S. A., and Al-Nuaimi, M. Kh. (2023). The impact of deepfake techniques on the credibility of media content in the Middle East. *Journal of Digital Media Studies*, 7(1), 45-68.
6. Allcott, H., M. Gentzkow, and B. Nyhan. 2016. "Social Media and Fake News in the 2016 Election." *Journal of Economic Perspectives* 30 (2): 211–236.
7. Al-Rawi, A. 2021. "Political Memes and Fake News Discourses on Instagram." *Media and Communication* 9: 276–290. https://doi.org/10.17645/mac.v9i1.3533.
8. Al-Zoubi, A. K., and Al-Husseini, R. M. (2024). The Role of Artificial Intelligence in Shaping Public Opinion: An Analysis of Disinformation Campaigns on Social Media. *Journal of Communication and Media Research*, 10(2), 112-135.
9. Arafat, E. M. (2025). Recent trends in artificial intelligence research and its uses in the media from 2020 to 2024 and a future vision. *Arab Journal for Communication and Digital Media Research, 4*(7), 20-112.

10. Ben-Nun, S., and A. Levi. 2020. "Algorithmic Governance: The Use of AI in Shaping Public Opinion in the Middle East." *AI & Society* 35 (4): 921–933. https://doi.org/10.1007/s00146-019-00935-0.
11. Boulianne, S. 2015. "Social Media Use and Participation: A Meta-Analysis of Current Research." *Information, Communication & Society* 18 (5): 524–538. https://doi.org/10.1080/1369118X.2015.1008542.
12. Bradshaw, S., and P. N. Howard.(2021). "The Role of AI in Social Media Disinformation Campaigns." *Journal of Communication* e32–19. https://doi.org/10.1017/dap.2021.20.
13. Bueermann, G., and N. Perucica. 2023. "How Can We Combat the Worrying Rise in the Use of Deep Fakes in Cybercrime?" Retrieved May 19, from tinyurl.com.
14. Castells, M. 2012. *Networks of Outrage and Hope: Social Movements in the Internet Age.* Polity Press.
15. Chesney, R., & Citron, D. (2019). Deepfakes and the new disinformation war: The coming age of post-truth geopolitics. *Foreign Affairs, 98*(1), 147-155.
16. El-Bakl, H. 2023. *Artificial Intelligence and the Risks of Deepfake.* A periodic report issued by the Information and Decision Support Center. Retrieved from idsc.gov.eg.
17. El-Sayed, A.B., and Hassan, Y. D. (2023). Analyze the role of AI in the spread of disinformation during political crises in the Middle East. *Journal of Political Science and International Relations*, 9(3), 134-156.
18. Entman, R. M. 1993. "Framing: Toward Clarification of a Fractured Paradigm." *Journal of Communication* 43 (4): 51–58.
19. Gorman, S., and T. Zengler. 2020. "Cyber Warfare and the Middle East: The Changing Role of Information in Political Conflict." *Journal of Information Technology & Politics* 17 (3): 237–251.

20. Guess, A., B. Nyhan, and J. Reifler. 2019. "Deep Fakes and the Future of Fake News." *Political Communication* 36 (3): 364–380.
21. Hassan, I. 2018. "Cyber Warfare and Political Power in the Middle East." *Journal of Cyber Security Technology* 2 (4): 278–296. https://doi.org/10.1080/23742917.2018.1544010.
22. Helmus, Todd C. 2022. "Artificial Intelligence, Deepfakes, and Disinformation: Expert Insights on a Timely Policy Issue." *RAND*.
23. Hossain, M., and S. Azad. 2021. "Artificial Intelligence and the Political Economy of Social Media in the Middle East." *International Journal of Political Economy* 50 (3): 228–245. https://doi.org/10.1080/08911916.2021.1948876.
24. Howard, P. N., and M. M. Hussain. 2013. "The Role of Digital Media." *Journal of Democracy* 24 (3): 35–48. https://doi.org/10.1353/jod.2013.0045.
25. Howard, P. N., and M. R. Parks. 2012. "Social Media and Political Change: Capacity, Constraint, and Consequence." *Journal of Communication* 62 (2): 359–362.
26. Humprecht, E., F. Esser, and P. Van Aelst. 2020. "Resilience to Online Disinformation: A Framework for Cross-National Comparative Research." *The International Journal of Press/Politics* 25 (3): 493–516.
27. Khatib, N.S., and Ali, Z.Y. (2023). Using AI in Analyzing Disinformation Networks: A Case Study in the Middle East. *Journal of Social Sciences*, 15(3), 89-110.
28. Letzing, J. 2021. "How to Tell Reality from a Deep Fake?" Retrieved April 1, from tinyurl.com.
29. McCombs, M. E., and D. L. Shaw. 1972. "The Agenda-Setting Function of Mass Media." *Public Opinion Quarterly* 36 (2): 176–187. https://doi.org/10.1086/267990.
30. Mellouli, S., and L. Hossain. 2021. "AI and Digital Propaganda in the Middle East: A Critical Analysis of Automated Bots and

Algorithmic Influence." *International Journal of Digital Media* 13 (1): 54–68. https://doi.org/10.1021/jdmp.2021.0048.

31. Meyer, A. 2020. "The Digital Battlefields of the Middle East: Cyber Warfare and Its Impacts on Public Opinion." *Global Media Journal* 20 (1): 89–104. https://doi.org/10.1177/1559415820905607.
32. Mourtada, R., and F. Salem. 2017. "Social Media, Culture, and Political Identity in the Arab World." *International Journal of Arab Culture* 12 (3): 143–158. https://doi.org/10.1016/j.jacc.2017.05.001.
33. Pariser, E. 2011. *The Filter Bubble: What the Internet Is Hiding from You.* Penguin Press.
34. Sabbagh, K., and Z. Harb. 2020. "Cultural Shifts and Social Media in the Middle East: How Technology Is Changing Youth Identities." *Journal of Arab Youth Studies* 22 (4): 301–316. https://doi.org/10.1080/07331485.2020.1753827.
35. Tufekci, Z. 2017. *Twitter and Tear Gas: The Power and Fragility of Networked Protest.* Yale University Press.
36. Verdoliva, L. (2020). Media forensics and deepfake detection: The challenges ahead. *IEEE Signal Processing Magazine, 37*(1), 5-8.
37. Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science, 359*(6380), 1146-1151.
38. Wardle, C., and H. Derakhshan. 2017. *Information Disorder: Toward an Interdisciplinary Framework for Research and Policy Making.* Council of Europe Report.
39. World Economic Reports. 2022. "Earning Digital Trust: Decision-Making for Trustworthy Technologies." Retrieved November 15, from tinyurl.com.
40. Zubaidi, M. R., and Al-Hasani, F. J. (2024). Using AI in Advertising Campaigns: Influencing Public Opinion in the Middle East. *Journal of Communication and Media Research*, 12(1), 89-110.