Journal of Infrastructure, Policy and Development 2024, 8(16), 7468.
https://doi.org/10.24294/jipd7468

Article

Extent of dependence of Jordanian electronic news websites on artificial intelligence applications

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CITATION

Amr H, Abu Halka M, Mohd R. (2024). Extent of dependence of Jordanian electronic news websites on artificial intelligence applications. Journal of Infrastructure, Policy and Development. 8(16): 7468. https://doi.org/10.24294/jipd7468

ARTICLE INFO

Received: 26 June 2024
Accepted: 28 October 2024
Available online: 19 December 2024

Abstract: The study aims to explore the extent to which Jordanian e-news sites rely on artificial intelligence applications in their news content. The researchers will use a media survey methodology, and the sample will consist of 45 editors-in-chief and editors from 10 Jordanian news sites, namely: Ammon, Khabrny, Joe24, Saraya, Amman Net, Jafra, Crown News, Petra, Kingdom, and Roya. The researcher will use an electronic questionnaire, which led to several findings, the most significant of which are: Many news and media sites have introduced artificial intelligence systems to enhance the services they provide to the public. A significant number of journalistic and electronic media websites have shown interest in data analysis tools for their media services. Electronic news sites are clearly striving to improve their capabilities in using artificial intelligence technologies to enhance the services they provide to the Jordanian audience. Additionally, most electronic media websites have expressed a willingness to develop a plan to improve cybersecurity systems to protect against hacking and intrusion attempts, safeguarding their data and the AI systems that operate continuously.AI systems in media organizations also aim to enhance the news experience for users by enriching media services with modern, communicative content.

Keywords: news sites; Jordanian newspapers; artificial intelligence

1. Introduction

Technology has become one of the most crucial tools for the digital media sector, enabling the production of electronic content that aligns with the expectations of social media users. The numerous changes in the field of digital journalism have been directly linked to modern technology, particularly the use of artificial intelligence techniques, which have created a significant leap in news coverage, allowing for immediate and urgent distribution across all news platforms (Alén-Savikko and Pihlajarinne, 2022). The Hashemite Kingdom of Jordan's plan to implement the Artificial Intelligence Strategy (2023–2027) is one of the most notable Jordanian initiatives, aiming to achieve a global vision by employing artificial intelligence to foster national development across various sectors. This includes utilizing AI strategies in media and journalism on digital platforms by integrating AI programs and algorithms into news site operations to make media coverage more effective and efficient (Jordan's Artificial Intelligence Strategy and Implementation Plan, 2024).

A study by Al-Tamimi et al. (2023) indicates that artificial intelligence has helped journalists prepare and create distinctive content that aligns with modern advancements, with mobile phones playing a significant role in enhancing journalists' digital skills and enabling the prompt completion of urgent news reports and coverage.

The findings of Abdulrahman et al. (2023) suggest that artificial intelligence applications have made a difference in delivering timely notifications to users, containing urgent and essential news around the clock, thereby enhancing the effectiveness of electronic media operations. Consequently, the use of AI technologies has transformed the presentation of news content on news sites, enabling instant publication without human intervention (Galily, 2018). This highlights the potential of artificial intelligence to significantly impact digital media, influencing news platforms, methods of information transmission, data analysis, and the identification of individual interests and media trends (Makhzoum, 2023).

One of the most significant benefits of using AI applications in journalism is the support of daily routine tasks, including notifications about events, automated content schedules, and the generation of stories and news articles. Among the latest AI-generated algorithms is "GOT 3", developed by OpenAI, which aims to produce news articles indistinguishable from those written by humans. (Stray, 2021).

The most commonly used technologies in news sites include virtual reality, augmented reality, robot journalists, blockchain, and programs to verify the credibility of news, such as the "Bot Slater" program. Additionally, the robot journalist technology known as "Reporter Mate", used by the British Guardian newspaper, aims to transform information and data into ready-to-publish articles and news reports. The Washington Post's Heliograph bot algorithm was able to produce more than 800 news reports and articles in a very short time back in 2016 (Al-Sharif, 2021).

From the above, we can conclude that there is a pressing need to rely on artificial intelligence technologies for electronic news sites due to their ability to save time and effort, keep up with current events urgently and continuously, and collect and process information and data within seconds. This enhances the effectiveness and efficiency of digital journalism, making it more suitable for the technological era we live in (Habes et al., 2021, 2023).

Haddad's (2023) study indicates that one of the primary challenges in implementing AI technologies is the limited understanding of algorithm keys and a lack of experience in handling them. Additionally, inadequate cyber protection to guard against hacker attacks poses a significant obstacle.

According to a study by Shehata (2023), one of the most critical challenges in applying AI algorithms to electronic news sites is the risk of hacking and cyberattacks, which can result in the spread of fake news among the public. Field visits by researchers to Jordanian news sites revealed a strong inclination to use AI technologies in news production. Some technical tools are already in use, such as the RSS service for news site subscribers. However, there appears to be a lack of familiarity with the latest AI technologies globally due to limited experience with those programs and tools. Editors and site managers tend to prioritize gathering news from major news agencies and official TV networks over implementing advanced AI tools.

Therefore, it is crucial to investigate the extent to which Jordanian e-news sites rely on artificial intelligence applications and how they are utilized in news content.

2. Strong trend among Jordanian digital news platforms and websites towards the use of artificial intelligence technologies in journalism

2.1. Theoretical background

2.1.1. The extent to which news sites rely on artificial intelligence applications

Recent estimates indicate a strong trend among Jordanian digital news platforms and websites towards the use of artificial intelligence technologies in journalism. AI's capacity to save time and effort, improve performance, and instantly reformat articles and news is highly valued. It can automatically translate news into several languages, process data, numbers, and information, and convert them into articles—whether political, economic, or social—in just a few seconds. As a result, many agencies have adopted AI tools. The study by Masoudi (2020) highlighted that some Jordanian news sites have relied on robot journalist tools and algorithms, replacing reporters and editors to save time, effort, and costs. Additionally, 22% of Jordanians believe that AI will be more widely implemented in Jordan in the future, potentially replacing human roles (Habes et al., 2024).

The Associated Press has also predicted that AI will become a crucial tool globally, responsible for automatically generating news content, analyzing data, identifying patterns and trends, distinguishing real news from fake, and converting the most searched and widespread data into narrative texts for publication (Al-Sharif, 2021).

The manifestations of the reliance of news sites on AI applications include the following:

1) Interactive services: A feature that allows the public to participate in news production and comment on content and urgent events.
2) Live streaming service: An interactive feature that enables the news site to broadcast live images and sound from the event location, whether it is political, social, economic, or other types of events.
3) Breaking news service: A feature provided by the news site to send urgent and immediate news through text messages to mobile phones.
4) RSS Service: A feature offered by the news site to send breaking news via email to all site visitors.
5) News feed service: A feature provided by the news site to deliver breaking and most-read news through the news site's mobile app or news applications from the App Store (Salloum et al. ,2021).

Researchers' perspective on the dependence of news sites on artificial intelligence

Through field visits conducted by the researcher with heads and editors of news sites, it was found that there is significant reliance on a range of artificial intelligence technologies, including:

1) Downloading news onto news sites through news texts, photos, infographics, reports, or filmed videos.
2) Using news content reformulation tools through text rewording programs.
3) Employing artificial bot tools to translate news content into multiple languages.

4) Not relying on official global tools to differentiate between true and false trending news.
5) Using RSS services to send news via email to all audience members subscribed to the news site.

2.1.2. The success of employing artificial intelligence applications in developing electronic news content

The success of employing artificial intelligence applications as a key tool in the development of news content depends on several factors:

1) The availability of technical programs, such as content reworking tools, article translation software, or programs that convert video into news texts (Habes et al., 2023).
2) The news site's possession of technical and computer equipment that enables the integration of AI tools with news content.
3) The technical expertise of the news site's staff, which determines their ability to effectively use these technologies.
4) The level of complexity in the news services provided, which depends on the ability and scope of AI technology implementation (Ismail, 2022).

From the above, we conclude that the availability of these factors directly contributes to improving the work of heads and editors of news sites in Jordan. Among the most significant factors for achieving optimal success with AI applications is the presence of an integrated experience among news site staff, their high level of media and technical skills, and the availability of a news site with various features and services that cater to the interests of the Jordanian public.

2.1.3. The challenges facing electronic news websites in light of the use of artificial intelligence applications

Electronic news websites have become one of the most important sources for selecting news, but they face several challenges in the application of artificial intelligence technologies, including:

1) Human constraints: The lack of specialized staff responsible for activating AI technologies, and the reliance on the subjective experience of editors and employees, may result in delays in the implementation and activation of AI, as well as a lack of its integration.
2) Technical obstacles: A lack of technical expertise in using paid programs and activating them on news sites is one of the major challenges that may not be addressed by all news websites.
3) Material constraints: The reliance on self-efforts and limited budgets for news websites, which affects spending on equipment, servers, and the purchase of AI-based programs, is a significant challenge.
4) Cyber obstacles: A lack of attention to cybersecurity for news websites, along with the risk of hacking, can increase the likelihood of website shutdowns or the disruption of one or more AI services.
5) Development obstacles: The absence of a dedicated department within the news website for research and development on global AI advancements can hinder the ability to address problems promptly and keep pace with global technological developments (Mohamed, 2021).

Zalova and Sunbul (2024) points out that there are key methods to address the challenges faced by news site workers due to the application of artificial intelligence. These include enhancing the technical and editorial competencies of reporters, editors, and site heads, as well as continuously developing skills to keep up with new advancements in information and communication technology and various electronic applications.

Therefore, based on the above, we conclude that the presence of numerous challenges—particularly human and technical obstacles—reduces the likelihood of successfully implementing artificial intelligence applications on news websites. Even when AI is used, it often occurs in an unspecialized manner by the heads and editors, without the necessary specialized training in these technologies.

2.2. Review of related literature

Al-Qadi (2024) conducted a study aimed at monitoring and analyzing the opinions of both callers at Egyptian news sites and academic experts regarding the future of these sites under the application of artificial intelligence. The study also sought to reveal the positive and negative effects of these AI applications on the environment of Egyptian news sites. The sample consisted of 120 individual editors from various Egyptian news sites, including Cairo 24, Egypt Times, Awan Misr, Masrawy, Vito, Al-Bawaba News, Akhbar Al-Youm, and Al-Ahram, with ten editors from each site. Additionally, 40 experts from the fields of constitution law, parliament, and tourism (including experts from the Daily News website specialized in tourism) were included in the sample. The study found that AI applications were able to translate news into several languages, deliver breaking news, and analyze data for the news site. However, one of the disadvantages identified was the limited number of editors, workers, and technicians, which, coupled with an inability to distinguish true from false news, hindered the full potential of AI implementation.

In a similar vein, Haddad (2023) conducted a study to assess the extent of artificial intelligence technology usage in Jordanian press institutions and its impact on the professional practice of journalists, as well as the readiness of these institutions to employ AI and the necessary skills for it. The study also explored the areas where these technologies could be applied. Using the survey methodology, the study sample consisted of 300 journalists. The results revealed that the majority of journalists (64%) believed that Jordanian press institutions were somewhat ready to employ AI technologies. The most significant areas for AI application, as identified by the respondents, were the collection and editing of journalistic material (62%).

Ismail (2022) conducted a study aimed at revealing journalists' attitudes towards the use of artificial intelligence technologies in the development of journalistic content on Egyptian newspapers and news websites. The study also explored the reality of AI applications and assessed their success. The researcher found that the use of artificial intelligence technologies is one of the key factors behind the success in the development of journalistic content and websites. However, more than a quarter of the study participants believed that the use of AI technologies had a negative impact, particularly on the number of journalists employed by Egyptian news sites.

Sharadga et al. (2022) conducted a study to examine journalists' attitudes towards the use of artificial intelligence technologies in the newsrooms of Jordanian television. The researchers used a descriptive exploratory approach, and the study sample consisted of 106 newspaper editors. A questionnaire was used to gather information. The findings revealed that the use of artificial intelligence technologies had a significant impact on journalists' perceptions of their readiness in editorial rooms and contributed to improving the application of these technologies.

Sofian et al. (2021) carried out a study aimed at revealing the development of media work on news websites. The researcher employed both survey methods and content analysis to study media sites, with a focus on the TSA and ENTV sites. The results indicated that news sites had embraced digital integration, particularly through the introduction of video and infographics technology, which was primarily used to attract viewers, capture public attention, and share news.

Badawi (2021) conducted a study aimed at exploring how robot journalism is applied and its production mechanisms at Cairo 24 news site, which was the first Egyptian site to implement this model of artificial intelligence technologies. The study sought to identify the benefits or value that robot journalism added to the site and examine the new practices it introduced, as well as the relationship between robot journalism and human journalists. The researcher found that robot journalism is a method used by Egyptian news sites to provide information in a way that is more efficient and user-friendly than human-produced content. This method adheres to the professional and ethical standards of the press. Cairo 24 news site achieved its goals of implementing robot journalism at a high level.

Kumar (2020) also conducted a study to assess the impact of artificial intelligence on the news site of the Chinese news agency Xinhua. The researcher used a survey methodology, with a study sample consisting of 25 journalists from the agency. In-depth interviews were conducted to collect data. The study found that artificial intelligence had made significant contributions to journalism, particularly in the computerized collection and editing of information and data without the direct involvement of editors. AI was also able to reshape news stories by presenting them in a three-dimensional graphic-like format, which allowed viewers to experience the news in a more immersive way.

Saad and Talat (2020) carried out a study to investigate the impact of artificial intelligence technologies and the use of robots on news work, addressing several key questions, including whether artificial intelligence could replace humans in the media industry. The researchers used a survey approach in their study. The results indicated that approximately 15% of reporters worldwide believed that artificial intelligence could replace humans, while about 9% of respondents believed that AI would never fully replace humans in the media industry, emphasizing that humans will continue to have a significant presence, power, and influence despite the advancement of technology in electronic news.

Tahat et al. (2024) conducted a study aimed at exploring the impact of modern communication technologies and artificial intelligence on journalistic work and the performance of journalists. The study focused on the role of artificial intelligence in the collection and dissemination of information. The researchers employed a case study approach, selecting the British Daily Express press institution for an in-depth

analysis to examine the influence of artificial intelligence on journalistic tasks. The study's findings highlighted that artificial intelligence played a key role in the distribution and dissemination of content provided by the news organization, underscoring the importance of leveraging AI in the news dissemination process.

3. Methodology

3.1. Methodology of the study

The researchers employed the media survey method, as it is considered the most appropriate approach for this study. This method allows for an effective collection of data that reflects the study's objectives.

3.2. Study population

The study population consists of all the heads and editors of electronic news websites in Jordan.

3.3. Sample of the study

The study sample comprised 45 presidents and editors of electronic news websites in Jordan. The questionnaire was distributed electronically via Google Forms. The researchers contacted the sample members through the social networking platform "WhatsApp", and the questionnaire link was sent to the participants. Responses were received from all members of the sample.

3.4. Instruments of the study

The primary instrument for data collection was a questionnaire, which was designed based on previous studies and by reviewing relevant instruments and metrics used in similar research. The questionnaire consisted of three sections with a total of 36 statements.

The questionnaire was divided as follows:

1) Demographic data: The first section collected demographic information about the study participants, including variables such as gender, academic qualification, years of service, job title, and any training courses attended.
2) Main content: The second part consisted of the three main sections of the questionnaire, which included 36 statements.

The researchers used a five-point Likert scale to measure responses. The scale ranged from 1 to 5, with the following response options:

(1) Never
(2) Rarely
(3) Sometimes
(4) Often
(5) Always

The value of (5) indicated "always", and the value of (1) indicated "never".

3.5. Reliability of the instrument

To ensure the reliability of the instrument, internal consistency reliability was calculated using Cronbach's Alpha. **Table 1** illustrates this:

Table 1. Instrument reliability coefficient using Cronbach's Alpha.

Instrument	Cronbach's Alpha Coefficient
Dependability Range	0.84
Artificial Intelligence Applications and Uses	0.89

Statistically significant at the significance level ($\alpha \leq 0.05$).

Table 1 shows that the reliability coefficients for the instrument domains were high, with values ranging from 0.84 to 0.89, indicating that the instruments have high reliability.

3.6. Validity of the instruments

The validity of the first tool (the extent to which Jordanian electronic news sites rely on artificial intelligence applications).

The validity coefficients of this tool have been extracted in two ways:

3.6.1. Test and retest method (test-retest)

Where the validity coefficient of the instrument was found, using the test-retest method, where the scale was applied to (10) people from outside the study sample, and re-applied to the same survey sample members with a time difference of two weeks between the first application and the second application to verify stability.

3.6.2. The method of internal consistency using the Cronbach Alpha equation: (Cronbach Alpha)

Which measures the quality of the paragraphs and the consistency of the answers of the study sample on all paragraphs of the tool, and **Table 2** shows the validity coefficients of the study tool.

Table 2. Constancy coefficients by the Cronbach's Alpha internal consistency method (Cronbach's Alpha) and the retest-retest method).

The Instrument	test-retest reliability	Internal consistency method Cronbach's Alpha
The first area: The extent to which Jordanian e-news sites rely on and use artificial intelligence applications.	0.965	0.899
The second area: The success of employing artificial intelligence applications in developing electronic news content	0.936	0.947
The third area: The challenges facing electronic news sites in light of the use of artificial intelligence applications	0.854	0.641
The fourth area: Security and rules of digital behavior	0.981	0.950

It turns out from **Table 2** that the values of the internal consistency coefficient "Cronbach Alpha" range (0.641–0.950), and it also turns out that the values of constancy by the test-retest) method (0.854–0.981) range (0.854–0.981) and these values are a function of constancy and are sufficient for the purposes of the current study.

3.6.3. Scale correction

To measure the sample members' ratings on the items of the Creativity Motivation Scale, the "Five-Point Likert Scale" (Always, Often, Sometimes, Rarely, Never) was used. Accordingly, weights were assigned to the study sample's responses to measure the level as follows:

The following scale was adopted for the purposes of result analysis:

From 1.00 to 2.33—Low

From 2.34 to 3.67—Intermediate

From 3.68 to 5.00—High

Category length = upper limit-minimum (for weights) = 1–5 =1.33

Number of assumed categories 3

3.7. Statistical analysis

To analyze the data, the researcher applied the following statistical methods to identify the characteristics of the study population, assess the validity and reliability of the tools, and answer the study's questions:

1) Frequencies and percentages: These were used to describe and identify the characteristics of the study sample.
2) Arithmetic mean: The arithmetic mean was calculated to determine the extent to which participants' opinions were high or low regarding each statement related to the study variables and main domains. It was also used to rank the statements based on their mean scores.
3) Standard deviation: Standard deviation was employed to measure the variability of participants' responses to each statement. It indicates the degree of dispersion or concentration of opinions. The closer the standard deviation is to zero, the more concentrated the opinions are. This measure was also used to rank statements based on their mean scores, prioritizing those with less dispersion when means were equal.
4) Cronbach's Alpha coefficient: This coefficient was used to assess the reliability of the study tools, indicating the internal consistency of the questionnaire items.

The study utilized a five-point Likert scale, where each item was assigned one of five levels:

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

These responses were numerically represented as (1, 2, 3, 4, 5), respectively. The following scale was used to interpret the results:

1) Calculation of scale ranges: The equation for the statistical criterion was:

(Maximum Value–Minimum Value)/Number of Levels = (5–1)/5 = 0.8\text {(Maximum Value–Minimum Value)}/\text {Number of Levels} = (5–1)/5 = 0.8

(Maximum Value–Minimum Value)/Number of Levels = (5–1)/5 = 0.8

- First range: 1 – 0.8 = 1.81 – 0.8 – 1.81 ÷ 0.8 = 1.8

2) Second range: 1.9 + 0.8 = 2.7
3) Third range: 2.61 + 0.8 = 3.41
4) Interpretation of scores:
   - A score of 1.8 or below indicates a low level.
   - A score between 1.9 and 2.6 indicates a moderate level.
   - A score of 2.61 or above indicates a high level.

4. Presentation of results

This chapter presents the findings of the study after the application of its tools, data collection, and statistical analysis. The purpose was to measure the extent to which Jordanian online news websites rely on artificial intelligence applications. The results of the study are presented below in accordance with the order of the research questions.

4.1. Results related to the first question: "To what extent do Jordanian e-news websites rely on and use artificial intelligence applications"?

To answer this question, the arithmetic means and standard deviations of the estimates from the study sample were calculated for the dimensions as a whole and then for the individual statements within each dimension separately. The results were as follows:

Table 3. Arithmetic averages and standard deviations of domains.

Dimensions	Arithmetic mean	standard deviation
The extent to which Jordanian E-News websites rely on and use artificial intelligence applications.	3.96	0.719
The extent of the success of employing artificial intelligence applications in the development of electronic news content	3.90	0.710
The challenges facing electronic news sites in light of the use of artificial intelligence applications	3.78	0.805

In descending order by arithmetic averages.

Table 3 shows that the arithmetic means range between (3.78 and 3.96), with the area of reliance on and use of artificial intelligence applications by Jordanian electronic news sites ranking first, with the highest arithmetic mean of (3.96) and a standard deviation of (0.719), indicating a "high" level. In contrast, the challenges facing electronic news sites in light of the use of artificial intelligence applications ranked last, with an arithmetic mean of (3.78) and a standard deviation of (0.870), also indicating a "high" level.

4.1.1. The first area: The extent to which Jordanian e-news sites rely on and use artificial intelligence applications

Table 4 shows that the arithmetic means ranged between (3.54 and 3.98). Paragraph (4), which states "based on artificial intelligence algorithms in delivering news instantly to the public", ranked first with an arithmetic mean of (3.98) and a standard deviation of (0.961), indicating a "high" score. Paragraph (9), which states "rely on artificial intelligence applications to process and republish incoming news", ranked last with an arithmetic mean of (3.54) and a standard deviation of (1.291),

indicating an "average" level. The overall arithmetic mean of the field was (3.78), with a standard deviation of (0.805), indicating a "high" level.

Table 4. Arithmetic averages and standard deviations for paragraphs of the field the extent to which Jordanian e-news sites rely on and use artificial intelligence applications.

Paragraphs	Arithmetic mean	standard deviation
You are based on artificial intelligence algorithms to deliver news instantly to the public.	3.98	0.961
You use multiple applications and links them to the news site to spread the content further.	3.93	0.978
In your business, you rely on artificial intelligence applications in the news site.	3.91	1.069
You can handle the constant new updates about artificial intelligence applications.	3.88	1.155
Artificial intelligence applications are used to identify the most popular hashtags on electronic news sites.	3.87	1.108
Continuously improve the news website based on artificial intelligence applications.	3.81	1.056
Artificial intelligence applications are used to find the most searched words on electronic news sites.	3.80	1.103
Advanced technical devices are used to keep pace with the development of artificial intelligence applications in electronic news work.	3.71	1.028
The technical commands written and directed on artificial intelligence applications are considered to be fair, accurate, free from subjectivity and transparent.	3.68	1.256
you rely on artificial intelligence to accurately collect information about the news.	3.66	1.072
They are based on artificial intelligence applications to differentiate between true news and fake news.	3.60	1.204
you rely on artificial intelligence applications to process and republish incoming news.	3.54	1.291
Total	3.78	0.805

Ranked in descending order by arithmetic mean.

4.1.2. The second area: The success of employing artificial intelligence applications in developing electronic news content

Table 5 shows that the arithmetic means ranged between (3.81 and 4.13). Paragraph (25), which states "you see that the use of artificial intelligence applications in the development of electronic news content still needs time", ranked first with an arithmetic mean of (4.13) and a standard deviation of (1.019), indicating a "high" score. Paragraph (20), which states "artificial intelligence applications allow data analysis and access to accurate digital data", ranked last with an arithmetic mean of (3.81) and a standard deviation of (1.091), indicating a "high" degree. The overall arithmetic mean of the field was (3.90), with a standard deviation of (0.710), indicating a "high" degree.

Table 5. Arithmetic averages and standard deviations for paragraphs for the field the extent of success of employing artificial intelligence applications in the development of electronic news content.

Paragraphs	Arithmetic mean	standard deviation
you see that the use of artificial intelligence applications in the development of electronic news content still needs time.	4.13	1.019
Artificial intelligence applications use easy language when publishing news on the news website.	4.13	1.166
Artificial intelligence applications can improve the investigation and analysis of news.	4.09	1.033
Artificial intelligence applications help the heads and editors of sites keep track of new information relevant to the topic of publication.	4.03	1.032

Table 5. (*Continued*).

Paragraphs	Arithmetic mean	standard deviation
Employees of the news site are able to discover new ways around the use of artificial intelligence applications.	3.99	1.032
Artificial intelligence applications help to convert the most searched news and spoken words into news text and convert text to audio and video.	3.98	1.099
Artificial intelligence applications can improve the ability to interact and respond to the audience automatically.	3.97	1.077
Artificial intelligence applications facilitate interaction between the working group within the news site.	3.96	1.081
Artificial intelligence applications facilitate the processes of developing electronic news content.	3.94	1.026
Artificial intelligence applications contribute to the drafting of articles that include all news items.	3.93	1.113
Artificial intelligence applications contribute to the availability of multiple options and provide news in an urgent telegram format on the website.	3.90	1.115
Artificial intelligence applications save more time and effort to perform complex tasks.	3.82	1.053
Artificial intelligence applications enable data analysis and access to accurate digital data.	3.81	1.091
Total	3.90	0.710

In descending order by arithmetic averages.

4.1.3. The third area: The challenges facing electronic news sites in light of the use of artificial intelligence applications

Table 6 shows that the arithmetic means ranged between (3.69 and 4.08). Paragraph (35), which states "you can use and program electronic news sites professionally", ranked first with an arithmetic mean of (4.08) and a standard deviation of (0.972), indicating a "high" degree. Paragraph (37), which states "you see that Arab artificial intelligence applications cannot compete with Western applications in working with news sites", ranked last with an arithmetic mean of (3.69) and a standard deviation of (1.052), also indicating a "high" degree. The overall arithmetic mean of the field was (3.88), with a standard deviation of (0.990), indicating a "high" degree.

Table 6. Arithmetic averages and standard deviations of paragraphs for the field challenges facing electronic news sites in the light of the use of artificial intelligence applications.

Paragraphs	Arithmetic mean	standard deviation
You stop working on the news website when a malfunction occurs in artificial intelligence applications.	4.08	0.972
You see a lot of problems that you face on the news website due to the use of artificial intelligence applications.	4.02	1.000
You are facing a lack of training courses from experts on the use of artificial intelligence applications in working with electronic news sites.	4.00	1.082
Artificial intelligence applications lack interaction with readers for news appropriately.	3.95	0.955
Artificial intelligence applications are able to handle Press news and publish it on the news site accurately.	3.94	0.909
It has the ability to verify the authenticity of breaking news received via artificial intelligence applications.	3.91	0.927
You may solve hacking and hacking problems with the team collectively caused by the use of artificial intelligence applications.	3.89	0.945
you have the ability to train the news team on the use of artificial intelligence applications.	3.88	0.997

Table 6. (*Continued*).

Paragraphs	Arithmetic mean	standard deviation
You see a lot of problems that you face on the news website due to the use of artificial intelligence applications.	3.86	0.998
you believe that artificial intelligence applications have led to a reduction in the number of employees in traditional media organizations.	3.83	0.999
You can use and program electronic news websites professionally.	3.74	1.021
you have the technical skills to use computer devices while working on the news website.	3.73	1.025
you feel that AI applications still need to be developed significantly in the depth and complexity that characterizes human intelligence.	3.71	1.048
You see that Arab artificial intelligence applications cannot compete with Western applications in working with news sites.	3.69	1.052
Total	3.88	0.990

In descending order by arithmetic averages.

5. Conclusions and future research

Based on the above results of the study, the following conclusions were reached:

Many press and media sites have introduced artificial intelligence systems to enhance the services they provide to the public. Numerous electronic media sites have shown a keen interest in data analysis tools to optimize their media services. Electronic news sites in Jordan are particularly focused on boosting their capabilities in using artificial intelligence technologies to improve the services they offer to the public. Most of these sites have expressed readiness to develop plans for enhancing cybersecurity systems to prevent hacking attempts and protect their data and artificial intelligence programs that operate around the clock.

Artificial intelligence systems in media organizations aim to enhance the news experience for users, enriching media services with modern communicative content. This shift also requires preparing and training new media leaders to create electronic news content in line with the principles of Digital Journalism, ensuring high levels of accuracy, craftsmanship, and mastery in the news they produce. Additionally, there is a pressing need to develop specialized human resources capable of handling modern programs and technologies, to meet the requirements of electronic news websites. This will ultimately improve the quality of digital media institutions in Jordan, positioning them to compete on a global scale.

It is also essential to focus on identifying modern trends and adopting a forward-thinking approach to integrating artificial intelligence technologies into the work of news sites. This will enable us to elevate Arab and Jordanian news content to the level of leading nations in the modern world.

Author contributions: Conceptualization, HA; methodology, HA; formal analysis, MAH; resources, HA; data curation, MAH; writing—original draft preparation, HA; writing—review and editing, RM; funding acquisition, HA, MAH and RM. All authors have read and agreed to the published version of the manuscript.

Conflict of interest: The authors declare no conflict of interest.

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