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Indicators of Media Literacy of Uzbek Media Representatives Related to the Use of Artificial Intelligence

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Abstract

The article demonstrates that the use of artificial intelligence in Uzbek journalism, while facilitating journalists' work, has also become a factor in amplifying disinformation. Based on a survey conducted among 124 journalists and media representatives, the study examines the potential changes artificial intelligence has brought to the professional activities of Uzbek journalists today, as well as the media literacy levels of industry professionals related to the use of artificial intelligence. The data obtained from the survey analyzes the professional integrity of Uzbek journalists in their creative process during the era of artificial intelligence, their level of awareness regarding the risk of disinformation when working with AI, and the impact of neural networks on the activities of media representatives. The findings can be utilized in developing legal and ethical standards for the use of artificial intelligence in journalistic practices, as well as in enriching the content of journalism education and professional development courses.

Keywords: artificial intelligence, artificial journalism, disinformation, dipfake, synthetic content, artificial intelligence literacy, post-digital critical media literacy.

1. Introduction

M.G. Shilina, I.I. Volkova, A.Y. Bombin and A.A. Smirnova, reconsidering the phenomenon of artificial intelligence as artificial communication, propose the term "artificial journalism" (Shilina et al., 2023). For the first time, their research attempts to illuminate various conceptual nuances of artificial intelligence-based journalism, examining how it influences social dynamics and alters the main technological and communicative attributes of this field. In the era of artificial intelligence, knowing how to use it rationally and combating the disinformation it generates and its consequences are becoming essential skills that journalists must possess in today's climate of uncertainty and information chaos. While artificial intelligence facilitates journalists' work, it also leads to a decrease in their creative abilities, the emergence of intellectual laziness, an increase in the share of unreliable information in the information sphere, and a proliferation of content that lacks human emotional intelligence, resulting in less impactful and effective communication.

The Uzbek media, as an integral part of global journalism, is not isolated from these processes. The active use of artificial intelligence has begun in journalistic practice in Uzbekistan. Today, the number of journalistic materials where artificial intelligence serves as an information source has increased. The process is straightforward. A journalist poses questions to artificial intelligence such as "How do you envision Uzbekistan's future?," "Which professions are developing rapidly in Uzbekistan?," and "Which sectors would yield returns on investment?" Then, the journalist prepares an article based on the responses generated by neural networks.

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In particular, the rapid growth of electronic media has transformed journalistic work into a technical process, necessitating reliance on artificial intelligence for the production of large amounts of information. In recent years, the number of mass media outlets in Uzbekistan has been increasing sharply.

Table 1. The total number of registered local mass media outlets in Uzbekistan

The total number of registered local mass media outlets in Uzbekistan			
Type of media	2016 year	2024 year	The growth rate is in %
	1514	1349	-15
News paper	309	866	+180
Magazine	15	21	+40
Bulletin	6	6	0
News Agency	65	89	+36
TV channel	35	29	-25
Radio	395	738	+86
Internet site	1514	2349	+55

Table 2. The total number of foreign mass media outlets registered in Uzbekistan

The total number of foreign mass media outlets registered in Uzbekistan		
2016 year	2024 year	The growth rate is in %
30	65	+116.67

Another indicator not reflected in the tables is the number of bloggers, who play a significant role in disseminating information on social media. While there were 50 active bloggers in 2016, their number exceeded 1,200 in 2024, showing an increase of almost 2,400 percent. As the number of mass media outlets grows, there is an increasing need to simplify and technologize their work and creative processes. The use of AI-based tools for content creation to populate media platforms is on the rise. On one hand, this appears to be a natural and normal progression, and the path of technological development cannot be blocked, making its influence on the creative process difficult to manage. However, another issue emerges: the question of reliability of information generated by artificial intelligence. In the research conducted by A. Fernandez, artificial intelligence is shown as the main cause of the emergence of deep fakes, and the issue of its control is raised (Fernandez, 2021).

In particular, J. Washington's scientific analyses on the potential of integrating artificial intelligence with educational practices and media literacy as a possible solution to mitigate the impact of false information on society further underscore the relevance and significance of our research (Washington, 2023). P. Tiernan, E. Costello, E. Donlon, M. Parysz, M. Scriney analyze the definitions of information and media literacy as well as the potential impact of artificial intelligence on them (Tiernanye et al., 2023). J. Walker, G. Thuermer, J. Vicens, E. Simperl examine how well artificial intelligence aligns with existing approaches to combat disinformation and how it addresses the key challenges in a context where disinformation, in its various forms, is becoming an increasingly serious and growing problem for society (Walker et al., 2023).

These analyses also demonstrate the necessity of studying the media literacy, critical thinking, and information verification competencies of journalists and other media professionals in working with artificial intelligence for each country, including Uzbekistan. In other words, are information producers prepared to work with artificial intelligence? Are they aware of the potential problems that neural networks may cause? Are there any gaps in their knowledge? These questions need to be addressed. It is particularly crucial for journalists to disseminate reliable information and engage in proper communication with artificial intelligence, especially in the context of Uzbekistan, where media and information literacy is not actively taught in general secondary education schools.

2. Materials and methods

One of the main trends in the modern media landscape is the application of artificial intelligence in journalistic activities. To study its current state, materials from Uzbekistan's mass media were

analyzed using the content analysis method. The findings revealed that journalists are increasingly turning to artificial intelligence for information gathering. This process intensified and became a trend after November 2023, when OpenAI, the company that developed ChatGPT, one of the most actively used neural networks, included Uzbekistan in the list of countries where its service operates.During the content analysis process, it became apparent that materials related to artificial intelligence could be divided into two categories. The first category involves an increase in news content related to artificial intelligence topics, while the second comprises information where artificial intelligence itself is the source. Among these materials, those of a predictive nature constitute a significant portion.

In 2024, one of Uzbekistan's official media outlets, the National News Agency of Uzbekistan, developed a special AI-powered robot reporter named Sobira Kholdorova. This correspondent delivers official information and breaking news in nine languages (Uzbek, English, Russian, French, Arabic, Chinese, German, Spanish, and Kazakh). The artificial intelligence system, initially launched as a pilot project, will gradually expand its capabilities in producing video reports. This marks a significant step in the application of artificial intelligence in journalism. The National News Agency of Uzbekistan will also provide a means to verify the authenticity of videos in case of potential fake video circulation. To achieve this, each video will be assigned a special QR code. By activating the link embedded in this QR code, users will be able to access the corresponding video text on the official UzA website.It was announced that if a video created using artificial intelligence does not contain a QR code or if the link in it does not lead to the UzA website, then this video is considered fake. This also serves as an example of the constant threat of disinformation in the context of artificial intelligence and the necessity to verify information.

Based on the study of the topic, preliminary observations, and initial data obtained, a questionnaire consisting of 28 questions was developed. The survey aims to examine media representatives' relationship with artificial intelligence, analyze the impact of neural networks on the creative process, and assess their advantages and disadvantages. Five of the questions are introductory, control, and concluding questions, while 23 are main questions. The questions were designed in two directions: the first aims to determine media representatives' attitudes towards artificial intelligence, and the second focuses on evaluating their ability to use artificial intelligence. The second direction is particularly significant and can be described using concepts such as artificial intelligence literacy or post-digital critical media literacy.

124 participants from all regions of the republic took part in the survey. Of these, 50 respondents (40.3 %) were aged 18–25, 38 respondents (30.6 %) were aged 25–35, 27 respondents (21.5 %) were aged 35–45, 8 respondents (6.5 %) were aged 45–60, and 1 respondent (0.8 %) was over 60 years old. Among the participants, 51 (41.1 %) were men and 73 (58.9 %) were women.

The breakdown by regions is shown in Table 3. The city of Tashkent, the Republic of Karakalpakstan, and Tashkent region had higher participation compared to other regions.

Table 3. Distribution of survey participants by regions

Region	Number of participants	%
Tashkent city	55	44,4
Andijan region	5	4,0
Bukhara region	7	5,6
Fergana region	5	4,0
Jizzakh region	7	5,6
Khorezm region	1	0,8
Namangan region	3	2,4
Navoi region	-	-
Kashkadarya region	4	3,2
Republic of Karakalpakstan	15	12,1
Samarkand region	6	4,8
Syrdarya region	2	1,6
Surkhandarya region	5	4,0
Tashkent region	9	7,3

The survey results were converted into percentages, and the journalists' experience with artificial intelligence, their areas of focus, and their media literacy indicators when working with neural networks were determined.

3. Discussion

The central issue of the discussion is the emergence of concerns regarding the proliferation of disinformation and undesirable forms of information in society through the automation of information creation. It is worth noting that neural networks have significantly impacted the process of information generation in the field of journalism. The lack of regulation concerning legal and ethical issues related to journalists' use of artificial intelligence in their professional activities has once again highlighted the necessity for a more in-depth study and analysis of this topic. The social responsibility of journalists for the truthfulness and objectivity of the information they disseminate is being extensively discussed in numerous scientific researches. For example, C. Porlezza's research indicates that there is an insufficient legal framework for the application of artificial intelligence in mass media (Porlezza, 2023). The study by A. Iqbal and colleagues examines the negative impact of fake news on society and explores fact-checking issues within the context of artificial intelligence (Iqbal et al., 2023). As shown in the study by J. Stewart, N. Lyubashenko, G. Stefanek, detecting fake news created by artificial intelligence is a complex task. The research indicates that using modern tools such as pre-trained transformers for large language models like BERT can effectively classify articles generated by GPT. However, these tools are less effective in classifying fake news articles that were not created by GPT (Stewart et al., 2023).

P. Jandrić's research presents the concepts of post-digital critical media literacy and artificial intelligence bias, which underscores the relevance of the topic (Jandrić, 2019). J. Washington has studied the prospects of using artificial intelligence and media literacy education in combating disinformation and fake news. The study emphasizes that integrating artificial intelligence with educational practices and media literacy training offers a potential solution to mitigate the effects of false information on society (Washington, 2023).

In A. McCosker's research, the socialization of artificial intelligence is studied, and the media formed using visual data and machine learning methods are called synthetic (McCosker, 2024). Regulatory measures, technical oversight, and enhancing digital or media literacy are cited as protective measures. This article raises the question of which level of literacy can mitigate the harm caused by deepfakes, and proposes data literacy as a solution. According to the analysis in this study, GitHub and YouTube are facilitating the socialization of artificial intelligence and the formation of culture.Additionally, a significant portion of research is dedicated to identifying deepfakes, which are the most harmful form of videos generated by neural networks (Bansal et al., 2023; El-Gayar et al., 2024; Mary, Edison, 2023; Pant et al., 2024; Ram et al., 2023; Suratkar et al., 2023 and others). These analyses also address new forms of disinformation brought about by artificial intelligence.

As evident, the application of artificial intelligence in journalistic activities is not only a practical phenomenon and a problem that requires solutions, but also a highly relevant scientific topic. Furthermore, various concepts and interpretations in scientific research have demonstrated that we can consider literacy in the field of artificial intelligence as a distinct type of media literacy.

In the context of active artificial intelligence usage worldwide and in Uzbekistan, its objectivity and reliability are being called into question. Texts generated by neural networks often contain factual errors and misinterpretations of context.These shortcomings are particularly prevalent in data-driven artificial intelligence models developed before 2021. To minimize errors, human oversight is essential. Humans approach the evaluation of AI-generated media products through media literacy and critical thinking. In this sense, artificial intelligence literacy is an integral component of general media literacy.

4. Results

One of the control and filtering questions in the survey aimed at determining the use of artificial intelligence and AI-related media literacy indicators among Uzbek media professionals was "In which type of media do you work?" The responses revealed that the majority of respondents work in newspapers, magazines, and Internet websites. The next most common areas of employment for media representatives were social media, TV, and PR services (see Figure 1).

To the question "Do you use artificial intelligence in your journalistic activities?," 64.5 % answered "Yes," while 35.5 % responded "No." Nearly a quarter of young people aged 18-25 actively use artificial intelligence for text generation, photo/video production, translation, and creating social media content. 70 percent of journalists aged 25-35 use it for purposes such as information analysis and creating infographics. As respondents' age increases, the rate of neural network usage decreases. Half of those aged 35-45 turn to it for translation purposes, while 60 % of those aged 45-60 use artificial intelligence for information searches. Those over 60 generally do not use it.Consequently, young people (18-35) more frequently use artificial intelligence to enhance speed in the creative process. Older adults (45+) pay more attention to traditional methods of obtaining information and issues of reliability.

Nearly 80 % of those working in the fields of Internet websites and SMM actively use artificial intelligence, while its utilization in newspapers, magazines, TV channels, PR, and educational processes is gradually decreasing. Employees working in newspapers and magazines view artificial intelligence as an "assistant," whereas in television and radio channels, human involvement remains necessary for many processes.

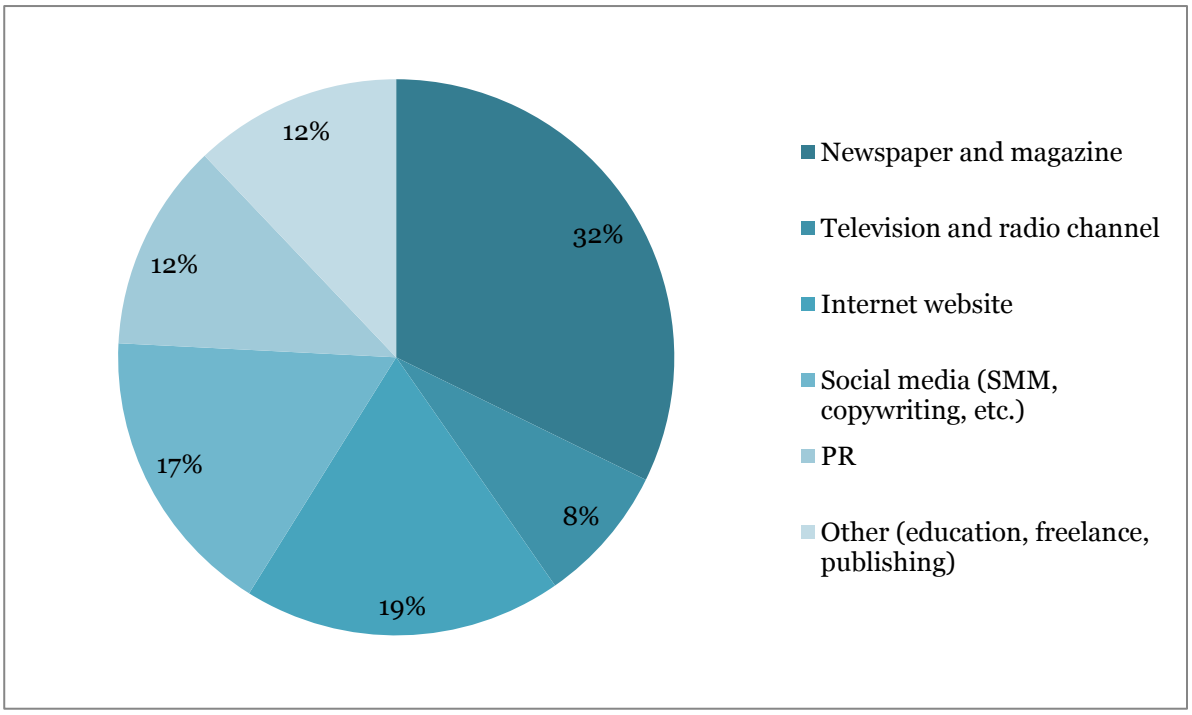

Fig. 1. Distribution of survey participants by media types

As evident from the results of the question "Are you familiar with artificial intelligence tools such as ChatGPT or Midjourney?," nearly half of the study participants actively use AI tools like ChatGPT or Midjourney in their work activities. One-third are familiar with these tools but use them infrequently. Those who use them less often express skepticism, citing reasons such as data inaccuracy, ethical concerns, or technical issues. The fact that most respondents are familiar with and have begun using AI tools indicates that the integration of artificial intelligence in the field of journalism is steadily increasing.

To the question "Using neural networks is for you...," 61.3 % of respondents answered "easy," 38.7 % answered "difficult." Most young people (aged 18–35) rated the use of artificial intelligence as "easy." This is related to their adaptability to technologies, and moreover, knowledge of specialized programming languages is not required to use neural networks. Women considered the use of artificial intelligence more difficult compared to men. Among SMM/Internet journalism representatives, the "easy" response also predominates.

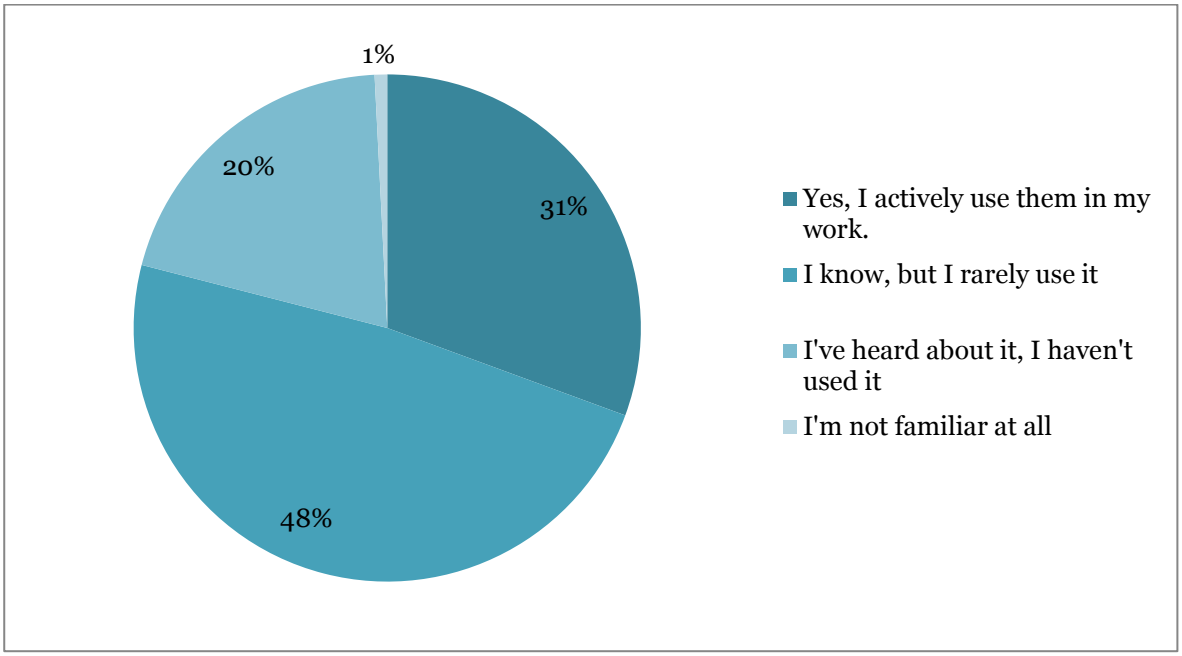

Fig. 2. Are you familiar with artificial intelligence tools such as ChatGPT or Midjourney?

When asked "What do you think artificial intelligence is?," 79.8 % of respondents answered "The internet of the future, a door to new opportunities," while 20.2 % responded "A source of danger, threat, and unemployment."

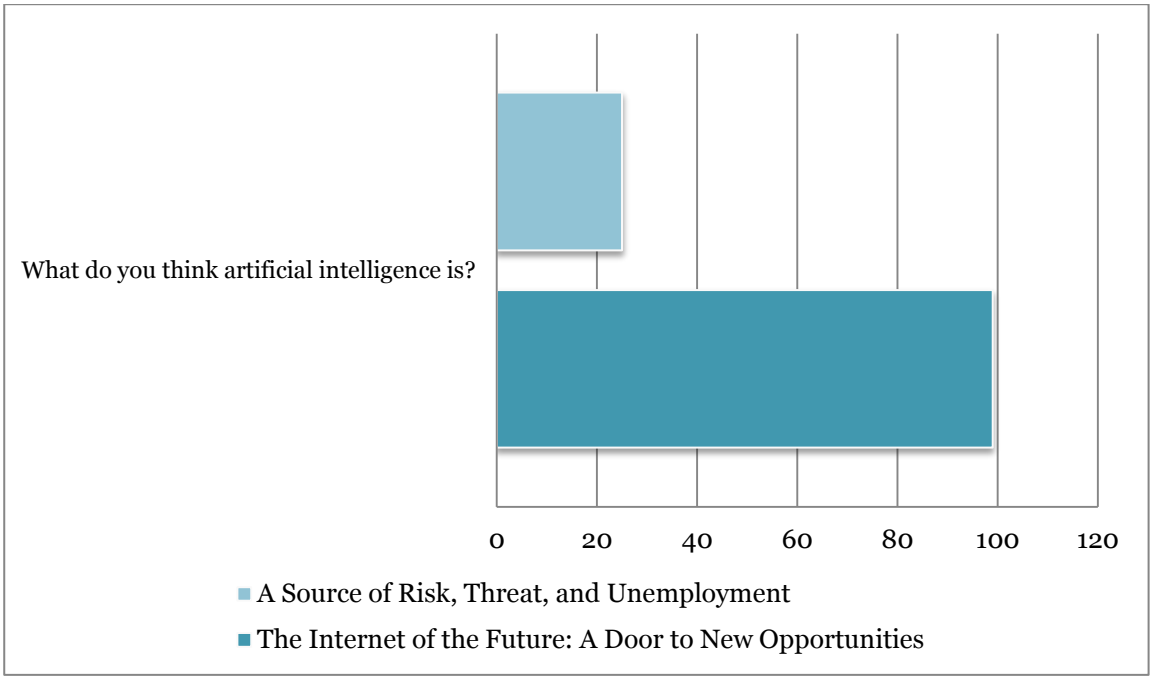

Fig. 3. What do you think artificial intelligence is?

Indeed, the development of artificial intelligence technologies is progressing regardless of positive or negative attitudes towards it, or the benefits or harm it may bring. However, it is crucial to study people's evaluations and attitudes towards it. The next question was aimed at examining this issue. The analysis revealed that the majority of respondents view it as a manifestation of progress. Undoubtedly, artificial intelligence presents opportunities and prospects for journalism, but its impact must be properly managed.

One of the main questions of the study, "What kind of content are you creating using artificial intelligence?," is reflected in the following Figure 4. Notably, the creation of social media content occupies the leading position. In second place, it appears that translation work, which does not require creativity, is becoming automated. Those who do not use artificial intelligence in the creative process also constitute a significant portion. It was found that work requiring creativity (creating news and analytical materials) remains primarily in human hands.

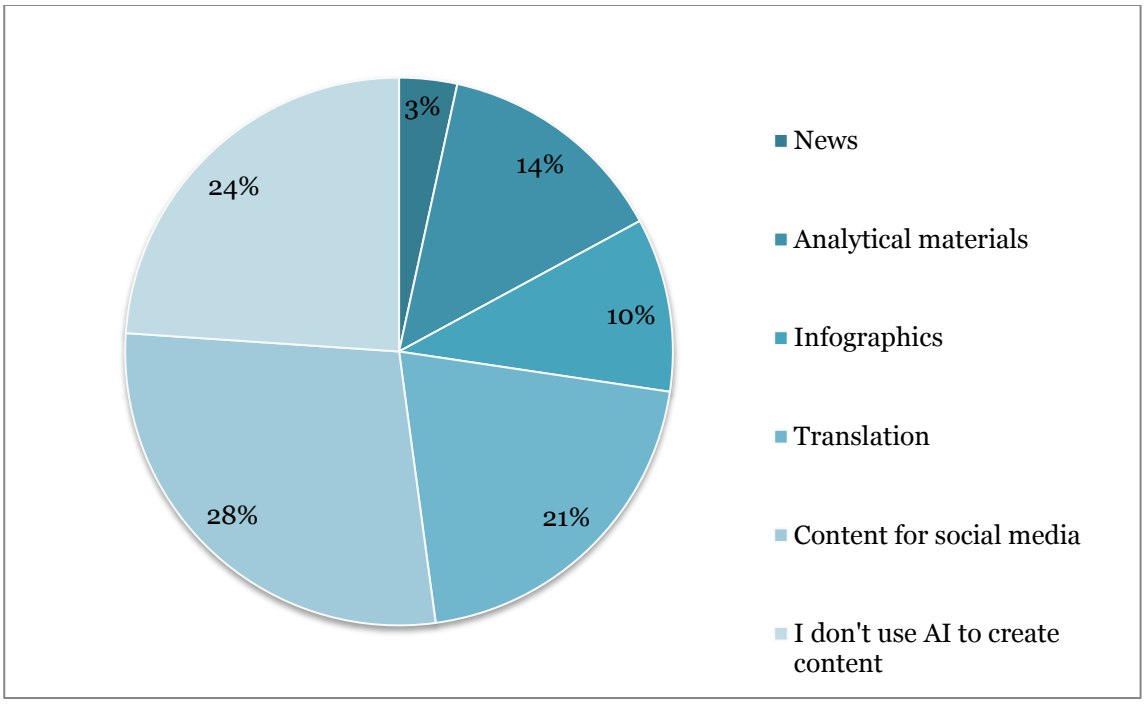

Fig. 4. What kind of content are you creating using artificial intelligence?

The question "What percentage of your creative work is attributed to artificial intelligence?" aimed to measure the involvement of AI in the journalistic creative process and determine the proportion of neural networks in produced media content. The working hypothesis of the sociological research program predicted this indicator would be high. However, in practice, the results did not confirm this prediction. Very few respondents claimed that 50 percent or more of their creative work was attributable to artificial intelligence. In fact, 45.2 % of participants selected the "not applicable" response.This suggests that, for now, artificial intelligence remains merely a supplementary tool, with humans still making the primary creative decisions.

When asked, "What problems have you encountered when working with artificial intelligence?," experienced specialists pointed to issues related to information reliability, while younger professionals cited technical problems. The option "Insufficient information about usage rules" encompassed difficulties in correctly writing prompts (commands), obtaining results that don't match the intended goal, and inability to find necessary functions. This option was selected by 37.9 % of respondents.

The question "Are you familiar with the Paris Charter on Artificial Intelligence and Journalism adopted in 2023?" aims to determine whether respondents are aware of the ethical standards adopted for the use of artificial intelligence in journalistic activities. 89.5 % of respondents say they are not familiar with it, while 10.5 % are acquainted with this document.

In 2023, the international human rights organization Reporters Without Borders (RSF), along with 16 partner organizations, published the Paris Charter on Artificial Intelligence and Journalism. It helps define principles for media outlets when working with artificial intelligence. The Paris Charter is the first international ethical guideline on artificial intelligence and journalism. Facts and evidence, a clear distinction between original and synthetic content, editorial independence, and human responsibility will serve as fundamental guarantees of the right to reliable news and information in the media in the era of artificial intelligence. This charter also highlights the relevance of ethical issues surrounding the use of artificial intelligence in journalism.

In journalism education and, more broadly, in the professional development of journalists, it is crucial to introduce such documents and explain their significance.

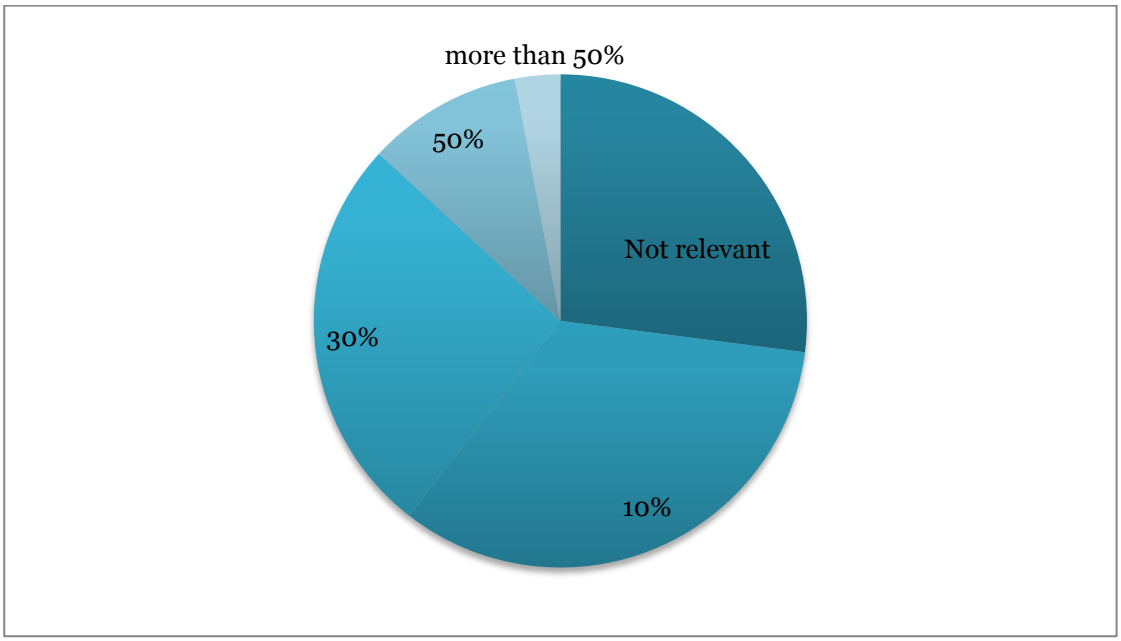

Fig. 5. Share of artificial intelligence in creativity

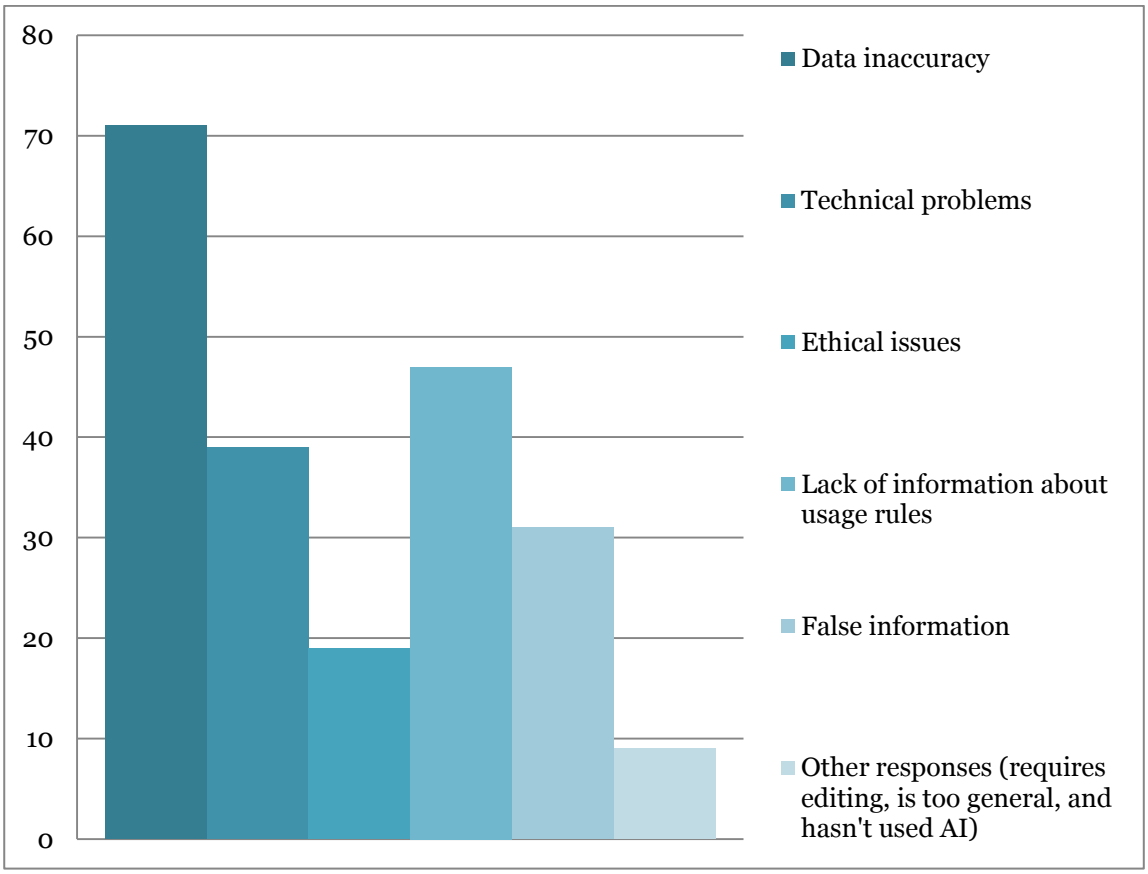

Fig. 6. Problems with artificial intelligence

To the question "Can you distinguish between original (human-created) and synthetic (AI-generated) content?" only 8.9 % of respondents indicated that they can identify it professionally. 53.2 % said they determine it through intuition. 37.9 % of respondents stated that

they had never thought about it. It is known that synthetic content is content created using artificial intelligence algorithms. It can exist not only as text but also in other formats. For example, in the research of U.A. Ciftci, the issue of identifying synthetic video content based on biological signals was raised (Ciftci et al., 2023). Naturally, media products created with the help of artificial intelligence contain unnatural elements, which can be noticed in images. Even in texts, it is understood that the warmth of a human soul is not felt. However, if neural networks have provided incorrect facts, it is difficult to detect. Intuition alone may not be sufficient for this task.

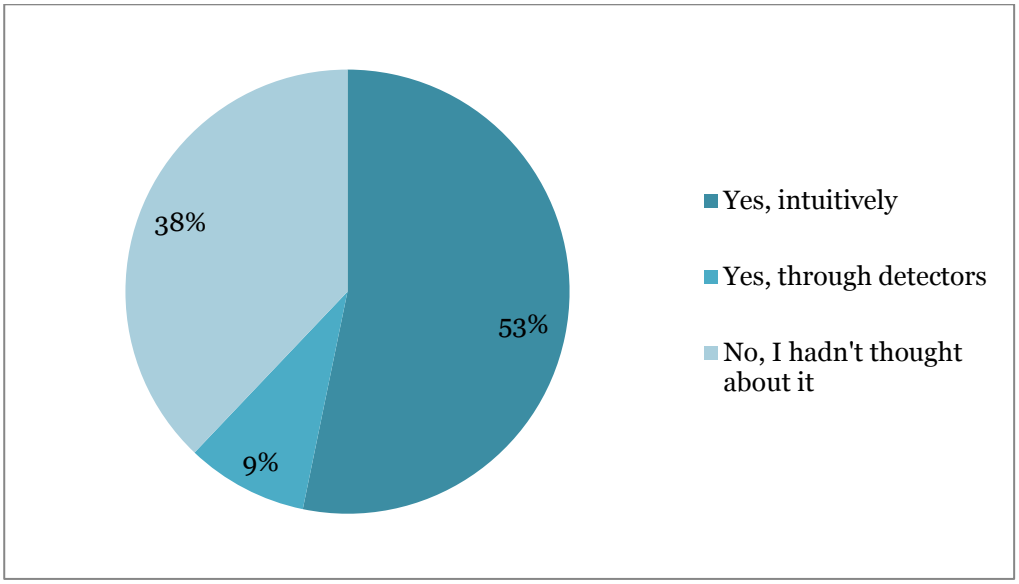

Fig. 7. Can you distinguish between original (human-created) and synthetic (AI-generated) content?

9.7 % of respondents answered "Yes" to the question "Have you ever spread false information based on neural networks?," while 90.3 % answered "No."

The fact that many people answered "yes" to the question "Can you identify fake videos created with the help of neural networks – deepfakes?" is likely based on intuition, as with the previous question.The reason is that today deepfakes use deep learning techniques to synthesize and alter human appearances, particularly in fraudulent and disinformation campaigns. It's difficult to distinguish whether a person is fake. S.T.Suganthi et al. also note in their research that deepfakes created with the help of generative adversarial networks can pose a threat to society, and they propose solutions for their detection (Suganthi et al., 2022). M. Boháček and H. Farid identify and document specific features of facial expressions, gestures, and speech that distinguish a false personality (Boháček, Farid, 2022).

The question "What opportunities created by artificial intelligence have you used in your journalistic activities?" allows us to determine which areas of the media sphere have been penetrated by artificial intelligence, and to more clearly envision the collaborative work of journalists and neural networks. As shown in Figure 8, information search occupies a leading place among the answers. This is followed by translation, text generation (writing articles, creating clickbait headlines), and photo generation.

The question "Which neural networks do you use?" revealed that ChatGPT is the most popular among neural networks, with 87.9 % of respondents using it. However, the tools and resources employed in the media sphere are highly dynamic, and the reach of other new neural networks, such as DeepSeek, is also expanding.

To the question "How reliable is the data provided by artificial intelligence?," the majority of respondents, that is, 81.5 %, answered that it is average. This also represents a cautious approach to artificial intelligence. 2.4 % – high, 16.1 % – low.

To the question "Can neural networks transmit biased information?," 58.9 % of respondents answered "yes," 5.6 % said "no," and 35.5 % chose the answer "I don't know." It should be noted that neural networks have indeed become a means of transmitting biased information. To reduce this risk, it is crucial to develop professional media literacy alongside technical and legal solutions.

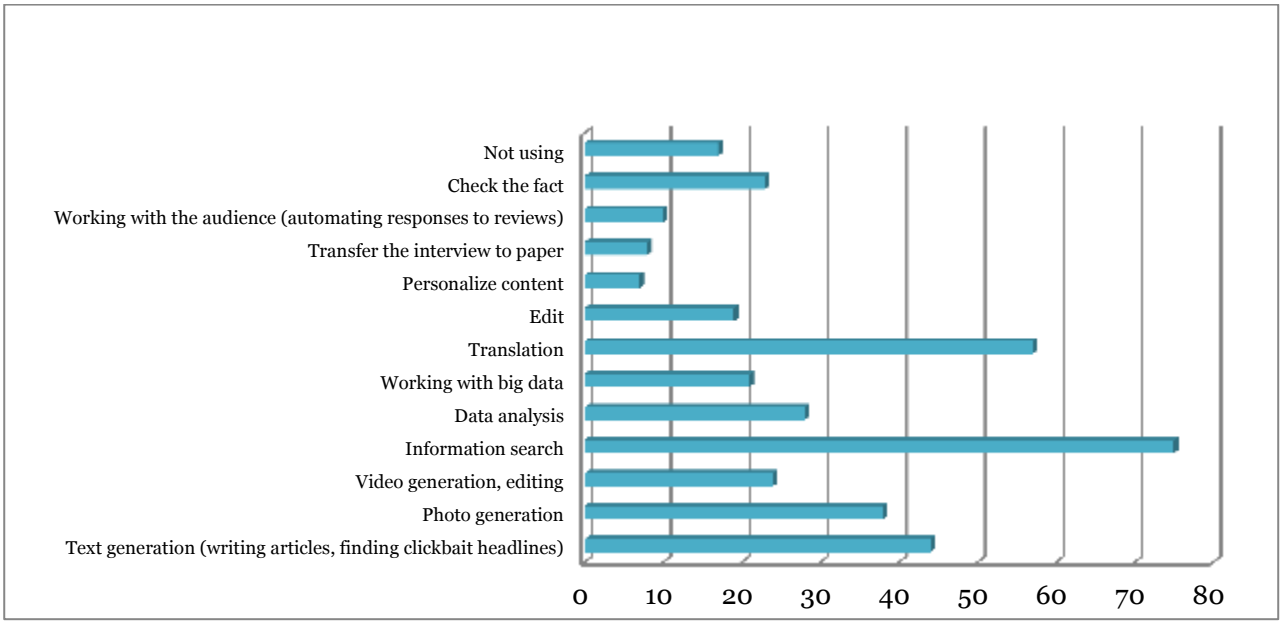

Fig. 8. What opportunities created by artificial intelligence have you used in your journalistic activities?

The analysis of responses to the question "Which of the following is convenient and reliable for gathering information?" is presented in Firure 9, showing the number of votes. It was revealed that the majority of respondents use traditional formats for collecting information.

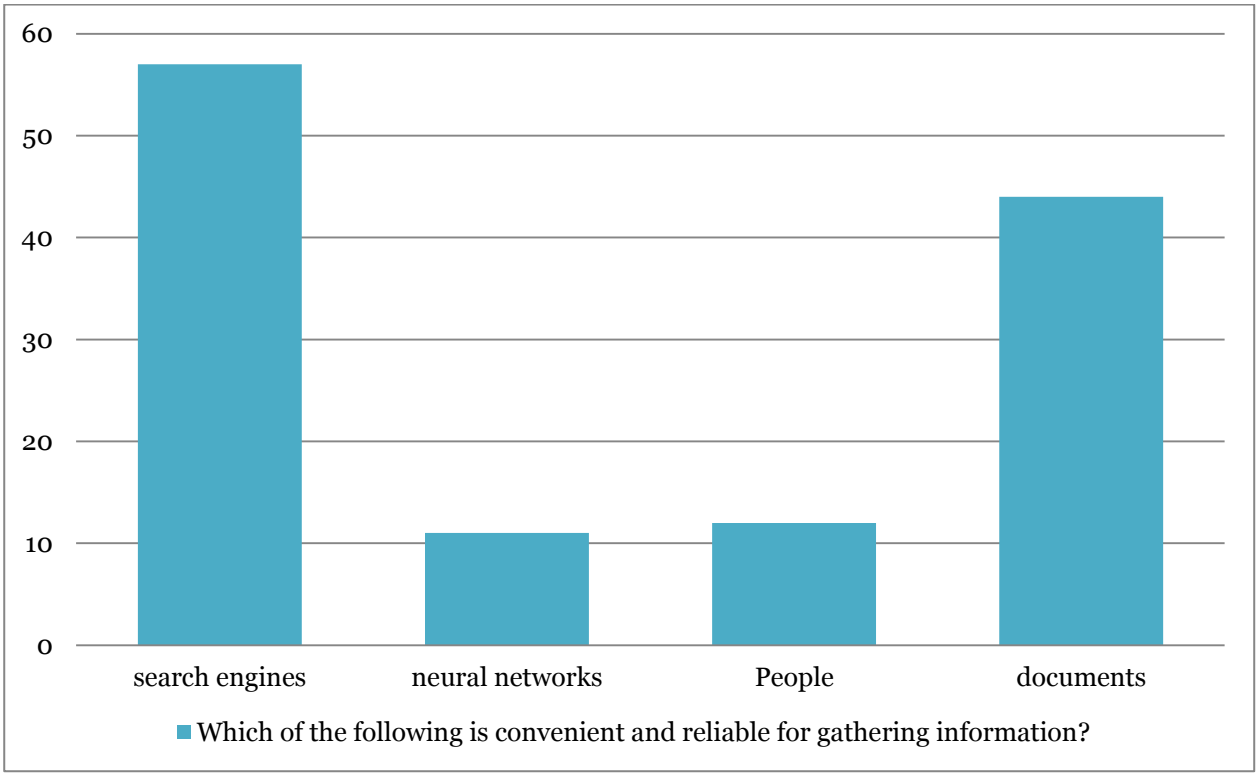

Fig. 9. Easy and reliable information sources

The responses to the question "What is the main problem artificial intelligence is causing in the media landscape?" are provided below. Interestingly, the option suggesting an increase in fake news as one of the main problems did not receive enough votes. A large portion of the respondents approached the issue from an aesthetic and artistic perspective.

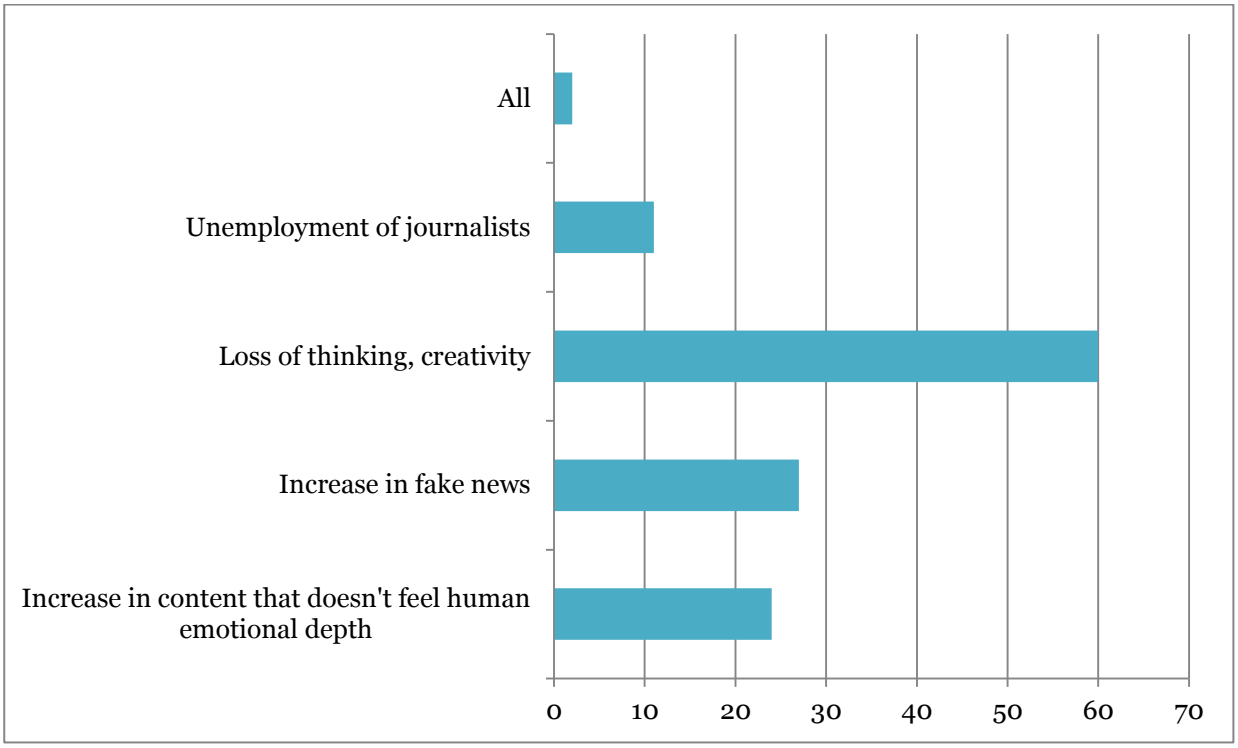

Fig. 10. The main problems posed by artificial intelligence in the media space

The aim of the question "How should we combat the disinformation intensified by artificial intelligence?" was to examine opinions on solutions to the main problem identified in the previous question. The responses are illustrated in Figure 11.

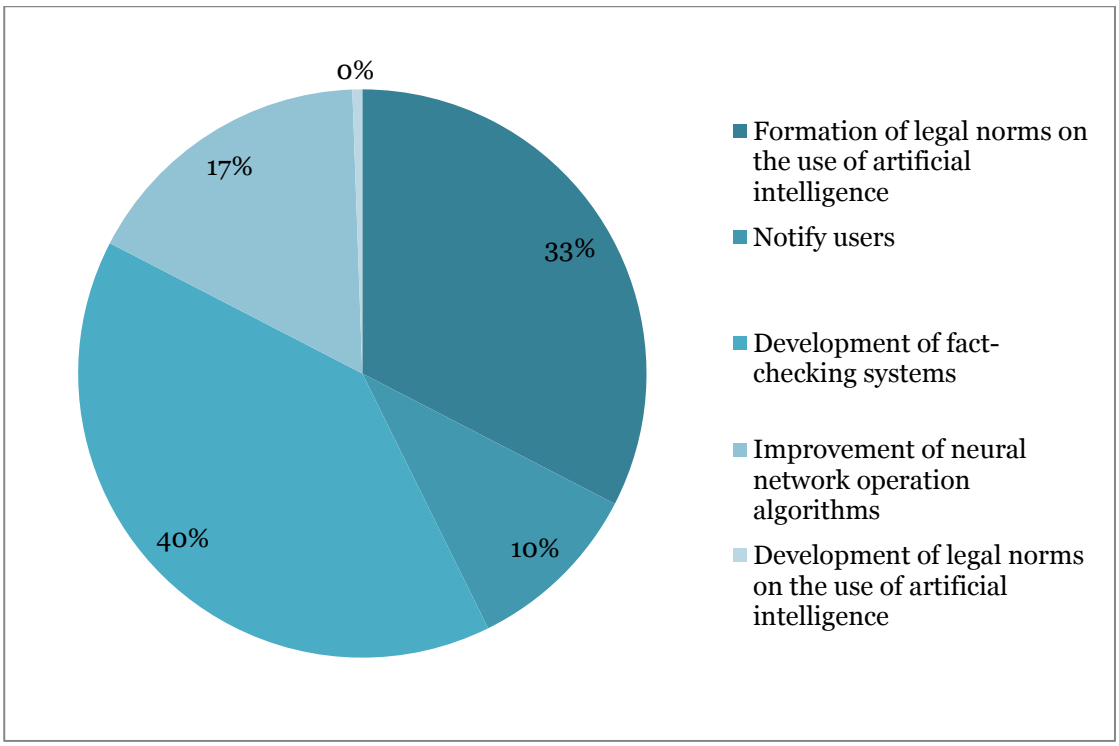

Fig. 11. Solutions

The question "What do you focus on when verifying content created using neural networks?" aims to assess journalists' skills in addressing potential disinformation issues that

artificial intelligence may generate. It has been determined that the majority of media representatives understand the necessity of fact-checking information.

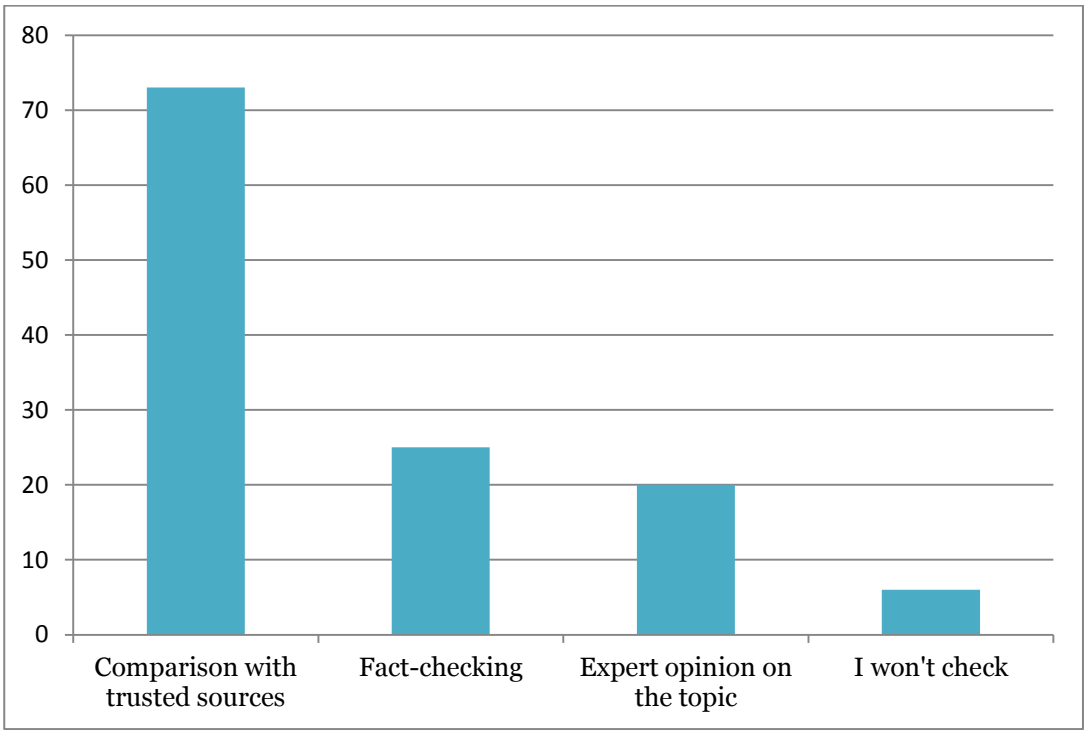

Fig. 12. What do you focus on when verifying content created using neural networks?

To the question "Can neural networks be a source of information?," 28.2 % of respondents answered "yes," while 71.8 % answered "no." According to our research hypothesis, neural networks can indeed serve as a source of information, and this phenomenon is currently being observed in media practice.

The changes that the use of artificial intelligence has brought to journalistic activities are illustrated in Figure 13.

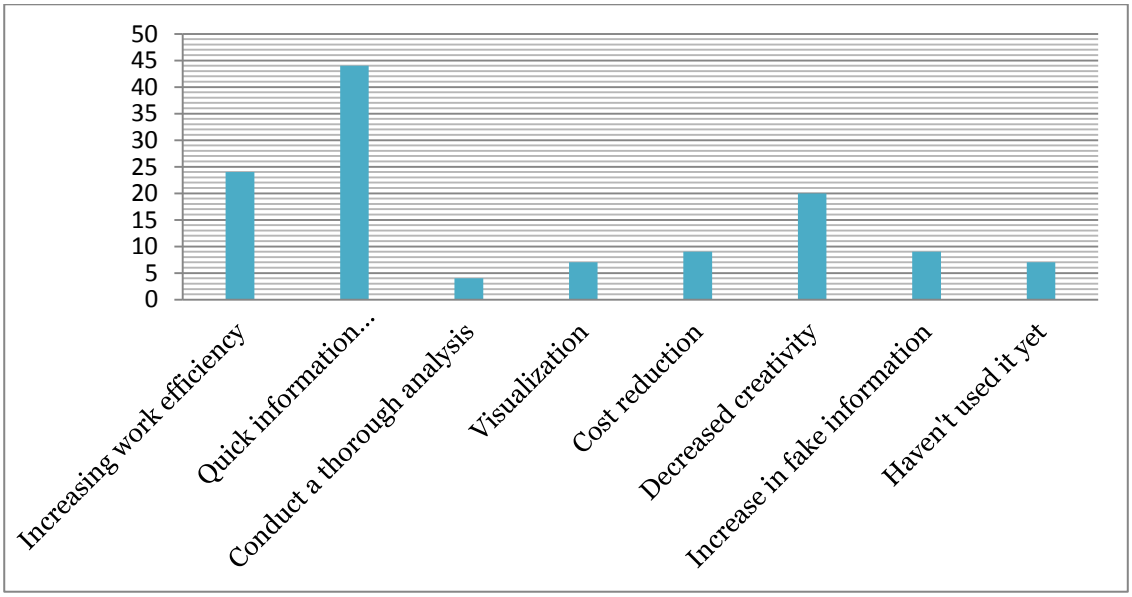

Fig. 13. The changes that the use of artificial intelligence has brought to journalistic activities

To the question "In your opinion, can artificial intelligence replace a human journalist?," 5.6 % of respondents answered "Yes," 46 % "No," and 48.4 % "Partially." As additional thoughts

and comments on the topic, respondents expressed views on the need for a deeper study of artificial intelligence applications in journalism, noting that neural networks can facilitate journalists' work but should be used in moderation. They also mentioned that synthetic content should not evoke wonder in people, and some even suggested the necessity of eliminating artificial intelligence altogether.

5. Conclusion

Through a small study, an attempt was made to address the topical issues of integrating artificial intelligence into the field of journalism. The results of the study show that artificial intelligence is not only a tool that facilitates the work of journalists but also raises problems related to disinformation and journalistic ethics. Artificial intelligence creates significant opportunities in the field of journalism; however, it is necessary to develop professional training, standards, and control mechanisms for its correct and reliable use.

In conclusion, it should be noted that Uzbek journalists are increasingly turning to neural networks, actively using them for information search, content creation, and translation. They understand that neural networks can provide false, biased, or incomplete information. However, they are not familiar with professional methods for verifying content generated by neural networks. In the process of technological changes, media representatives aged 35 and older are experiencing difficulties in adaptation. That is, the older the journalists, the lower their rate of using artificial intelligence. Young journalists are adopting artificial intelligence tools more quickly and applying them in their creative process. The lack of skills related to detecting synthetic content and deepfakes indicates the need to improve journalists' media literacy in working with artificial intelligence. Indeed, artificial intelligence is a technology that must be adopted in the field of journalism. In this process, it is necessary to enhance journalists' skills in working rationally with artificial intelligence, as well as develop and improve legal and ethical standards.

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