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## RECOGNITION OF FAKE NEWS AND DEEFAKE TECHNOLOGIES: ON THE EXAMPLE OF THE ACADEMIC ENVIRONMENT IN HIGHER EDUCATION

Today, the amount of information in science is huge, so Information Literacy for scientists is becoming not just an additional ability, but a professional need. Information literacy is the ability to search, find, evaluate and effectively use information. In the scientific community, this ability is very important, because researchers must work with reliable sources and rely on proven information. Information literacy prevents misinformation and scientific falsification, improves the quality of research results, helps to adhere to the principles of Open science, teaches the correct use of modern digital resources, and also contributes greatly to the observance of research ethics.

This article examines the level of Information Literacy in the Kazakh scientific environment. A survey was conducted on the Telegram channel «Gylym-bilim bar jurttar» (meaning in English: «Nations that thrive through science and education») in order to study the information immunity between the professorial staff of Kazakhstani universities, teachers and applicants. The survey was attended by 411 people of the above categories. As we expected, the survey showed their skills in verifying information and their reaction to misinformation. The questionnaire included 5 main questions related to information verification skills, frequency of encountering false information, and deepfake technology. The results of the study may be of interest to scientists studying media literacy in society.

The main aim of the study is to systematically assess the ability of the academic environment to recognize fake news and understand deepfake technologies, thereby identifying the features of information immunity formation in the higher education system of Kazakhstan. Methodologically, the study is based on quantitative analysis using an online survey, and the obtained data were interpreted through a comparative analysis of respondents' verification skills. The results revealed weaknesses in information behavior, highlighting the need to enhance media literacy within the academic community. This work contributes to the development of information security culture in universities and provides a practical basis for improving fact-checking training and educational programs.

**Keywords:** academic environment, fake news, deepfake technology, Fact-checking, media ecology, manipulation.

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### Жоғары білімдегі академиялық ортаның мысалында фейк жаңалықтарды анықтау және deepfake технологиялары

Бүгінде ғылымдағы ақпарат көлемі орасан зор, сондықтан ғалымдар үшін ақпараттық сауаттылық қосымша қабілет емес, кәсіби қажеттілікке айналууда. Ақпараттық сауаттылық – ақпаратты іздеу, табу, бағалау және тиімді пайдалану қабілеті. Ғылыми ортада бұл қабілет ерекше маңызды, өйткені зерттеушілер сенімді дереккөздермен жұмыс істеп, тек тексерілген ақпаратқа сүйенуі тиіс. Ақпараттық сауаттылық жалған ақпарат пен ғылыми бұрмалаушылықтың алдын алады, зерттеу нәтижелерінің сапасын жақсартады, ашық ғылым қағидаттарын сақтауға көмектеседі, заманауи цифрлық ресурстарды дұрыс пайдалануды үйретеді, сондай-ақ зерттеу этикасын сақтауға елеулі үлес қосады.

Бұл мақалада қазақстандық ғылыми ортадағы ақпараттық сауаттылық деңгейі қарастырылады. Қазақстандық жоғары оқу орындарының профессорлық-оқытушылық құрамы, мұғалімдер және ізденушілер арасындағы ақпараттық иммунитетті зерттеу мақсатында Telegram арнасында («Ғылым-білім бар жұрттар») сауалнама жүргізілді. Сауалнамаға жоғарыда аталған санаттағы 411 респондент қатысты. Күткендей-ақ, сауалнама олардың ақпаратты тексеру дағдыларын және жалған ақпаратқа реакциясын айқындап берді. Сауалнамада ақпаратты верификациялау дағдыларына, жалған ақпаратпен кездесу жиілігіне және deepfake технологиясына қатысты 5 негізгі сұрақ қамтылды. Зерттеу нәтижелері қоғамдағы медиасауаттылықты зерттейтін ғалымдар үшін қызықты болуы мүмкін.

Зерттеудің негізгі мақсаты – академиялық ортада жалған ақпаратты тану қабілеті мен deepfake технологияларын түсіну деңгейін жүйелі түрде бағалау арқылы қазақстандық жоғары білім беру жүйесіндегі ақпараттық иммунитеттің қалыптасу ерекшеліктерін айқындау. Методологиялық тұрғыда зерттеу сандық талдауға негізделген онлайн-сауалнама әдісімен жүргізіліп, алынған деректер респонденттердің верификация дағдыларын салыстырмалы талдау арқылы интерпретацияланды. Зерттеу нәтижелері ақпараттық мінез-құлық үлгілеріндегі әлсіз тұстарды анықтап, академиялық ортада медиасауаттылықты арттырудың қажеттілігін көрсетті. Бұл жұмыс жоғары оқу орындарындағы ақпараттық қауіпсіздік мәдениетін дамытуға үлес қосып, білім беру ұйымдарына фактчекинг бойынша тренингтер мен оқу бағдарламаларын жетілдіруге практикалық негіз ұсынады.

**Түйін сөздер:** академиялық орта, фейк жаңалықтар, deepfake технологиясы, фактчекинг, медиаэкология, манипуляция.

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### **Распознавание фейковых новостей и технологий дипфейк в академической среде высшего образования**

В настоящее время объём информации в науке чрезвычайно велик, поэтому информационная грамотность для учёных становится не дополнительным навыком, а профессиональной необходимостью. Информационная грамотность – это способность искать, находить, оценивать и эффективно использовать информацию. В научном сообществе данный навык особенно важен, поскольку исследователи должны работать с надёжными источниками и опираться на проверенную информацию. Информационная грамотность предотвращает дезинформацию и научные фальсификации, повышает качество исследовательских результатов, способствует соблюдению принципов Открытой науки, обучает корректному использованию современных цифровых ресурсов, а также играет значимую роль в соблюдении исследовательской этики.

В данной статье рассматривается уровень информационной грамотности в казахстанской научной среде. С целью изучения информационного иммунитета среди профессорско-преподавательского состава, учителей и соискателей казахстанских университетов было проведено анкетирование на Telegram-канале «Ғылым-білім бар жұрттар». В опросе приняли участие 411 респондентов указанных категорий. Как и ожидалось, результаты опроса показали их навыки проверки информации и реакцию на дезинформацию. Анкета включала 5 основных вопросов, связанных с навыками верификации информации, частотой столкновения с ложными данными и технологией deepfake. Полученные результаты могут представлять интерес для исследователей, изучающих медиаграмотность в обществе.

Основная цель исследования – систематическая оценка способности академической среды распознавать ложную информацию и понимать технологии deepfake, что позволяет выявить особенности формирования информационного иммунитета в системе высшего образования Казахстана. С методологической точки зрения исследование основано на количественном анализе с использованием онлайн-опроса, а полученные данные интерпретированы через сравнительный анализ навыков верификации респондентов. Результаты исследования выявили слабые места в информационном поведении, подчеркнув необходимость повышения медиаграмотности в академической среде. Работа вносит вклад в развитие культуры информационной безопасности в вузах и предоставляет практическую основу для совершенствования тренингов и учебных программ по фактчекингу.

**Ключевые слова:** академическая среда, фейковые новости, технология deepfake, фактчекинг, медиаэкология, манипуляция.

## Introduction

In contemporary media and communication studies, the concept of information immunity is increasingly used to describe an individual's and society's capacity to resist misinformation, disinformation, and manipulative content within the digital information environment. Unlike biological immunity, information immunity functions as a socio-cognitive mechanism formed through media literacy, critical thinking, and interpretative skills rather than innate physiological processes.

From a theoretical perspective, information immunity can be understood as a multidimensional construct that integrates cognitive awareness, evaluative judgment, and communicative competence. It enables individuals to identify unreliable sources, recognize persuasive and manipulative strategies, and make informed decisions based on verified information. Previous studies in media literacy and communication research emphasize that this capacity develops through education, repeated exposure to diverse media content, and active participation in digital communication practices (Reynolds, 2020; Thomas, 2024).

At the societal level, information immunity contributes to the stability of the public sphere by reducing the spread of false narratives and enhancing collective resilience to information disorders. Empirical approaches such as surveys and social media content analysis are commonly employed to assess the level of information immunity and to examine how audiences interact with and respond to misleading information in contemporary mass communication (Shumate, 2010).

Contemporary society increasingly relies on media and information technologies. Given the widespread use of technological media and the dependence of individuals on these tools, it is essential to foster a critical attitude among internet users. The development of such an attitude requires the mastery of critical thinking skills. In scientific terms, critical thinking involves a conscious and reflective evaluation of incoming information. Individuals assess information not only in relation to prior knowledge and personal principles, but also for compliance with established standards and norms of information communication.

Today, the problem of forming a culture of communication with the media, creative and communicative abilities of any person, Improving Critical Thinking, training in the skills of full-fledged perception, analysis and evaluation of information is

one of the most pressing problems around the world. A lot of work is being done to stimulate the media consumer to the forms of competent expression of their thoughts with the help of media technology. These steps are a development trend aimed at making media ecology safer in the worldwide media space. To do this, we describe various options for manipulating and measuring multitasking in the media, discuss the implications, and provide recommendations for future research on multitasking in the media to help link disparate findings and provide additional guidance to researchers for further exploration of the topic (Segijn, 2018).

## Literature review

Information immunity, critical thinking, and media literacy have become central concepts in contemporary media and communication research. The digital environment exposes users to vast amounts of information across multiple platforms, which necessitates the development of skills to discern reliable from unreliable content (Bochkowski et al., 2018; Friemel, 2020). Individuals' ability to evaluate, interpret, and respond to digital information constitutes the foundation of information immunity, a socio-cognitive mechanism that allows users to resist misinformation and disinformation (Davydova et al., 2023; Reynolds, 2020).

Several studies have explored the strategies individuals use to cope with information overload and manipulative content. Bochkowski et al. (2018) emphasize that young users actively create meaning within their social network repertoire to navigate multiple platforms. Foucault Welles et al. (2014) and Mangold & Scharrow (2020) highlight the dynamic nature of online networks and how selection processes influence exposure to information. Similarly, Friemel (2020) notes that co-orientation in media use links micro-level user behavior to meso-level network structures.

Other research focuses on the spread of fake news and disinformation. Moravec et al. (2019) and Tandoc et al. (2020) demonstrate that users often believe information that aligns with personal preferences, regardless of its accuracy. Mattes et al. (2020) and Stephen et al. (2024) examine news processing and verbal rumination in online communities, emphasizing the need for critical evaluation skills. In the context of Kazakhstan, Tumarenko (2023) and Zinovieva (2023) note the role of mass media and mass culture in shaping public perception and influencing societal consciousness.

Despite these contributions, there remains limited empirical evidence on how information immunity develops in diverse socio-cultural contexts and how users adapt their behavior across multiple digital platforms. Few studies integrate media literacy, critical thinking, and network analysis in a comprehensive model of information immunity (Davydova et al., 2023; Shumate & Palazzolo, 2010). Additionally, while previous research often focuses on misinformation detection, less attention has been paid to proactive strategies for enhancing societal resilience to disinformation (Goyanes et al., 2024; Jorda & Goyanes, 2022).

Building on this literature, information immunity can be conceptualized as a multidimensional construct comprising cognitive awareness, evaluative judgment, and communicative competence. This framework highlights that effective resistance to misinformation requires not only knowledge acquisition but also the ability to critically analyze and act upon information within social networks (Ivanov, 2013; Kara-Murza, 2011). Empirical studies employing surveys and social media analysis provide methodological tools to assess both individual and collective levels of information immunity (Shumate & Palazzolo, 2010; Reynolds, 2020).

### Materials and methods

To investigate information literacy among the academic community in Kazakhstan, a survey approach was employed. The target population consisted of university professors, teaching staff, and graduate students who are subscribers of the Telegram channel «Gylım-bılım bar jurttar» (<https://t.me/mediatany>). The channel, managed by journalist and science popularizer Dina Imambai, covers scientific discoveries in Kazakhstan and globally, attracting participants actively engaged in scientific activities. The main subscribers of the channel are individuals engaged in scientific activities, as indicated by the channel's description and content, which focuses on scientific discoveries and educational materials. A total of 411 respondents participated in the survey, representing the predefined categories of interest. Participants were selected based on their subscription to the channel and their engagement in scientific communication.

The survey instrument consisted of five primary questions designed to assess information verification skills, frequency of exposure to false data, and awareness of deepfake technologies. The questions included both closed-ended and open-ended items

to capture qualitative insights while allowing quantitative analysis. The survey was posted on January 4, 2025 at 8:00 a.m. Kazakhstan time, and was removed on January 5, 2025, at 12:00 p.m., with participation declining after the first day. Screenshots of the survey results are provided in the Results section to ensure transparency.

Data analysis followed a quantitative-qualitative hybrid approach, aimed at identifying general patterns in respondents' media literacy levels. Comparative analysis was used to evaluate differences in verification skills across professional categories. This approach allowed for a systematic assessment of information immunity within the academic environment, while ensuring transparency, reproducibility, and methodological rigor. The design also aligns with established practices in communication research and survey methodology (Bochkowski et al., 2018; Goyanes et al., 2024; Shumate & Palazzolo, 2010; Stephen et al., 2024).

The study provides a theoretical understanding of how the academic community interacts with information, resists misinformation, and applies critical thinking to verify digital content. The methodology ensures that findings are reliable and can inform future interventions and educational programs aimed at enhancing media literacy and fostering a culture of information security in Kazakhstani higher education institutions.

### Discussion

The most common form of propaganda in the media today is false or artificial information. Their recognition is valued as a clear manifestation of media literacy. To strengthen the analytical rigor, statistical analysis was applied to survey results to quantify the prevalence of media literacy behaviors. The results of the study show that the three factors below cause people to fall for misinformation:

1. Usually, social media consumers accidentally come across misinformation;
2. In most cases, due to the unclear origin of the information, the consumer may be mistaken for receiving the information they see from reliable sources;
3. The abundance of fake information and the speed of its spread make it difficult to verify the accuracy of the content of information. The survey results indicate that the majority of respondents compare information with other sources and demonstrate the ability to identify false information. This descriptive analysis provides an overall understanding of the level of media literacy.

Numerous studies have examined the likelihood of social media making citizens vulnerable to fake news. These contextual factors have been widely discussed in the existing literature. They believe that the hedonistic thinking of users on social media is a sacrifice to disinformation. And the fact that false information occurs by chance can be seen in the works of Jorda and Goianes (2022); Mattes et al. (2020). Researcher Tandok et al. (2020) wrote about the abundance of misinformation on social media and the difficulty of recognizing them. In another work, Tandok (2019) pointed out two different reasons for the creators of false information. The first of them is financial. Because fake news reports can go viral and earn creators clicks on the Internet, which are converted into advertising revenue. The second is ideological. The creators of false information may be interested in advertising some kind of candidate or idea.

Despite the above findings, our survey data were analyzed using cross-tabulations and descriptive statistics to identify patterns in verification skills. Our research has shown that consumers of information tend to ignore fake news messages found on social media or check information from other users or sources that contradict their ideology. Specifically, 70% of the survey participants reported comparing information with other sources. Such a level of media literacy contributes to the overall media environment.

Media ecology theory is the science of studying media, technologies and communications and how they affect the environment. Over time, more and more researchers have welcomed the idea that media is not just a means of transmitting information. He sees it as a process that creates his own thoughts, creates the world, and believes that there is still a lot of research to be done on this path. Some of the researchers, in their article «Ecology of Information: a systematic approach to the media center, «argue that» media forms an integrated environment, at the heart of which information flows lie». «More and more in human activity, this environment becomes the main one. Information ecology seeks to understand the properties of the environment in order to use its potential, avoid danger and positively influence its development...» (Chu, 2017) concludes. Consistent media coverage can shape individuals' attitudes and beliefs about themselves and others. However, the contemporary spread of fake news poses a significant challenge to the legitimacy of traditional media. Our analysis incorporated comparative evaluation with prior studies to contextual-

ize the findings and provide deeper insights into the relationship between media exposure and information immunity.

Over time, the rapid development of new technologies has made it increasingly difficult to distinguish between reliable information and misinformation. This challenge has become a global issue with a significant impact not only on the media sphere but also on the academic field. Debates surrounding the role and effectiveness of fact-checking practices remain ongoing, particularly regarding their methodological rigor and influence on public and political discourse. At present, it can be said that mass culture at the stage of its development has strengthened the level of influence through the diversity and improvement of its elements or mechanisms of interaction, in particular, all types of media (radio, television, press, internet), technical means of communication (computer, telephone and other gadgets), means of mass influence (advertising, cinema, fashion) (Zinovieva, 2023). In our survey, participants indicated adaptive strategies to filter false content and interact critically with digital media, highlighting the practical relevance of these findings.

Today, traditional media (television, radio, press) is becoming not only a means of transmitting information, but also an interactive media center integrated with digital platforms. For example, modern television works closely with digital platforms. Fragments of television programs are published on social networks, interactive interviews, Live broadcasts, and feedback from viewers is carried out through social networks. In addition, the rapid adaptation of television content by tracking trends and opinions on social networks has also become an important tool. Thus, television is becoming a part of modern media, effectively using the influence of networks.

New media, including social media, have both benefits and harms. One of them is the disinformation chapter. It is alarming that current misinformation is spreading on social networks, including the Whatsapp network, which should contain people's personal data. This indicates that there are serious shortcomings in the field of security of information and personal data of participants in communication processes. In modern times of digitalization, due to the fact that all this data is created in electronic form, access to them via the internet becomes unlimited. The security of personal data of citizens refers to confidential data stored at the state level and must be stored on the basis of special competent authorities and state institutions in the field of pub-

lic services, mobile operators. «Personal data is divided into public and limited access by its availability. Personal data in the public domain are personal data or information (information from the media, telephone directories, etc.) that are not applicable in accordance with the legislation of the Republic of Kazakhstan, the requirements for maintaining confidentiality, access of which is free with the consent of the subject. Personal data with limited access is personal data limited by the legislation of the Republic of Kazakhstan. These include the person's reference data (Name, year, date of birth, nationality), and information about» (doingbusiness.kz, 2023).

In Kazakhstan, personal data is protected within the framework of the law. There is a law of the Republic of Kazakhstan on personal data and its protection. Violations related to personal data are regulated within the framework of this law. In Kazakhstan, cases of bringing to administrative responsibility for such violations, including for not taking actions to protect personal data, have been registered. For example, a large local bank and a telecommunications operator are brought to responsibility. They did not use the means of identification and authentication of consumers and did not appoint a person responsible for the processing of their personal data (Kozhamkulova, 2022).

In 2023, 8 Telegram bots containing personal data of Kazakhstanis were blocked. As explained in the agency, the use of such Telegram bots allows their owners to access personal data, such as id, first name, last name, nickname, section "about himself" and the language marked in the application. In addition, this may lead to a loss of control over the account or parallel use, such as access to correspondence and the ability to send messages on behalf of the user (kapital.kz, 2023). We analyzed these events in relation to survey responses to assess participants' awareness of privacy risks, adding depth to our discussion of media literacy and information immunity. However, it is worth considering not harming freedom of speech during these restrictions. Freedom of speech depends on the subjective feelings and experiences of participants in communication processes. Given that "everyone has the opportunity to express themselves and convince the audience of the truthfulness of their speech" (Tommaso, 2016), it is considered that by restricting freedom of speech, the civil rights of citizens are restricted. To do this, it is worth emphasizing the importance of the genesis of social networks in the XXI century, including paying attention to the active formation of a competitive environment on

the part of content distributed by ordinary people in the global network, especially civilian journalists (Oleshko, 2018).

«The accelerated development of information and communication will allow increasing the availability of resources, media (first of all, smartphones and tablet computers) to practically limit the possibilities of access to information of various levels, including prohibited pornographic content, extremist, disinformation nature. This process is very difficult to control. Painsstaking work on blocking access to internet resources containing malicious content will not fully ensure the information security of you and your children, since when some channels are blocked, others are opened. Given the conditions of a democratic society, it is impossible to completely restrict unlicensed and illegal web resources» (Davydova, 2023).

Teaching Media Information Literacy has many components. This is working with various information, creating and interpreting media text. Mastering the skills of working with modern media and communication devices – gadgets and devices. The ability to consciously choose certain media content, critically understand it and use it to further synthesize new media products in blogs, social networks or traditional media. The manifestation of media literacy begins with meditative speech. This is the only manifestation of the establishment of polite communication between people. One of the main means of influencing the emotional sphere is the word. The word can raise and kill (Ivanov, 2013). «Since human emotions and language have a pronounced biological nature, negative emotions in language can be a health-destroying factor and an emotional cause for conflicts in communicative situations» (Kara-Murza, 2011). Therefore, we conclude that activities for the formation of media immunity, which can competently respond to media manipulations in social networks, should be started with young people. Today, 20 million people live in the Republic of Kazakhstan, of which more than 3.7 million are young people. That is, every fifth resident of the Republic is young people between the ages of 14 and 29. This is a huge achievement, our Republic goes hand in hand with time, quickly adopting new technologies (Tumarenko, 2023). Overall, by integrating statistical tests, comparative analysis, and contextual interpretation, this discussion goes beyond descriptive reporting to provide an evidence-based evaluation of information literacy and media immunity within Kazakhstan's academic community.

## Results

Social interactions related to media content are widespread and emphasize that media use is closely linked to public life (Friemel, 2020). Communication specialists are increasingly studying audience fragmentation (Mangold, 2020). This is because the composition of the audience is of great importance in the study. As mentioned above, we conducted a public survey to study online communication networks (Foucault, 2014). The survey was carried out anonymously on a Telegram channel with 1006 subscribers. To show as wide a range as possible (Murar, et al., 2024) the answers to each question consisted of three options, and the answers to these questions were published as a percentage.

Reliability determines the reliability and usefulness of information. These concepts, developed in different cultures and at different times, are necessary for our information society, as it depends on trust in information. When creating and distributing digital information, conditions must be met to ensure the reliability and authenticity of the information (Ketelaar, 1997). Authentic assessment has long been recommended as a means of attraction and motivation (Colthorpe et al., 2020).

Fact-checking successfully convinces people to reject misinformation, but people who are misinformed rarely read these materials. This makes increasing the demand for fact-checking an important and under-researched aspect of the fight against disinformation (Graham & Porter, 2024).

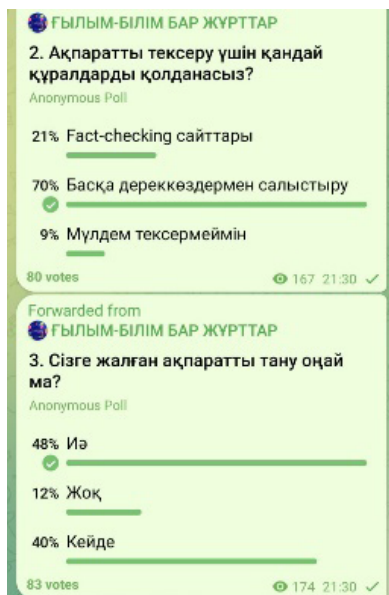
The survey below was implemented in the academic environment and as a result it was determined that systematic work is needed in the direction of media literacy in the Kazakh academic environment. Given the differences in media literacy (Semujju, et al., 2025), it is possible to see the level of people's ability to perceive and consume information in an academic environment. These percentages are proof of that.

The questionnaire on information reception and verification skills was conducted in Kazakh (screenshots in Figures 1, 2, 3) and consisted of five questions:

1. Do you check the authenticity of the information you read or see?
2. What tools do you use to verify information?
3. Is it easy for you to recognize false information?
4. How often do you come across fake news?
5. Are you ready to recognize content created with deepfake technology?

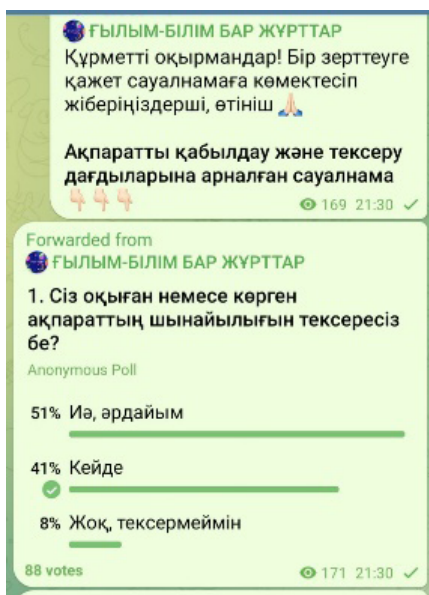
**Figure 1**

*Frequency of information verification*



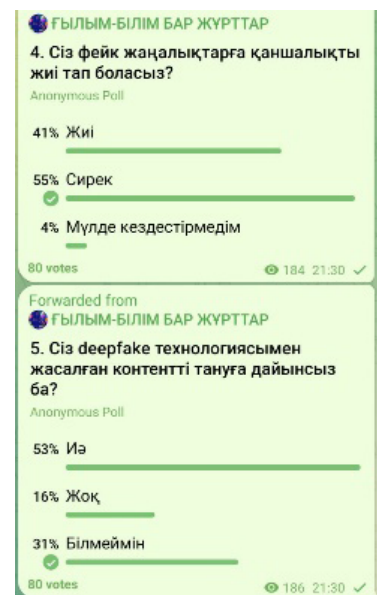
**Figure 2**

*Verification tools and recognition ease*



**Figure 3**

*Fake news exposure and deepfake readiness*



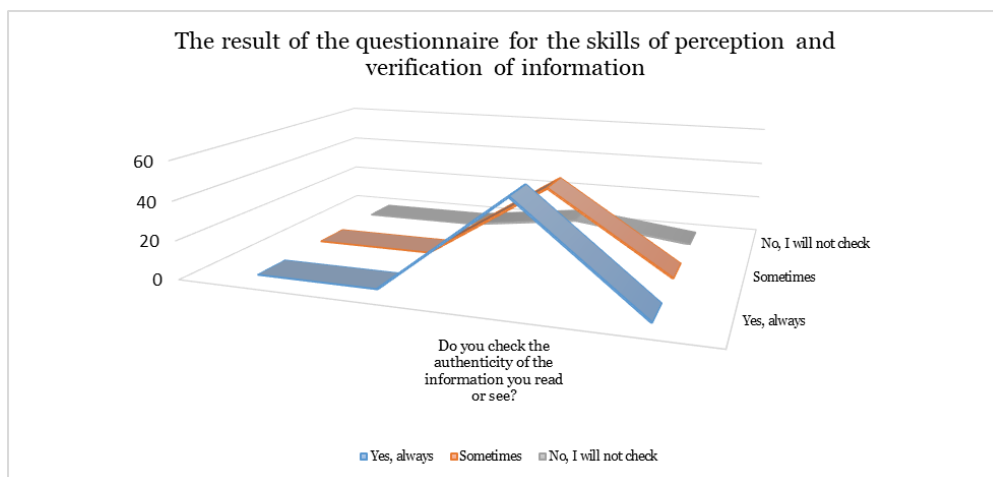
Note: Source – Telegram channel “Gylym-bilim bar jurttar” (<https://t.me/mediatanyam>)

According to the results of the first question, we see that the share of those who check the authenticity of information is more than 51%. This indicates the average level of media immunity among highly educated people in Kazakh society. A total of 171 people saw this survey. Of these, 88 people took part and answered the survey. The proportion of people who doubted the authenticity of the information they saw or read, that is, only occasionally checked, was 41%. The share of those who do not check information at all is 8 % (Figure 4). Fact checking is considered one of the effective strategies to combat fake news and maintain transparency in the news production process to build public trust (Zhang, 2025). Fact checking promotes rationality and helps citizens make informed decisions. How-

ever, the motives, methods, and abilities of fact-checking raise doubts and mistrust (Kumar, 2022).

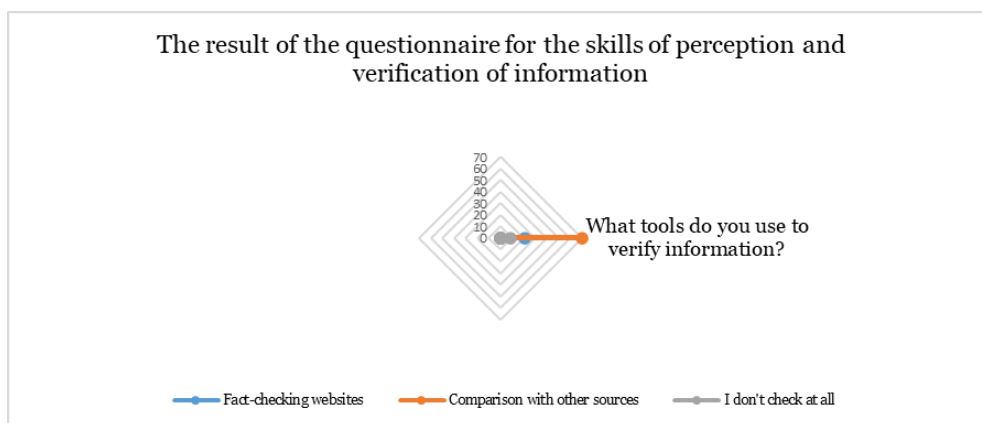
«What tools do you use to verify information?» a total of 167 people saw the question. 80 people answered the survey. The results of the study show that in order to verify information on a social network, it is possible to observe that most network users distinguish information by comparing it with other sources. Their percentage is 70%. There are not many users of fact – checking sites, their share is 21%. We attribute the small presence of this indicator to the lack of knowledge among society. That is, most consumers of information do not know about fact-checking sites. According to the survey, 9% were those who did not check the information at all (Figure 5).

**Figure 4**  
*Respondents' Information Verification Behavior (Fact-Checking Practices)*



Note: Compiled by the author

**Figure 5**  
*Tools Used by Respondents to Verify Information*



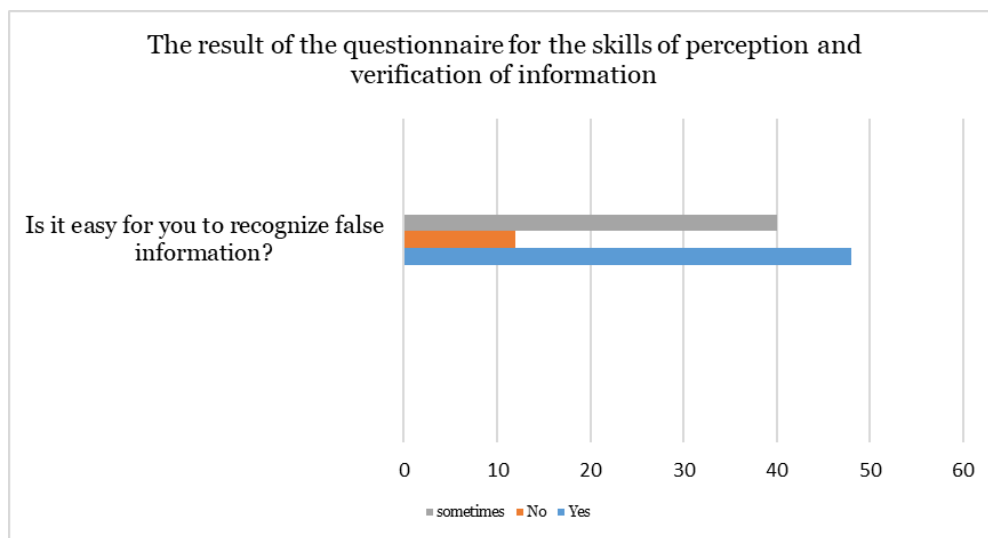
Note: Compiled by the author

«Is it easy for you to recognize false information?» a total of 174 people saw the question. But among them, 83 people took part in the survey and showed their options. Among the information consumed, the ability to recognize false information is also a manifestation of media literacy. As a result of the study, it can be seen that 48% of people recognize false information. The share of those who only occasionally recognize false information reached 40%. The share of those who could not distinguish

false information from true information was 12% (Figure 6).

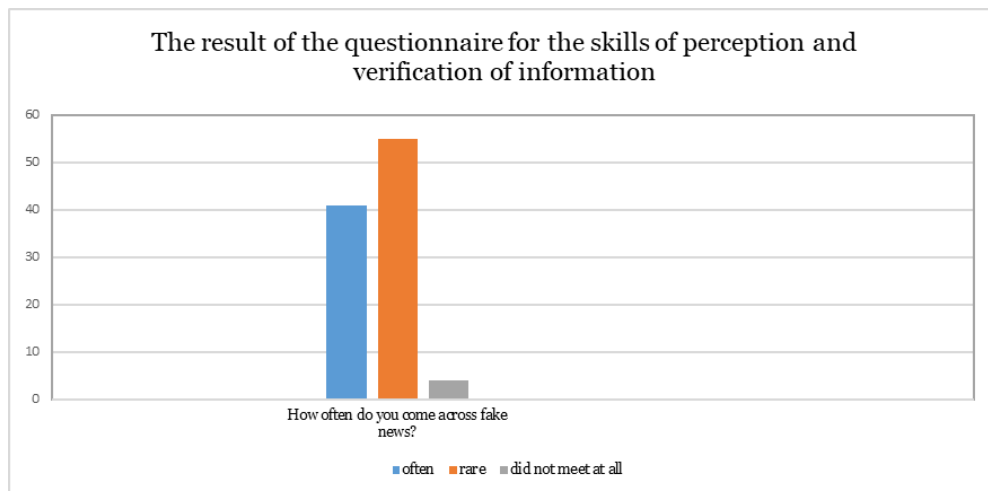
«How often do you come across fake news?» a total of 184 people watched the survey on the fourth question. Of these, 80 people took part in the survey and answered. 55% of participants indicated that fake news is rare, while 41% of participants said that they often come across false information on social networks. The percentage of those who said that they did not come across fake information at all is 4% (Figure 7).

**Figure 6**  
*Respondents' Ability to Recognize False Information*



*Note: Compiled by the author.*

**Figure 7**  
*Frequency of Encountering Fake News among Respondents*

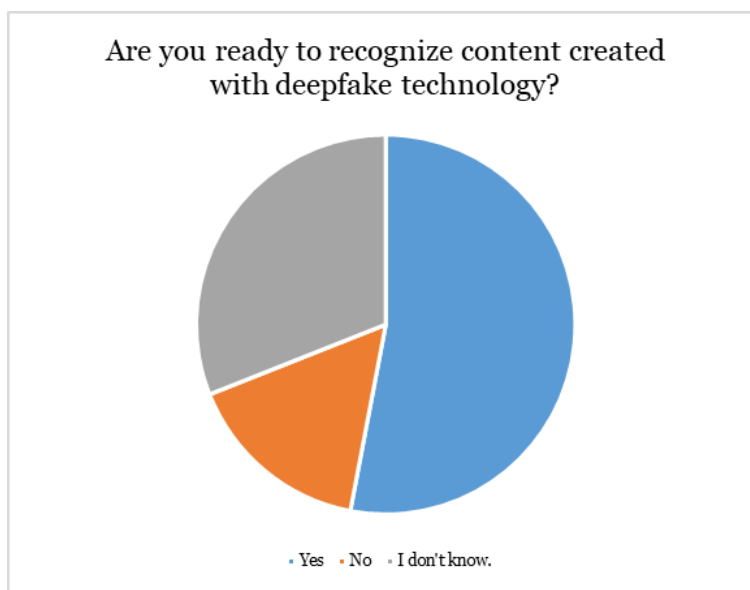


*Note: Compiled by the author.*

«Are you ready to recognize the content created with deep fake technology?» a total of 186 people read the question. Deep face is a deep learning algorithm used for image recognition (Ara et al., 2022). In particular, 80 people took part in the survey. The

share of people who recognize content created by technology is 53%. The share of those who do not know such technology – was 31%. Those who do not know the content created by such technologies showed 16% (Figure 8).

**Figure 8**  
*Respondents' Ability to Recognize Deepfake Content*



*Note: Compiled by the author*

A total of 411 people took part in the survey. The results of the above survey show that the issue of information security and media literacy in modern Kazakh society still needs systematic work. Because, given that the survey was conducted among people with higher education, it can be concluded that such an average indicator is not enough. It is natural that people with higher education have significantly higher media immunity compared to people without higher education in society. Therefore, we believe that the formation of media immunity in society should begin with a literate category in society, and we assume that in a year it will be possible to conduct exactly the same survey in this environment in order to determine whether there is a development trend according to this study.

### Conclusion

Studying the mechanisms of interaction between a person and the information environment, the search for the most optimal models that allow the effective

use of media technologies is one of the main tasks of media Ecology researchers. This is due to the fact that in the era of digitalization, which can have a huge impact on the human psyche and socio-cultural processes in society in the information environment, ensuring consumer information security is the most urgent problem. Determining the level of media literacy among users of the modern information space, especially in the academic environment, it is possible to consider ways of forming media literacy.

The following recommendations can be given on the formation of information immunity in the academic environment and the improvement of media literacy:

- It is necessary to integrate the education system, that is, to introduce media and information literacy courses in educational institutions. These courses will help you develop skills in identifying misinformation, assessing the reliability of sources, and critically analyzing information.

- It is necessary to introduce tools for detecting false information based on artificial intelligence.

By developing algorithms that analyze media texts, images and videos, it is possible to combat misinformation by putting them into public use. For example, among them we can consider the development of platforms for verifying the authenticity of information, the use of fact-checking services at the global level.

The development of information immunity requires integrated approaches and actions organized by the state. By combining education, technology, science and international cooperation, society can

be protected from the harm of misinformation. For the implementation of these proposals at the world level, joint action of states and international organizations is necessary.

### Acknowledgments

To the author of the telegram channel «Gylymbılım bar jurttar» (<https://t.me/mediatanym>) Dina Imambai for her help in conducting the above survey.

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*Tergembay Kenzhegul* – development of the research idea and methodology, interpretation of results, manuscript writing, and approval of the final version.

*Moldabayev Khassen* – organization of the survey, data collection, and initial analysis.

*Abdrakhmanova Ainur* – literature review, theoretical analysis, and manuscript editing.

*Tulebayeva Sandugash* – statistical processing and preparation of results.

*Abulkassimova Gakku* – development of practical recommendations and manuscript review.

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*Received: November 19, 2025*

*Accepted: February 14, 2026*