Processes of Implementation, Influence and Adaptation of Generative Artificial Intelligence in the Media in Bulgaria

Empirical Study of the Center for Media Studies at the Faculty of Journalism and Mass Communication of Sofia University „St. Kliment Ohridski“[1]

Prof. Dr. Vesselina Valkanova

Abstract: In recent years, the introduction of Generative Artificial Intelligence in the media and journalism has become one of the most significant technological and social challenges of the 21st century. The development of algorithms capable of creating text, images, audio and video with similar or higher quality than human ones leads to fundamental changes in the way information is created, distributed and consumed. This development is already having a tangible impact on professional standards, ethical norms, economic models and the value framework of journalistic practice. This article presents the results of the first representative empirical study in Bulgaria among journalists, editors, media managers on the level of implementation, attitudes and ethical positions regarding the penetration of AI in the Bulgarian media.

Key words: Artificial Intelligence (AI), Journalism, Ethics, AI in Media, Media Studies, Media Environment in Bulgaria, Public Discourse, Public Policy

AI in the Media – Global Context

Despite the growing interest, the effects of artificial intelligence on the news industry and the Bulgarian media environment remain poorly researched, and globally there is insufficient emphasis on the consequences of the news industry's dependence on artificial intelligence technology companies.

[1] This article/research was funded by the Bulgarian National Science Fund, contract number № КП-06-Н75/6 from 07.12.2023, within the project "Media studies in Bulgaria – meta-analysis, methodology and approaches in surveys of the impact of media transformations on social processes.

We are witnessing the media industry's concerns and doubts about the implementation of artificial intelligence, while news media such as the "New York Times", "Associated Press", "Washington Post", ESPN and "Semafor", and many others are already investing in research and measures to incorporate technology into editorial activities and processes together with journalists, while adhering to ethical and editorial standards[2].

The fear of job losses is accompanied by the birth of new jobs, for example, editors and senior editors for AI strategies and innovations, editorial and product strategists, and large media are increasingly actively hiring employees for such functions.

Experimenting and observing the development of tools and processes for the introduction of generative artificial intelligence at all levels in the news media, creating flexible teams working on ambitious news experiences with artificial intelligence, using AI to accelerate work in the editorial office and to deal with new challenges, while preserving its values and traditional standards, is clearly emerging as one of the main tasks of media management in the new decade.

It is about a new culture, a vision of the future, related not only to traditional machine-mediated activities in modern newsrooms such as: monitoring social media, managing large data sets used in news stories, analyzing audience engagement, etc., but to engaging the audience in a completely new type of news and a new type of news experience with more connections, patterns in data, multiple sources, converting stories for different channels and platforms.

What processes and activities, besides the current machine-mediated activities − tagging, categorization, adding metadata, title suggestions and SEO, editing, organizing research, permissions for processing and moderating comments, can be "entrusted" to AI − the news industry already has the answer − gathering and producing news, engaging the audience, creating streams of breaking news from multiple sources. Freeing journalists from routine activities allows natural intelligence to focus on in-depth analytical and investigative journalism.

There remain issues of intellectual property, accuracy, transparency, confidentiality, quality, factual inaccuracies, out-of-context reporting and the risk of misinformation, issues of safety, stability, interpretability, fraudulent fact-checking. There remains the issue of trust and

[2] Deck, Andrew. The Washington Post's first AI strategy editor talks LLMs in the newsroom. // NiemanLab, 28 March 2024, Available from: https://www.niemanlab.org/2024/03/the-washington-posts-first-ai-strategy-editor-talks-llms-in-the-newsroom/

transparency, bias and low quality, further leading to audience disengagement from the news, and to increased control of the media by technology platforms.

For their part, universities are recognizing how the rapid development and widespread availability of accessible tools powered by artificial intelligence have forced a rethinking of what it means to be critically literate in the digital world[3].

The Bulgarian Context and Media Research on the Topic

The quantitative growth of studies on global media systems through different focuses and thematic emphases undoubtedly contributes to the accumulation of an empirical base and to expanding the scope of research, to reaching more relevant results in the dynamic media environmentconclusions, generalizations, typologies around the world.

A lot has been achieved in our country in terms of media research[4]: scientific articles, monographs, collective studies, dissertations, expert analyses, sociological surveys, annual reports, documents of institutions, regulatory bodies, non-governmental organizations, foundations analyze the problems of the environment, media and journalism. However, we cannot say that the full picture is given: the information that these sources provide is often sporadic and lacks continuity, integrity and systematicity, and sometimes objectivity and representativeness − to a large extent this also applies to sociological research on media problems.

In Bulgaria, systematic academic research dedicated specifically to generative artificial intelligence and its impact on the media is still lacking. There are individual publications and expert comments that touch on the topic in a broader context – digital transformation, automation of editorial processes, media literacy and the fight against disinformation. During the period 2023–2025, the Bulgarian scientific and professional community began to study the effects of generative artificial intelligence on the media and journalism, but this scientific problem remains

[3] Csilla Weninger, Huimin Xu. AI, representation, and critical digital literacy: Navigating visual bias in the digital age.// System, Volume 136, 2026, 103896, ISSN 0346-251X, https://doi.org/10.1016/j.system.2025.103896. (https://www.sciencedirect.com/science/article/pii/S0346251X25003069)

[4] Valkanova, Vesselina, Nikolai Mihailov. Media Studies and Transformations in the Media Environment in Bulgaria.// Valkanova, Vesselina, Nikolai Mihailov. (Ed.). Media and Communication: Transformations and Development in the Digital Age. Sofia: Faculty of Journalism and Mass Communication, Sofia University "St. Kliment Ohridski", 2024, p. 15-32.

fragmentarily studied, there is a lack of comprehensive scientific research and it is still in an early stage of development, with limited empirical data.

In this context, we lack a systematic and sustainable scientific study that would analyze the social and professional transformations, value aspects and long-term consequences of the implementation of generative artificial intelligence in the Bulgarian media.

Empirical Research Dedicated to AI in the Media at the MSC

The goal of the Media Survey Center (MSC)[5], established in 2024 at the Faculty of Journalism and Mass Communication of Sofia University "St. Kliment Ohridski", when undertaking focused research is that the results will be useful both for researchers in the field of media and communications, and for all those who are practically engaged in this activity, especially in the new conditions of the media market in our country for a clearer orientation in the media environment in Bulgaria, especially in view of the changes resulting from the digital transformation.

This article presents results of the first empirical study in Bulgaria, dedicated to AI and the media, on the topic "Processes of implementation, influence and adaptation of generative artificial intelligence in the media" among journalists, editors and media managers, aimed at establishing the degree of implementation of generative artificial intelligence in journalistic practice, attitudes towards it, as well as expected opportunities, benefits, challenges and risks.

The study provided empirically validated data and made it possible to draw conclusions about the state and trends in the use of AI in the Bulgarian media. At the same time, the key risks and opportunities for journalism and society were identified on the basis of the study.

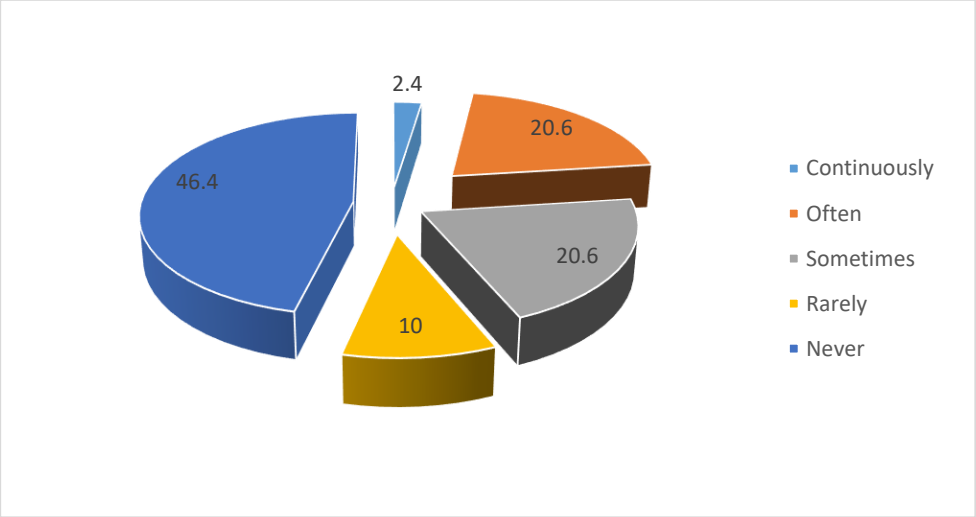
The study was conducted during the period March-May 2025 using the online survey method. The study has a national scope, covering active journalists, with 224 colleagues surveyed. Of the respondents, 77 percent have a higher education − a master's degree, 14 percent are specialists or bachelor's degrees, 9 percent have a doctorate in social sciences. Nearly 75 percent of the respondents are from Sofia, a little more than a quarter are from regional cities, and a little

[5] The Media Survey Center explicitly includes topics on digital transformation and AI in journalistic practices. The project provides a methodological framework (meta-analysis, indicators, monitoring) and is in the process of accumulating data: https://www.mediasurveycenter.com/

more than 11 percent are from smaller cities. The distribution of respondents by gender is as follows − 62 percent are women, 38 − men.

The majority of the journalists, who participated in the study (54%) stated that they do not use artificial intelligence, but still nearly 45 percent answered that they do, only a small part of the colleagues could not estimate.

When asked "How often do you use artificial intelligence?" a large part − more than 46 percent, say never, but at the same time nearly 50 percent say often, more than 20 percent − sometimes.

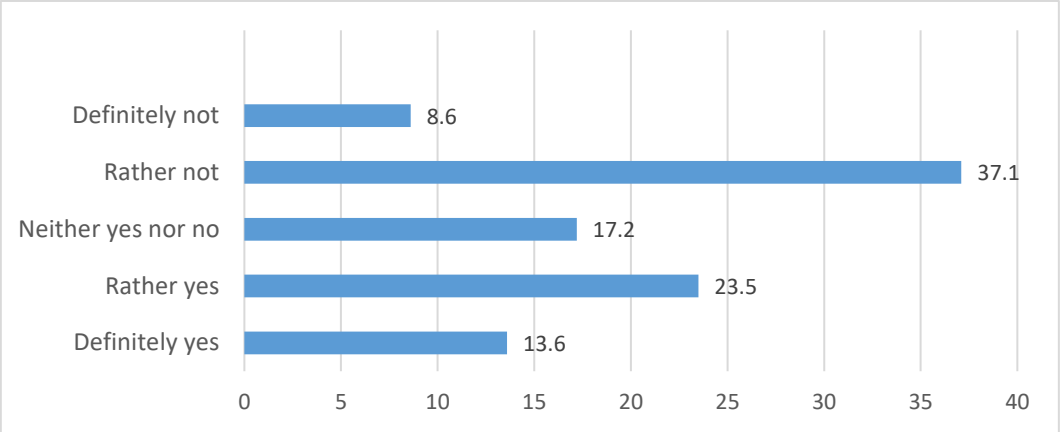


The ratio of those who use and those who do not use AI in their work remains the same; of those who answered positively, a significant share use it for searching for information, not so much for creating content. AI is widely used for data summarization (22%) and translation – in equal proportions, a significant part of the respondents use it for generating images (18%), for converting audio to text (13%), for correcting texts (11%), for entertainment (7%), for writing projects (7%).

The most used tool remains Chat GPT (27%), however, a small part of the respondents mentioned DeepL (3%), DeepSeek (2%), Copilot (2%) and Perplexity (2%), other − 13%. The share of journalists who have undergone special training in using AI in their work is still low − 12 percent.

To the question "Do you think that AI improves the efficiency of your work?" A significant share of journalists believe that AI improves the efficiency of their work – 42 percent.

As for the answers related to trust in information more than a third of respondents answered positively to the information and publications created by artificial intelligence – that they completely trust it (13.6%) or that they rather trust it (23.5%).

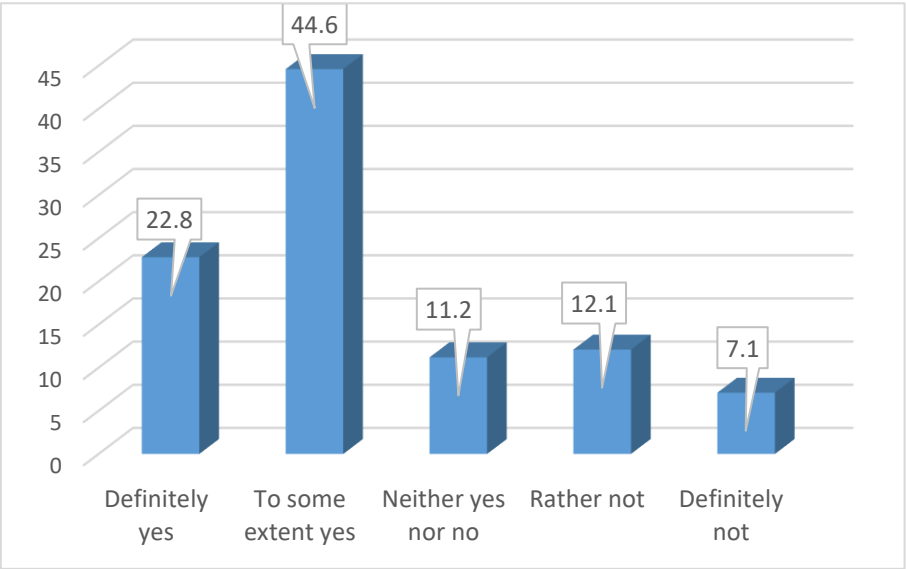


The hesitant colleagues with the answer "Neither yes nor no" are a significant share – 17.2 percent. Those who declared distrust of information generated by AI – with the answers "rather no" or "definitely no" are almost half – 46.7 percent.

More than 80 percent (83.5%) of the respondents believe that it is necessary to adopt new ethical rules for journalists to regulate the use of generative AI, while 10.3% reject this need, a significant part of the respondents (6.3%) cannot judge.

The colleagues are united around the opinion that content generated with the help of AI should be specially marked to make it clear that it is not solely the result of human activity – 86% of respondents answered affirmatively to the question "Should content generated with the help of AI be specially marked to make it clear that it is not solely the result of human activity?", but nearly 9% do not know, and more than 5% answer negatively.

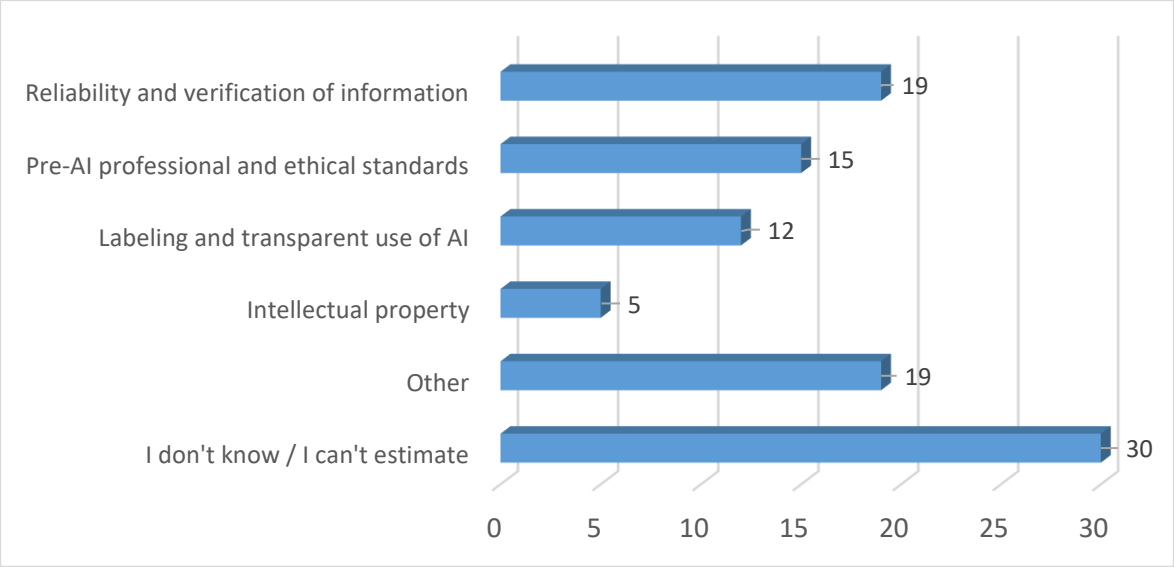
The question: "Do you see AI as your professional competitor in the near future?", related to fears of AI entering the media and its competition in the profession in the near future, gives interesting answers – fears of professional competition are categorically shared by only less than 15% of respondents (13.6%), the majority of them answer negatively – nearly 45%– of them, 8.6% gave a categorical negative answer, 37% of colleagues indicated an answer "rather not". However, the responses of colleagues who see AI as a potential professional competitor in the near future cannot be ignored – in total, those who gave a positive answer are 37 percent, together with those who hesitate, this share exceeds 50 percent.



A significant share of respondents − 66 percent, always check the reliability of information received from AI, 14.4% answer that they sometimes check, and a significant share of journalists cannot judge − 18 percent.

The means and methods that colleagues use to check the reliability of information received through AI are, first of all, the use of other sources (53.5%), checks on the Internet (7.7%), additional questions from AI (5.8%), applications for checking credibility such as Human in the Loop (3%), LIME, SHARP and Plag − 1% each. Only 5 percent of respondents do not bother to check the reliability of information, and what is more disturbing is that nearly 23 percent of respondents cannot judge.

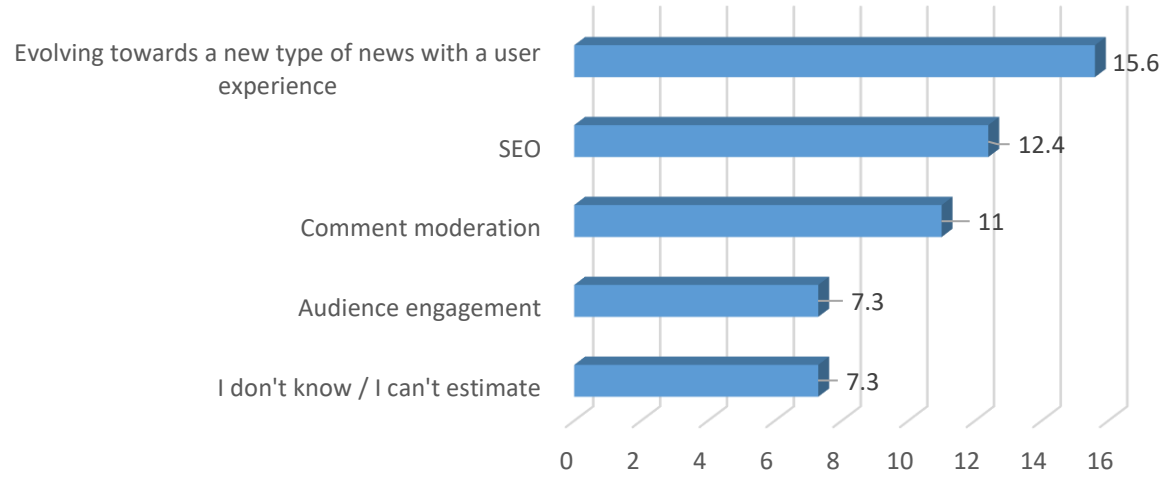
The majority of those who answered the question "What ethical and editorial standards are key when using AI in journalistic work?" indicated adherence to reliability and verification of information (19%), 15 percent of respondents indicated existing professional and ethical standards before the advent of AI, and more than 10 percent indicated labeling and transparent use of AI. It is encouraging that, although a small percentage of colleagues indicate copyright among the standards in this regard. In the answers to this question, the fact that nearly a third of respondents (30%) do not know or cannot judge is disturbing.



Those who answered positively to the question "Do you think that the introduction of AI will reduce jobs and threaten the profession?" are a significant majority of more than 67 percent, with 22.8% answering categorically, and a more significant share − 44.6% thinking that "somewhat yes". The share of those who hesitate is 11%, and colleagues who gave a negative answer are nearly 20 percent − including: those who answered "rather no" − 12%, "definitely no" − 7%.

The assessment regarding the threats to traditional journalistic values as a result of the use of AI is related primarily to the quality and accuracy of information (66.5%), intellectual property (63.8%), transparency of sources (46.9%), and trust (44.6%).

The majority of respondents report the presence of risks to the accuracy of information from the introduction of AI, with the majority reporting the risk as medium (51.3%), in second place and with a high quota are colleagues reporting a high risk of AI entering the media (46%), and a small percentage categorize the risk as low (2.7%).



The most risky are considered to be disinformation (71.9%), factual inaccuracies (69.2%), exposure of facts out of context (51.8%) and fraudulent fact-checking (49.6%).

When asked which Bulgarian media is most involved in the use of AI in editorial work, the answers are scattered among several Bulgarian media – "Pogled Info", "Aktualno", "Bulgaria on Air", "ClubZ", "Vesti BG", "Dnevnik", "Dunav Most", "Trud".

Regarding the processes for which journalists and editors believe that AI can be a full-fledged tool, the following answers received a high quota: managing large data sets (72.5%), monitoring social media (45.4%), creating models in processing and analytics (45.4%), and for data (44%), converging publications for different channels and platforms (36.7%), expanding sources (35.8%), headline suggestions (28.4%), organizing research (28%), editing (27.1%), tagging and categorizing information (26.1%), adding metadata (25.2%), news gathering and production (20.6%), creating streams of breaking news from multiple sources (19.3%), evolving towards a new type of journalism with a user experience (15.6%), SEO (12.4%), moderating comments (11%), analyzing audience engagement (7.3%).

Summaries and Conclusions:

The study confirms a series of hypotheses formulated at the stage of planning the study and constructing a cover letter, namely:

- The implementation of generative AI in the Bulgarian media is taking place in a fragmented manner, without a centralized strategy and with varying degrees of

technological maturity in different typologies of media, which leads to an uneven distribution of benefits and risks.

- AI changes professional roles in journalism, reducing time for routine tasks, but increasing the need for critical thinking, editorial control and ethical judgment.
- The use of AI gives rise to new ethical dilemmas – related to authorship, transparency, influence and algorithmic bias – which are currently not adequately regulated in Bulgarian media practice.
- The audience in Bulgaria is skeptical of content created with AI, especially on sensitive topics (politics, healthcare, justice), but is more inclined to accept it in an entertainment and lifestyle context.
- The lack of systematic training and professional standards for working with AI increases the risk of abuse, disinformation and a decrease in trust in the media.

Comparison with European practices shows that the integration of clear regulations, ethical guidelines and transparent processes in the use of AI can strengthen trust in the media and improve the quality of journalistic content.

The results of the study and the meta-analysis of comparable nationally representative studies by the Center for Media Studies[6] outline the national context of the topic of the application of artificial intelligence in the media environment. The Bulgarian media environment has already been the subject of intense digital transformation over the past two decades. In conditions of economic pressure, limited resources and dynamic editorial processes, the implementation of generative AI is associated with both new opportunities and new threats. Among the potential effects are:

[6]In the period 2023-2025, the Center for Media Studies conducted 3 representative sociological studies dedicated to the media environment in Bulgaria: “Journalistic skills, competencies, roles and values” - this is the topic of a key empirical study conducted by the team of the Center for Media Studies, together with sociologists from the Bulgarian Academy of Sciences; another major empirical study that the Center for Media Studies organized in 2023 is "Transformation and Convergent Models of Journalism" - under the project “Transformation and Convergent Models of Journalism in the Process of Digitalization, in the Conditions of a Digital Society and in a Digital Communicative Context: Dispositive Analysis” and the present study, the subject of this publication "Processes of Implementation, Influence and Adaptation of Generative Artificial Intelligence in the Media". Available from: https://www.mediasurveycenter.com/%d0%bf%d1%83%d0%b1%d0%bb%d0%b8%d0%ba%d0%b0%d1%86%d0%b8%d0%b8-%d0%b8-%d0%b8%d0%b7%d1%81%d0%bb%d0%b5%d0%b4%d0%b2%d0%b0%d0%bd%d0%b8%d1%8f/

- Changing professional roles – automation of routine tasks and a focus on analysis, verification and interpretation of content;
- Erosion of trust – in the absence of transparency in the use of AI tools, the audience may perceive content as manipulated or unreliable;
- Economic consequences – cost reduction through automation, but also the risk of layoffs of journalistic positions;
- Ethical dilemmas – related to authorship, personal data protection, algorithmic bias and liability for errors.

This first scientific study on the topic in Bulgaria analyzes the professional perceptions, reality and expectations of media professionals.

Future systematic and sustainable scientific research could analyze in a broader plan the social and professional transformations, the value aspects, the prospects and the long-term consequences of the implementation of generative artificial intelligence in the Bulgarian media, will contribute to the creation of a rich corpus of data and analyses on generative artificial intelligence in the Bulgarian media, which will be accessible to the scientific community and will serve as a basis for future research. This, in turn, will contribute to improving the audience's understanding of the role of AI in news content and increasing trust in responsible media practices. Last but not least: expanding research on the topic will support legislative and regulatory processes by providing evidence and recommendations based on scientific data.

Bibliography:

Deck, Andrew. The Washington Post's first AI strategy editor talks LLMs in the newsroom. // NiemanLab, 28 March 2024, Available from: https://www.niemanlab.org/2024/03/the-washington-posts-first-ai-strategy-editor-talks-llms-in-the-newsroom/

Chan-Olmsted, Sylvia M. 2019. "A Review of Artificial Intelligence Adoptions in the Media Industry." International Journal on Media Management 21 (3–4): 193–215. doi:10.1080/14241277.2019.1695619.

Csilla Weninger, Huimin Xu. AI, representation, and critical digital literacy: Navigating visual bias in the digital age.// System, Volume 136, 2026, 103896, ISSN 0346-251X, https://doi.org/10.1016/j.system.2025.103896. (https://www.sciencedirect.com/science/article/pii/S0346251X25003069)

de-Lima-Santos, M.-F.; Ceron, W. Artificial Intelligence in News Media: Current Perceptions and Future Outlook. Journal. Media 2022, 3, 13-26. https://doi.org/10.3390/journalmedia3010002

McKnight, Lee Warren, Over the Virtual Top. Digital Service Value Chain Disintermediation Implications for Hybrid Heterogeneous Network Regulation (September 13, 2014). 42ndTPRC Research Conference on Information,

Communication, and Internet Policy, George Mason University School of Law September 12-14, 2014, Available at SSRN: https://ssrn.com/abstract=2495901 or http://dx.doi.org/10.2139/ssrn.2495901

Ouchchy, L., Coin, A. & Dubljević, V. AI in the headlines: the portrayal of the ethical issues of artificial intelligence in the media. AI & Soc 35, 927–936 (2020). https://doi.org/10.1007/s00146-020-00965-5

Trejos-Gil, C. A., & Gómez-Monsalve, W. D. (2024). Artificial Intelligence in Media and Journalism. Systematic Review on Spain and Latin America in Scopus and Web of Science Databases (2018–2022). Palabra Clave, 27(4), e2741. https://doi.org/10.5294/pacla.2024.27.4.1

Valkanova, Vesselina, Nikolai Mihailov. Media Studies and Transformations in the Media Environment in Bulgaria.// Valkanova, Vesselina, Nikolai Mihailov. (Ed.). Media and Communication: Transformations and Development in the Digital Age. International Scientific Conference of the FJMC, held on 26 – 27.10.2023. Sofia: Faculty of Journalism and Mass Communication, Sofia University “St. Kliment Ohridski”, 2024, ISBN 978-619-7567-25-0, p. 15-32.