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POTENTIALS AND PITFALLS OF USING CHATGPT IN JOURNALISM[1]

Abstract

The aim of the article is to describe the role of ChatGPT in journalism from two perspectives: academic and journalistic. Academic perspective is provided through bibliometric analysis and literature review. The data from Web of Science and Scopus shows increased scientific interest in LLMs in social sciences and humanities. However, there are still very few publications regarding ChatGPT in journalism. The main findings of those publications are summarized in the article. Journalistic perspective is provided using critical discourse analysis of journalists' statements, both in news articles and essays as well as in their social media posts. The results of qualitative study reveal that improving the quality and working time is one of the biggest hopes, while disinformation and job loss are one of greatest fears of journalists.

Keywords: bibliometric analysis, ChatGPT, critical discourse analysis, journalism, newsroom, press, qualitative review

JEL: D83, O33, L82

Introduction

The emerge of every new communication technology raises discussion about its impact on journalism. It was no different at the end of November 2022, when OpenAI launched ChatGPT-3. The GPT-3 (Generative Pretrained Transformer 3) is an AI text generator trained on very large amounts of natural language data (Hinton, Wagemans, 2023). However, it is not first AI technology implemented in online journalism – todays weather forecasts, sports events, business reports or elections are reported and managed mostly by software (Floridi, Chiriatti, 2020), as it's

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[1] The study was founded by DSW University of Lower Silesia.

proven to be more accurate (Davis, Grierson, 2021) and effective (Diakopoulos, 2019) than humans. Automation serves as solution for presenting large amount of data in structured form (Sauri, 2022) and readable summaries have been automatically generated from data since 2014 (Davis, Grierson, 2021).

The capabilities of ChatGPT aroused interest of public, journalists and academics, as even previous generation – GTP-2 – created articles identified as written by a human almost half of the time (Tewari et al., 2021). Study by Clark et al. (2021) found, that news recipes, articles and stories created by GPT-3 were impossible to identified as AI-generated by untrained evaluators. Brown et al. (2020) suggest the inverse relationship between model size and human ability to detect model generated text. However, study by Hinton and Wagemans (2023) proves that GPT still requires improvement in three areas: relevance, inference strength and identity. As of May 2023, majority of newsroom executives declared, that less than 5% of journalists in their newsrooms were using ChatGPT (or similar generative AI) on a weekly basis (Statista, 2023).[2]

This article concerns the issue of journalism in the ongoing discussion on efficiency and ethics of Large Language Models. The summary of academic discussions is provided through bibliometric analysis of Scopus and Web of Sciences data, along with qualitative summary of recent publications. The journalistic discussion is summarized using critical discourse analysis of journalistic texts and posts on social media. This study was designed in order to provide answers to research questions divided according to the scope.

Research questions pertaining to academic discussion:

RQ1. What is the in-time distribution of publications regarding ChatGPT and how many of those publications refer to journalism?

RQ2. What are the main findings of publications regarding ChatGPT and journalism?

Research questions pertaining to journalistic discussion:

RQ3. What are the opportunities of using ChatGPT in newsrooms, suggested by journalists?

RQ4. What are the threats to journalism resulting from the use of ChatGPT, pointed out by journalists?

Materials and methods

In order to answer RQ1 and RQ2, I have performed bibliometric analysis using Web of Science and Scopus – databases frequently used in review articles within communication and media studies (e.g. Loecherbach et al., 2020; Joris et al., 2020; Melchior, Oliveira, 2021). The search for publications was conducted in two steps

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[2]   Online survey among 101 newsroom executives.

(corresponding with research questions), illustrated in Figure 1. To provide cohesion of results, databases search was done in one day (29th November 2023).

Step 1 was search for all publications containing term "ChatGPT" in their titles, abstracts or keywords. Step 2 was searching for this term, along with terms "journalism", "press" and "newsroom" (with each term separately). Results of the step 2 were qualitatively verified. Articles irrelevant for the study (e).g. mentioning press as their source, not a subject) and duplicating results were excluded from the study.
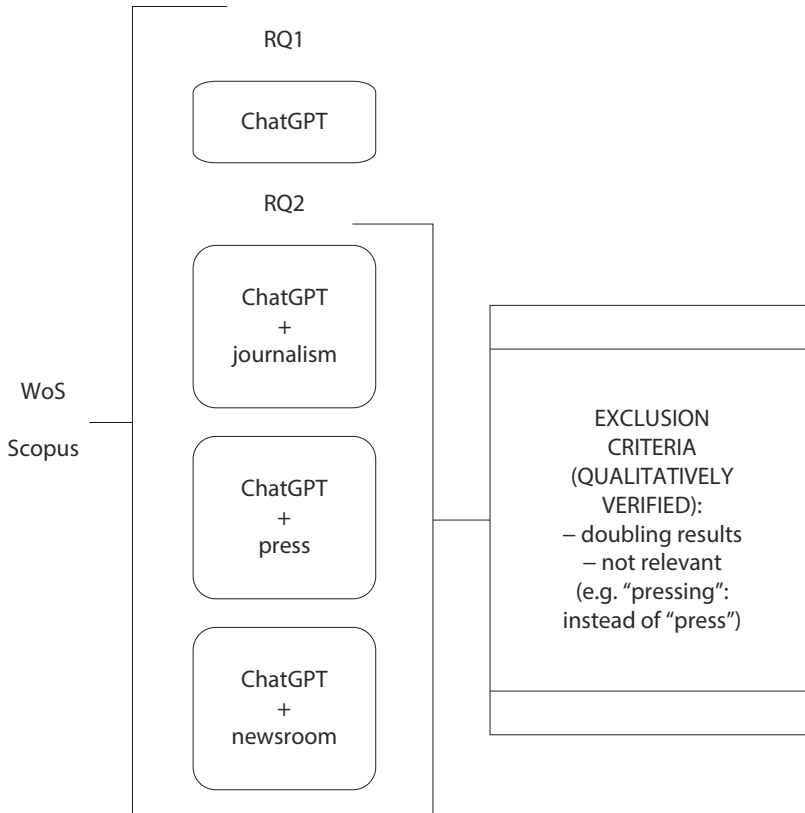

Figure 1. Illustration of sampling process for RQ1 and RQ2
Source: own study.

To provide answers for RQ3 and RQ4, I have conducted desk research in critical paradigm, which is focused on social change (DeCarlo, 2018; Olle, 2018). The study included journalists' statements published in form of news or online essays. Taking into account that news media use social media as sources on the everyday

basis (Paulussen, Harder, 2014), social media posts imported into sampled news were also included in the study.

I used data base of 30 sources collected for previous study and searched for additional sources online. The search for sources was conducted using Google search engine, in private browsing, to avoid information bubble (Nguyen et al., 2014). The search terms were "ChatGPT in journalism", entered in English, with no time or language filter. As in the qualitative research the appropriateness of sample size is a "matter of judgement" depending on researcher (Sandelowski, 1995), the sources sampling was not limited in advance by a number. Instead, I applied saturation approach proposed by Given (2016, p. 135), according to whom saturation is defined as the point at which "additional data do not lead to any new emergent themes". I came through over 200 results (video results as well as results behind paywall were excluded). Some mentioned the issue of AI's impact on journalism superficially, and others delved deeper into the problem. Extracted sources undergone critical discourse analysis, which resulted in demonstration of journalistic hopes and concerns regarding the implementation of ChatGPT in newsrooms.

Results: academic discussion

The results from scientific databases shows the growing academic interest in ChatGPT, yet its connection with journalism is still poorly researched. Figure 2 shows the increasing number of publications regarding ChatGPT, both in Scopus and Web of Science. Main research areas in Scopus[3] were medicine (1,228 results), computer science (1,056 results), and social sciences (830 results). Arts and humanities were 7th most common with 173 results.

In Web of Science, most common research area was general internal medicine (217 results) followed by 'education educational research' with 216 results. Social sciences (assessed as 'social sciences other topics') were represented by 57 publications.

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[3] In Scopus one publication may be assigned to more than one subject area.
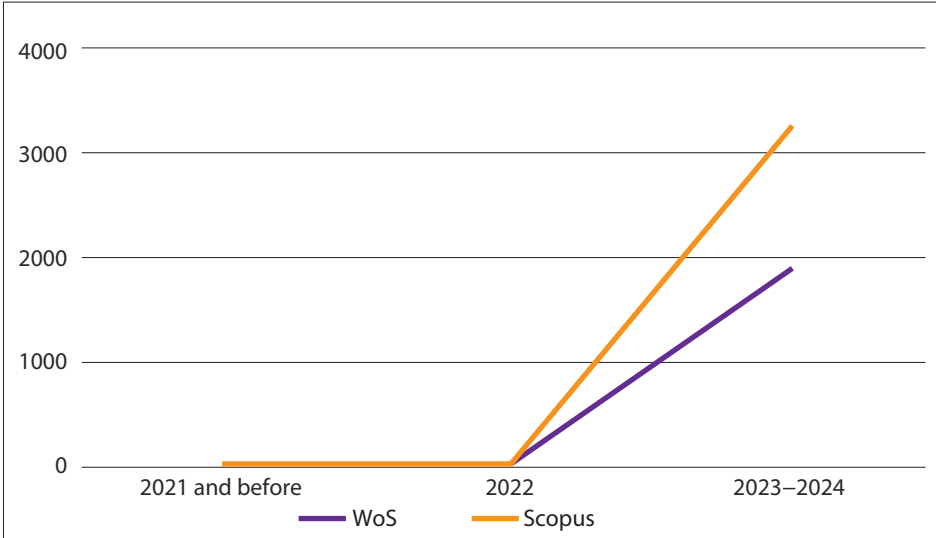
Figure 2. In-time distribution of publications containing term "ChatGPT" in their titles, abstracts or keywords, indexed in Scopus and WoS as of November 29th 2023

Source: own study.

In both databases main document type was article. Articles constituted 49.71% of all WoS results and 42.28% of Scopus results.

The high popularity of arts and humanities, social sciences, and education within ChatGPT-related publications does not reflect the relatively low interest in journalism. Combining results regarding ChatGPT with connection to journalism, press or newsroom, both in Scopus and WoS, and after exclusion of doubling and irrelevant results, total number of publications was 10. Article by Zambrano et al. (2023) does not refer directly to journalism, nonetheless its findings are relevant for journalism and press research, as proven by authors. In order to answer RQ2, I provide qualitative summary of articles regarding ChatGPT and journalism (press/newsroom) in Table 1.

Table 1. Qualitative summary of articles ChatGPT and journalism (press/newsroom)

Publications	Main findings
Cuartielles et al. (2023)	On the basis of interviews with fact-checking professionals in Spain, authors revealed ambiguities of ChatGPT-3.5 applied as fact-checking tool. It may be used for reporting, detection and debunking. According to fact-checkers, implementation of Chat GPT may made their work routine hindered, reinforced, or expanded. Lack of sources transparency is mentioned, among others, as disadvantage of this AI technology.

Dale (2023)	Author identified 10 major commercial providers of earlier iterations of natural language generation technology, of which one – United Robots – develops text models appropriate to the client's journalistic style. Dale discussed possible scenarios for those companies, e.g. if the template will no longer be crucial in the language generation process.
González-Arias, López-García (2023)	Focusing on case of Spanish press (176 articles), authors researched public debate on ChatGPT. The most often raised issue was the need for regulation and control of the development of AI (22.9%). Only 2.7% of articles discussed the impact ChatGPT may have on journalism, and negative predictions were dominant. Public worries about the great possibility of disinformation spread.
Gutiérrez-Caneda et al. (2023)	Based on benchmarking, ChatGPT walkthrough and experiment, authors' findings suggest massive cut of workload for journalists thanks to integration of AI into newsrooms. At the same time jobs disappearance in journalism is not predicted. The threat is, that lack of proper legal regulations will lead to misinformation spread through AI tools.
Habibzadeh (2023)	Author used GPTZero to assess 50 paragraphs created either by humans or ChatGPT. GPTZero had an accuracy of 80% in identifying AI-generated texts. GPTZero classifies human-written text as AI-generated (false-positive) at the 10% level and assesses AI-generated text as human-written (false-negative) at the 35% level.
Lopezosa et al. (2023)	On the basis of interviews with AI and journalism lecturers and researchers, authors conclude that AI has potential to bring huge change to entire journalistic process. Yet, AI is seen rather as a tool than a replacement for humans.
Masotina et al. (2023)	Authors studied UK national newspapers (1389 articles) mentioning "ChatGPT" published from 30th November 2022 to 31st May 2023. Only 67 articles (4.8%) mentioned "transparency" or "transparent". Authors also noted that OpenAI does not refer to transparency while describing their safety policies.
Pavlik (2023)	Article co-authored by ChatGPT, where AI answers questions regarding e.g. journalism, nature of AI and creativity. Human author concludes, that "ChatGPT has an impressive level and range of knowledge of journalism and media" (p. 92) including academic knowledge. One of the conclusion is that ChatGPT may pose a threat to human journalism, especially due to economic circumstances.
Ufuk (2023)	ChatGPT cannot effectively review the scientific content or method, it's unable to make ethical and moral judgments. There is crucial role of open data publication for detection of fabricated articles.
Zambrano et al. (2023)	On the example of press releases and governmental addresses, authors compare two coding tools: ChatGPT and nCoder. ChatGPT better captured variety of language structures and provided explanations for its decisions.

Source: own elaboration.

Review of academic publications regarding ChatGPT and journalism (press/newsrooms) reveals main concerns of researchers, fact-checkers and journalists. Discussed disadvantages include lack of transparency, lack of legal regulations and threat of large scale disinformation spread. While job loss for human journalists is debated, most sources describe AI as a tool for journalists rather than a replacement. AI is also presented as ineffective tool for review of scientific articles (method and reasoning), yet it is quite successful in detection of AI-generated texts. Literature suggests the general positive outcomes for researchers, journalists and fact-checkers, whose work may be improved (in terms of cost, time and efficiency) due to the ChatGPT implementation.

Results: journalistic discussion

Positive dimension: advances and hopes

a) Inspiration and research

ChatGPT may serve as tool for generating insights (Atlas, 2023). It's used by journalists to find right words and write linking paragraphs human-written pieces. It's also useful in generating headlines (Blum, 2023; Heikkilä, 2023). As Manjoo (2023) states: "I've spent many painful minutes of my life scouring my mind for the right word. ChatGPT is making that problem a thing of the past." Journalists admit, that chatbot serves as source of ideas (Pearl, 2022; Pompeo, 2023; Sirimanne, 2023).

ChatGPT may do research for journalists. For example Manjoo (2023) suggests, that when approaching new topic, experts to talk to may be proposed by ChatGPT. This technology may also suggest what to cover within given topic (Blum, 2023). Sources mention also that ChatGPT may serve as efficient tool for fact-checking. Bassett (2023) considers, that in the future human journalists and fact-checkers could be replaced by generative AI, as news reporting process could become fully automated.

Also, as finishing touch for journalist work, ChatGPT is able to generate slides for presentations (Blum, 2023).

The reduction of overwork, whether it is inventing new ideas, search for sources or pure creation – generating text, pictures, sounds and videos (Bell, 2023), is tempting. As Manjoo (2023) sums up: "Once you start using ChatGPT you pretty much can't stop. (…) Other tech-friendly journalists I know have been going through something similar: Suddenly, we've got something like a jetpack to strap to our work".

b) Interview preparation and quotes find

This application of ChatGPT is related with concepts of inspiration and research. ChatGPT may propose list of questions on the basis of few inputs proposed by user (Blum, 2023). It will model new questions after those given by journalist, imitating the style (Cemaj Hochstein, 2023; Kunova, 2023).

Journalists often use press releases and social media posts as source of quotes. ChatGPT may provide quotes from the web. According to Kunova (2023):

> You can ask ChatGPT to look for quotes from a particular individual and chances are that it finds it. However, take extra time to check where the quote comes from as it can be another writer's work – and this is plagiarism – or it can be made up.

Blum (2023) referring to Johns Hopkins' HUB Magazine, suggests that successful way to avoid information fabrication is use of the phrase "according to" in ChatGPT search, which usually results in models directly quoting a source.

c) Analyzing and summarizing

Generative AI is perceived as best tool (most helpful, practical and ethical in use) for data-heavy tasks (Blum, 2023), as it can identify trends and patterns in data (Bassett, 2023; Frąckiewicz, 2023). ChatGPT may quickly scan and summarize long texts (Kunova, 2023) or even generate personalized news stories from raw data (Frąckiewicz, 2023). Heikkilä (2023) points out, that lots of nowadays journalism reuse the text retrieved from agencies. Generative AI could scanby such texts and generate new ones in a completely automated process. Overall, all the advantages of ChatGPT in journalism raise hopes for cut of work overload and for leaving more space for creative work, also boosted by AI if journalists stuck on a project.

Negative dimension: faults and concerns

a) Disinformation spread / Semi-reliability

ChatGPT, trained on almost the whole internet, is actually designed to be trained on fake news and misinformation (Jaouen, 2023) and it does not provide any fact traceability nor guarantees around information validation (Jaouen, 2023). The data accuracy is also an issue. As stated in article by Blum (2023): "the information database for the free version of ChatGPT only goes up to a time period before the end of 2021, so searches for more current information may yield inaccurate results. The paid version covers more recent data".

All potentials of using ChatGPT in journalism, especially quick creation and distribution of content, may be a double-edged sword when it comes to disinformation. As stated by Bell (2023): "Just think how rapidly a ChatGPT user could flood the internet with fake news stories that appear to have been written by humans".

The remark given by Kunova (2023) denies the time-saving role of ChatGPT, as journalists cannot trust to anything given by LLM:

> you need to fact-check absolutely everything it generates. It goes beyond what you would need to verify if the text was written by a human: ChatGPT will almost always answer your question and if no real information is available, it may make one up. Fact-check maths, names and places and always make sure that everything, well, exists.

Obtained results may also undergo unknown narrative bias (Jaouen, 2023). Use of content produced by ChatGPT does not release journalists from legal responsibility for this content (Boran, 2023).

ChatGPT was called a semi-reliable source in text by Manjoo (2023). Lots of sources suggest that any results provided by generative AI, at its current state, requires verification (Bell, 2023; Blum, 2023; Enes Calli, 2023; Frąckiewicz, 2023; Jaouen, 2023; Manjoo, 2023; Ponsford, 2023; Reilley, 2023). As Manjoo (2023) sums up: "how can any journalist be certain that anything ChatGPT says is reliable? The short answer is: You can't".

b) Copyright infringement

We have already witnessed massive criticism of OpenAI and ChatGPT for unfair use of articles for AI training – news outlets didn't got paid for providing training material. The issue came out after Francesco Marconi's Tweet with list of most common sources used to train ChatGPT-3, provided by the AI itself (Marconi, 2023).

Ponsford (2023): "As has been the case with Google, the future of publishers' relationship with ChatGPT may end with negotiation rather than litigation".

c) Trust issues

Hubert Jaouen (2023) puts forward an interesting remark – that whole "journalism system" relies on trust: "In the press, the value proposition is that journalists cross-check all information. The system is not perfect neither, and also not very transparent so relies on trust." According to Jaouen (2023), if not the trust, people would just use Wikipedia as source of news. Now, if journalists use ChatGPT as source of news, without verifying everything, journalism becomes just skippable step.

The trust issues may results from readers not being able to tell AI-generated and human-written news apart. Khatsenkova (2023) provides following tips to detect GPT-generated content: "If several people ask ChatGPT exactly the same question, it will generate nearly the same answer for each of them. (...) Another clue to look out for is how the AI responds to recent events". The second tip comes from the fact that ChatGPT is trained on the outdated data from before 2023. Boran (2023) underlines the need for journalism to be transparent about its use of generative AI.

d) Privacy violation

It's recommended to avoid putting personal data into ChatGPT, due to its lack of transparency. It's unclear how, where and when such information would be processed (Blum, 2023). According to Heikkilä (2023):

> Journalists should also exercise caution around inputting sensitive material into ChatGPT. We have no idea how its creator, OpenAI, handles data fed to the bot, and it is likely our inputs are being plowed right back into training the model, which means they could potentially be regurgitated to people using it in the future.

After all, if researchers studying online content get confused if the studied material is private or not (Lessig, 1995; Kozinets, 1998; Garcia et al., 2009), expecting generative AI to assess that is wishful thinking.

e) Massive job cuts

Journalists share they fears of massive job cuts due to generative AI with other creative professionals such as writers, artists and marketers. The fact that this technology works faster raises question about future of journalism, which is rooted in logic of market and economy (Kreft et al. 2023). The fear of job loss was articulated in many sources (Bassett, 2023; Lock, 2022; Mitchell, 2023; Pompeo, 2023; Williams, 2023), and often pointed out as major threat.

However, some journalists persuade, that generative AI may be a potential threat only to journalists who lack skill, while "successful journalists are on the safe side" (Shamsul, 2023). Padulla (2023) states that this technology may replace poor journalists and improve the talented ones. According to Kunova (2023):

> No, AI cannot replace you. But it can remove some of the everyday tedium so you can focus on what you do best: actual journalism. (…) As long as you are clear on what it can and cannot do, the tool can help you out with some menial tasks so you can focus on the stories that matter to your audience.

Some journalists feel safe in current position, hoping that taming new technology will help them to improve instead of become unemployed. Those hopes are for ChatGPT being rather a tool than a replacement.

Conclusion

As pointed out by Alves Silva (2023): "The impact of technology on journalism can be both exciting and worrisome". This statement refers to any technology, not only generative AI. Yet, Sirimanne (2023) reminds, that "Previous waves of technological change have created both winners and losers". The aim of this article was to

zoom in the ongoing academic and journalistic discussions on implementation of ChatGPT in journalism. The study revealed hopes and concerns both in academic and journalistic perspective.

Academic discussion on ChatGPT has increased rapidly since the launch of OpenAI's ChatGPT. However there are only few results in Scopus and Web of Science, that discuss the ChatGPT in relation with the field of journalism and press studies. Main findings of those studies suggest the need for transparency and the problem of AI-generated sources. ChatGPT is proven as effective tool for coding and facilitation for journalists and fact-checkers. On the other hand, the strict rules of the media market may contribute to replacement of journalists with ChatGPT. Newsroom already using AI based on templates may decide to switch to ChatGPT, which is also a challenge for companies already providing previous iterations of natural language generation technology.

Journalistic discussion, whether because of more sources or because of an involved perspective, provides more diverse and less superficial reflection. Journalists using ChatGPT underline its advantages in solving time-consuming tasks such as summarizing and analyzing. They point out that it helps by boosting creative work and inspiring, fact-checking, researching and interviews preparation. Yet, the semi-reliability of its results may actually make the use of ChatGPT more time-consuming, at least at its current state. Disinformation is one of the most often mentioned disadvantage. Other pitfalls discussed by journalists are trust issues, privacy violation, and copyright infringement. One of the greatest fears mentioned by journalists are massive job cuts, yet some sources state, that this will only happen to poor journalists. Overall, journalists agree, that the whole process of content creation, curation and distribution could soon be revolutionized by ChatGPT (Alves Silva, 2023; Frąckiewicz, 2023).

Limitations and further studies

Despite the author's best efforts, this study is not without limitations. The applied methodology does not exhaust the issue, both in terms of academic, as well as in journalistic discussion. The choice of databases limits in advance the research material. Scopus and Web of Science favor publications in English.

Future studies shall pay attention to publications written in other languages. The use of Google Scholar or national databases could be helpful. Google Scholar is considered " the greatest volume of scholarly information" (Gusenbauer, 2018, p. 194). For Polish literature, The Polish Scholarly Bibliography (PBN) could serve as valuable source (Kulczycki et al., 2018). The sampling of publications was based on keywords search, which is also limiting by design. It may be assumed with

a great deal of certainty that qualitative search of publications within given areas of research would bring different set of articles for reviewing.

Sampling of journalistic statements was also limited on the stage of study design. Using English language and specific search term affects the results in similar manner as in case of scientific databases search. Author made an effort to avoid filter bubble, yet algorithmic architecture of search engines leaves no doubt as to the objectivity of the sources obtained (Halavais, 2009). The lack of cookies, resulting from private browsing, may also be perceived twofold, as it does not reflect the everyday use of search engines. Study by Bursztein (2017) indicates that only 20.1% of Google consumers use private browsing. The image of ChatGPT as tool/threat for journalism, obtained in this study, is also influenced by search engine optimization, sample size and sampling time.

Future studies could compare opinions of journalists from different countries (or even continents). This study did not differ sources according to their type, i.e. official national media/alternative media; newspapers/news sites/radio/TV/social media. Future research could pay attention to possible differences resulting from such variables. The term "tech-friendly journalist" has been found in one source. Maybe the mechanisms of technophobia and technophilia (Osiceanu, 2015) are not without significance here, yet it requires further investigation.

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