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The digital media environment in wartime. Russian invasion coverage in Ukrainian professional and amateur news media*

Abstract

RESEARCH OBJECTIVE: The aim of this paper is to compare professional and amateur news media (Telegram) coverage of the Russian invasion of Ukraine and to determine the quality of this coverage.

THE RESEARCH PROBLEM AND METHODS: The popularity of Telegram has been growing since Russia's full-scale invasion of Ukraine. To describe the digital media environment in wartime, it is important to observe the activity of both professional and amateur media. Webpages containing news texts were exported with Python programs, and news sources were processed using regular expressions.

THE PROCESS OF ARGUMENTATION: At the beginning of the digital platform era there were hopes of a symbiotic relationship between professional media and amateur digital platforms, where the latter would provide more diverse content, thus helping some ignored groups to be heard by the media. As for Telegram, it has a growing number of users and channels, but there are almost no restrictions regarding content. Thus, together with some "alternative" and "ignored" voices, production of harmful content on Telegram is observed

around the world: hate speech, extremism, racism, conspiracy theories and propaganda. In Ukraine, Telegram is the most popular source of information during the full-scale Russian invasion and Ukrainians trust it, therefore its contribution to informing people should be analysed.

RESEARCH RESULTS: The conducted analysis has demonstrated that popular amateur news media mostly fail to provide clear references to news sources in the war period (in March to October 2022, only every third to fifth post contained a clear reference to a news source). On the other hand, the most popular mass media and amateur mass media sources are mostly the same: media resources connected with the president and the government, verified military sources, etc.

CONCLUSIONS, INNOVATIONS AND RECOMMENDATIONS: The scarcity of news sources given in Telegram posts confirms previous observations about the low quality of content on Telegram. However, in some cases Telegram channels use reliable official or professional media news sources. Thus, some additional steps are needed to improve the situation: legislative changes for Telegram channels, ownership transparency, further monitoring of content quality, and media literacy campaigns for channels' audiences.

KEYWORDS:
Telegram, amateur news media, Ukraine, war journalism, news sources

INTRODUCTION

Quality journalism is vital during war. People are desperate to know the targets of missile strikes, safe evacuation routes, as well as locations of "points of invincibility" where they can charge their electronic devices during blackouts. However, a professional journalist needs some time to verify information and see the complete picture, etc. This is why some people give preference to amateur news media outlets which report news almost immediately. In the case of the Russian full-scale invasion of Ukraine, a lot of anonymous news was spread via Telegram channels.

Before the invasion, the Institute of Mass Information, a Ukrainian professional media organization, analyzed the ten most popular Telegram channels. The results were as follows: none of them was affiliated with a real mass media outlet; 8 channels were anonymous, 1 channel was verified by Telegram; the total audience of these 10 channels accounted for 284.5 million views per month (IMI, 2021a).

Additionally, in 2021 the Institute of Mass Information issued several reports stating that Telegram channels such as ASupersharij and Legitimny had published Russian propaganda before the full-scale invasion: some channels republished manipulative content from Russian federal TV channels (IMI, 2021b); some disseminated pro-Kremlin narratives, such as "Ukraine is a failed state", "the West provokes Russia", "Zelensky is a Western puppet" (Ilyuk, 2021); some quoted Russian politicians and celebrities, including hate speech about Ukraine (Steblyna, 2022).

The popularity of Telegram channels has been growing since Russia's full-scale invasion of Ukraine. According to a USAID-Internews survey, 74% of Ukrainians consume news from social networks, of which Telegram has been the most popular during the war (60% in 2022, compared to 20% in 2021). In 2022, Telegram overtook Facebook, which was the most popular in 2021 (43% compared to 25% in 2022) (Internews, 2022). Thus, Telegram leads in the Ukrainian digital media environment, despite its users' amateur approach to news reporting.

As a rule, academics have two opposite points of view on amateur mass media and citizen journalism. According to the first opinion, amateur media outlets do not follow professional standards and print mostly gossip and unverified information (Puente et al., 2011; Akifah, 2014; Carpenter, 2009). However, according to the second argument, such media sources may play an important role in times of crisis, spreading information about protests and political movements (Salsabila & Adi, 2022), catastrophes, natural disasters, pandemics, etc. (Sheen et al., 2021). Additionally, amateur mass media may be useful in representing some social groups (Carmichael, et al., 2019). Thus, it is important to observe the activity of both professional and amateur media outlets because the contributions of the most popular news sources should not be disregarded.

The aim of this paper is to compare coverage of the Russian invasion by professional and amateur news media outlets and to determine the quality of this coverage. News sources will be analyzed: number of sources per item, most popular sources for each mass media outlet, and the number of sources per text depending on the phase of war (Russian offensive, Ukrainian counteroffensive, positional warfare).

The paper consists of the following sections: in the literature review, the author defines several challenges for professional journalism in the modern digital environment and observes the specifics of news production on Telegram. In the methodology section, ways of identifying news sources for journalism studies and computer sciences are determined, and a method of processing news sources with computer-assisted analysis is proposed. In the results section, data from professional and amateur media is compared. Lastly, in the conclusion and discussion sections, the reality of the modern digital environment, where both professional and amateur media compete for the public's attention, is described.

NEWS SOURCES ANALYSIS

Identification of news sources is extremely important for evaluating the quality of news because sources of information must be verified by journalists before publication. This is especially true for crisis events (pandemics, natural disasters, catastrophes and, of course, wars), when some actors may spread fake news to misinform and manipulate public opinion (Meirik & Franklyn, 2022, p. 3379; Lopez--Garcia & Benites, 2022, p. 7).

As for the beginning of the full-scale invasion of Ukraine, massive disinformation campaigns were launched by Russia to provoke panic, weaken Ukrainian resistance, discredit the Ukrainian government and Armed Forces, hide or distort information about war crimes, intimidate journalists etc. (see reports of Ukrainian professional media organizations: #DisinfoCronicle (Detector Media, 2023); War crimes of Russia against Media and Journalists in Ukraine (IMI, 2023)). Ukrainian researchers found that 88 pro-Russian Telegram channels were created in the first days of the full-scale war that were used "as official sources of the occupiers" or "mimicked the media's behavior, i.e., published regional information overflowing with propaganda and misinformation" (Ilyuk et al., 2022). Ukrainian popular media outlets were used to spread Russian propaganda on social networks about "biolabs" in Ukraine, "Ukrainian Nazis" who place military equipment near schools and theatres, and reports about "smuggling" of western weapons by

Ukraine etc. (Kalashlynska, 2022; Izbirkom, 2022; The Center for Content Analysis, 2022).

Thus, analysis of news sources could show what sources were mentioned by different media outlets and establish the reliability or unreliability of used references and whether the usage of media sources changed depending on the phase of the war. It is important to design representative research tools for such analysis and process enough news texts to be able to see the whole picture.

DIGITAL MEDIA ENVIRONMENT

When it comes to hybrid media systems (Chadwik, 2017), numerous communication platforms compete with each other for audience (Sumiala et al., 2016). News is consumed in and is produced for "echo-chambers"/"filter bubbles" (Kitchens, Johnson & Gray, 2020). According to Entman & Usher's (2018) model, currently in the digital media environment there are plenty of audiences that consume news from several media outlets.

In such an environment, professional mass media outlets are losing their audiences and the number of people who consume news has fallen "from 63% in 2017 to 51% in 2022" (data collected before Russian invasion) (Reuters Institute, 2022). Meanwhile, social networks' audience share is growing, thus attracting increased advertising revenue. Nowadays, 4.9 billion people use these digital platforms, and researchers expect this number to grow further to 5.85 billion users by 2027 (Wong, 2023).

There are some other challenges for professional journalism. A modern-day journalist should know both professional standards and modern multimedia instruments; however, for this journalists need to be properly trained and should do more work in less time (Lopez-Garcia, Rodriguez-Vazquez & Pereira-Farina, 2017).

To sum up, "less diversity, and the reinforcement of prejudices" are observed (Newman et al., 2013) within the "new news ecology", where "the Fourth power" (the press) and "the Fifth power" (the internet and social networks) compete for readers' attention.

NEWS PRODUCTION ON TELEGRAM

Telegram, as a digital platform, is available for everyone who wants to produce any type of content, and users may publish or discuss "whatever they want without any restrictions" (Júnior et al., 2022). "Transparence and accountability" seem to be unimportant for the platform as well (Wijermars & Lokot, 2022, p. 129). Strict moderation of users is also absent on Telegram (Willaert, Peeters, Seijbel & Van Raemdonck, 2022), where professional mass media outlets have to compete with unprofessional or anonymous channels which do not follow professional standards.

As a rule, the production of harmful content is the most popular topic of Telegram research. On this platform, scholars are concerned with dissemination of hate speech and extremism (Walther & McCoy, 2021, p. 114), "racist and violent ideology" (Baumgartner et al., 2020), conspiracy theories (such as QAnon) (Hoseini et al., 2021) and COVID conspiracies (Walther & McCoy, 2021, p. 113). Far-right actors who have been banned for serious violations of rules on Twitter or Facebook can freely share their manipulations on Telegram and "gain prominence in the network, thus casting doubt on the effectiveness of deplatforming for curbing the influence of far-right and other extremist actors" (Urman & Katz, 2020). More than 600 channels and groups that popularize IS ideology were detected on Telegram in 2019 (Clifford & Powell, 2019, p. 3).

One more approach to researching Telegram is its role in some authoritarian countries, where news on Telegram may be an important source of information as it is uncensored by the government. This is why Telegram is also called an instrument for "digital resistance" (Urman et al., 2020). For example, Telegram channels were also used to spread information about election fraud during the 2020 protests in Belarus (Wijermars & Lokot, 2022, p. 140). It was also popular among the Hong Kong protesters (Baumgartner et al., 2020).

However, news production for mass audiences on Telegram has not been studied so deeply. Scholars have analyzed such content, but only on far-right channels (Walther & McCoy, 2021), channels for the protesters in Hong-Kong (Urman et al., 2020; Ng & Loke, 2020; Baumgartner et al., 2020), or "junk news channels" (Knuutila et al., 2020). Thus, this study analyzes popular Telegram news channels

to understand the quality of news and compare it with professional mass media outlets.

NEWS SOURCES AND AMATEUR MEDIA DEFINITIONS

There is some confusion with the term "news sources" as it may be used in several senses. Firstly, in the computer sciences, where some instruments to process news texts are proposed, the term "news source" is understood as a media outlet which delivers information to people (Edelson et al., 2021; Mu & Aletras, 2020). Secondly, in journalism studies, a news source is a person or another resource that is cited in a news text. In this context, researchers study various areas: "voices" that dominate in the news (government mostly) (Sigal, 1973, p. 36). For example, D. Berkowitz found out that "officials in some capacity" are quoted more often in news than other sources (1987). There are also discoveries about usage of sources for covering different topics, such as the environment (Williams, 2015) or finance (Manning, 2013). Additionally, news sources are identified manually in such studies: several researchers use special guidelines to look for a source in a news text (see, for instance (POID, 2023; Chabanenko, 2017)). However, in this study a computer algorithm is proposed.

Thus, these approaches (computer sciences and journalism studies) are combined in this research: algorithms using regular expressions were utilized to process more than 110 thousand texts in order to identify news sources, understood as a person or organization that is cited in a text.

One more term which should be defined is 'amateur news media'. The two most popular ways of describing the contributions of non-journalists are 'citizen journalism' and 'alternative mass media'. However, both terms seem to be inappropriate in the case of Ukrainian Telegram channels. As for citizen journalism, it is usually defined as "the spontaneous actions of ordinary people, caught up in extraordinary events, who felt compelled to adopt the role of a news reporter" (Allan & Thorsen, 2009). In Ukraine news production is an everyday activity for Telegram channels, where official information, pieces of citizen journalism, gossip, blogs, and memes are collected

and published. Alternative media is understood as non-mainstream media, where ignored voices may be heard: "working people, sexual minorities, trade unions, protest groups, people of low status in terms of their relationship to elite groups of owners, managers and senior professionals can make their own news, whether by appearing in it as significant actors or by creating news relevant to their situation" (Atton, 2002, p. 11). However, Telegram news channels do not produce alternative content for "alternative" people. These channels mostly cover the same topics as the professional mass media and their audience is extremely wide. Thus, term "amateur" news media is used in this research. Here, Keen's conception of "the cult of amateur", where free UGC replaces professionals – in particular journalists and editors – as gatekeepers, is used (Keen, 2007, p. 16). Amateur news journalism is understood as non-professional, free, specialized activity within some field (news reporting), with minimal knowledge of the sphere or its objectives and no responsibility to society, professional standards, ethics, functions of journalism etc. Amateur media is a platform for this content (in this research it is Telegram).

MATERIAL

Two professional mass media resources and two Telegram channels were used for this research:

- Ukrayinska Pravda (https://www.pravda.com.ua/). UP is the oldest Ukrainian online media resource, founded by famous Ukrainian journalist Georgiy Gongadze in 2000. Now it is ranked 4th in the category "News and Mass Media" with 57.7M views per month, according to SimilarWeb data (SimilarWeb, 2023).
- Dzerkalo Tyzhnia (https://zn.ua/). DT is one of the oldest Ukrainian newspapers, founded in 1994. It was founded by the US entrepreneur Yuri Orlykov and Ukrainian journalists Valerii Mostovyi and Yulia Mostova. It holds 59th position in the "News and Mass Media" category, with 3.4M views per month (SimilarWeb, 2023).

The above-mentioned mass media were chosen for the following reasons:

- they publish high-quality content with more than 96% level of compliance with the professional standards of journalism (according to the White list (a list of the highest-quality media), compiled by the Institute of Mass Information, a Ukrainian professional media organization (IMI, 2022));
- they are considered respectful and influential (MediaSapiens, 2020; Bratuschak, 2020; Dzyuba, Zhukovsky & Zheleznyak, 2007);
- they have full news archives that are available for download.

As for telegram channels, the two most popular were chosen:

- Trukha is the most popular Telegram channel in the news and media category, with 2.7M subscribers. The channel is unverified by Telegram and was founded in October 2019; the founder is not specified.
- Ukraina Seychas, US is the 2nd-most popular channel, with 1.7M subscribers. The channel is verified by Telegram. It was founded in October 2018; the founder is not specified.

Thus, these media outlets should be compared to understand the specifics of Russian invasion coverage in the digital environment of Ukraine.

RESEARCH QUESTIONS

As the aim of this paper is to compare coverage of the Russian invasion by professional and amateur news media outlets and to determine the quality of this coverage, there are several research questions:

What is the difference in news quality (the average number of news sources used per text in particular) between professional and amateur media outlets during the war?

What types of news sources are most popular in professional and amateur media outlets: official for professional, alternative for amateur? Do amateur media outlets quote official Russian sources more often?

METHOD

Webpages with news texts from professional mass media websites and Telegram channels were exported with module requests (total 48,153 items for professional, 70,364 for amateur). Thereafter, the texts were processed with the bs4 module (to remove html tags), and news sources were processed with the re module (regular expressions) (see Table 1).

Table 1. Examples of regular expressions (punctuation and word order – for Ukrainian and Russian language)

Regular expression	Reference and translation	Result
[»'""],\s[––] .*?([A-ЯІЇЄЗҐA-Z]\w+)[.,]	", – De Croo said.	Croo
, пише|повідомляє|заявляє .*?([A-ЯІЇЄЗҐA-Z]\w+)\.	, Zelensky writes / reports / claims	Zelensky
Про це .*? ([A-ЯІЇЄЗҐA-Z]\w+) [вуізп]	This was stated by Dmytro Kuleba during the briefing	Kuleba
За даними .*?([A-ЯІЇЄЗҐA-Z]\w+)	According to information / data / words of the Washington Post	Post
\w+ ([A-ЯІЇЄЗҐA-Z]\w+) говор\ w+, що	Joe Biden said that	Biden

Using regular expressions made it possible to consider the most typical forms of references for every media outlet, but not every source. Minimal corrections were made for all news outlets (for instance, Telegram channels mostly do not use quotation marks, so this was considered as well). This procedure of news text analysis has previously been tested and shows nearly 90% correct identification of sources (Steblyna, 2021, p. 31).

HYPOTHESES

In view of previous research on amateur mass media, it can be supposed that popular Ukrainian Telegram channels publish low-quality content. Obviously, professional mass media follow the professional standards of journalism (accuracy, objectivity, completeness etc). In the case of news sources, this means that:
- H1) Professional mass media outlets have significantly more references to news sources than amateur ones. The average

number of references remains stable and does not depend on the phase of the war because professional mass media follows the standards of journalism. As for amateur news media, the average number of references is unstable and depends on the phase of war: less references during hot stages, especially, in the first stage of the Russian invasion; more references in more calm periods (positional warfare).

The types of news sources differ significantly between professional and amateur media:

- H2) Professional mass media outlets tend to more frequently use sources that are connected with the president, his office, and the government, especially during hot phases, whereas amateur media use both official sources connected with the president, his office and the government, and alternative ones (bloggers, activists).
- H3) Professional mass media outlets rely on official military sources, whereas amateur mass media quote particular units and military bloggers;
- H4) Professional mass media outlets use a variety of sources (national, regional, and international) with a preference for national ones during hot stages of warfare. Amateur mass media give preference to national sources as they are more recognizable to the audience.
- H5) Russian sources are more popular for amateur mass media.

RESULTS

The following figure shows the average number of news sources per text. All sources were identified with the help of the regular expressions in order to obtain this data; the number of coincidences was divided by the number of texts (see Figure 1).

Figure 1. News source dynamics in professional and amateur news media
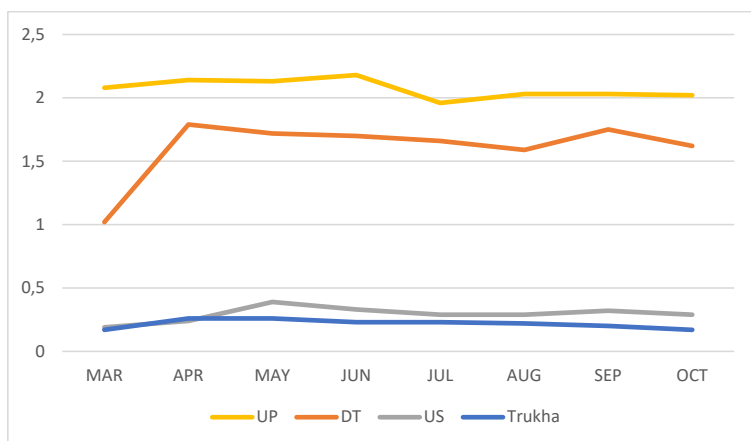
H1 was partially confirmed: professional mass media outlets have a significantly higher percentage of references per text: 1.6–2.07 for DT and UP; 0.21–0.29 for Trukha and US. This means that there is at least one source per news text for professional online mass media; however, only every third to fifth amateur media post contains a clear reference to a news source.

As for dynamics, there were less references for professional DT and Telegram channels in the first month after the invasion, while some indicators fell insignificantly for the professional mass media in summer 2022. There are almost no changes for professional mass media during different phases of the war (there is lower result for DT only in March 2022). As for the amateur mass media, there is also only a small difference in the number of news sources per text (just an unsignificant increase for US in March–April 2022, from 0.19 to 0.24).

For instance, Trukha and US include posts which do not contain references at all. Several posts contain indications of attempts to subsequently verify information, such as "preliminary information" or "information is being updated". As a rule, anonymous amateur videos or photos are published as evidence. And for the professional mass media, it is of course important to use a reliable news source.

Now, let us examine the most popular news sources (Fig. 2).

Figure 2. Top-10 the most popular news sources

Media	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
UP	Zelensky General Staff State Emergency Service UP Podolyak Kuleba Danilov Reuters Kim Vereshchuk	Zelensky General Staff Haidai Podolyak Vereshchuk Regional State Administration Danilov Sinegubov Mass Media Peskov	Zelensky Haidai Regional State Administration General Staff Reuters Security Service of Ukraine UP Andriushchenko Ukrainian Armed Forces Podolyak	Zelensky Haidai Regional State Administration General Staff Ukrainian Armed Forces Security Service Of Ukraine Regional Command Mass Media Kuleba Reznikov	Zelensky General Staff Regional State Administration Security Service of Ukraine State Emergency Service Haidai Kyrylenko Danilov UP Podolyak	Zelensky General Staff Regional State Administration Fedorov Security Service of Ukraine Podolyak Mass Media Ukrainian Armed Forces Haidai Reznikov	Zelensky General Staff Security Service of Ukraine Regional State Administration Sinegubov Mass Media Fedorov Haidai Putin Ukrainian Armed Forces	Zelensky General Staff Regional State Administration Putin Security Service of Ukraine Mass Media Kuleba Air Force Haidai Klychko
DT	Zelensky Podolyak Ukrainian Armed Forces Reuters Arestovych Kuleba Times Mass Media CNN Putin	Zelensky Ukrainian Armed Forces Chaly Podolyak Haidai Arestovych Peskov Putin Times Regional State Administration	Zelensky Ukrainian Armed Forces Kuleba Regional State Administration Reuters Haidai General Staff Bratchuk Danilov Malyar	Zelensky Ukrainian Armed Forces Regional State Administration Haidai Reuters Kuleba Zaluzhnyi Biden Guardian General Staff	Reuters Reznikov Zelensky Ukrainian Armed Forces Regional State Administration Kuleba Haidai Mass Media General Staff Putin	Reuters Ukrainian Armed Forces Regional State Administration General Staff Zelensky Reznikov Bloomberg Post Mass Media Podolyak	Reuters Zelensky General Staff Ukrainian Armed Forces Regional State Administration Putin CNN Mass Media Biden UN	Zelensky Regional State Administration Reuters General Staff Ukrainian Armed Forces Times Reznikov Budanov Haidai Mass Media
US	Zelensky Ukrainian Armed Forces Mass Media Haidai Scholz Biden Regional State Administration Pentagon Putin Johnson Kim Podolyak Fedorov	Zelensky Arestovych Haidai Podolyak Times Pentagon Mass Media Ukrainian Armed forces Regional State Administration CNN Macron President's office	Zelensky Mass Media Arestovych Haidai Times UN Putin Scholz Andriushchenko Kim Regional State Administration Feygin	Zelensky Mass Media Putin Arestovych Akhmetov State Emergency Service Biden Ukrainian Armed Forces Haidai Marchenko Monastyrskyi Regional State Administration Scholz	Zelensky Mass Media Bratchuk Vucic Danilov Yermak Kadyrov Podolyak Terekhov	Zelensky Mass Media Times Aksyonov Vereshchuk General Staff Scholz	Zelensky Scholz Yermak Mass Media	Zelensky Mass Media Kadyrov Reznikov Budanov DTEK Putin Starukh
Trukha	Zelensky Podolyak Arestovych Kim Ukrainian Armed Forces Terekhov Herashchenko Mass Media Kuleba Putin	Zelensky Arestovych Mass Media Haidai Kim Podolyak UN Azov Peskov	Zelensky General Staff Azov Arestovych Ukrainian Armed Forces Mass Media Andriushchenko Haidai Reuters Kim	Zelensky General Staff Arestovych Ukrainian Armed Forces Bloomberg Reuters Haidai Mass Media NATO Regional State Administration	General Staff Zelensky Arestovych Reuters Bloomberg MASS MEDIA Bratchuk Forbes Johnson	General Staff Arestovych Reuters Mass Media Zelensky Bloomberg Defence Intelligence Ukrainian Armed Forces CNN Kim	Arestovych Zelensky General Staff Defence Intelligence of Ukraine ISW Reuters Ukrainian Armed Forces IAEA NATO Regional State Administration Mass Media	Arestovych Zelensky General Staff DTEK Reuters Security Service of Ukraine Ukrainian Armed Forces Vilkul Herashchenko Defence Intelligence of Ukraine Kyiv Local State Administration UN Starukh

H2 was not confirmed. There is no significant difference between professional and amateur media. All the studied mass media outlets used mostly official sources and relied on media resources that are connected with the president and his office, especially during the initial phase of the invasion. Certainly, the number of quotes provided by professional media is much higher, and sources connected with the president and his office are among the most popular for the professional mass media as well. Professional media outlets quote ministers more often (Reznikov, Vereschuk, Kuleba), whereas Zelensky's advisers are more preferred by amateur media. There are only

a few news figures who are not mentioned by professional media outlets but are mentioned by amateur ones. For US, it is Ukrainian businessman Akhmetov, who is promoted by the channel (this channel often posts advertisements about this businessman, his fund, and his aid to Ukrainian IDPs), and Feygin, who is a Russian blogger.

H3 was partially confirmed. General Staff is the most popular military source for the studied outlets, but US does not reference it very often. The Azov Brigade was the most popular military source in April 2022 for Trukha, while it was the third most popular after Zelensky and General Staff in May.

Finally, H4 was partially confirmed. Professional mass media outlets mostly used national and regional news sources. UP showed reliance on presidential media resources during the first phase of the war. Regional sources (regional administrations, mayors) were mostly popular during the so-called "battle for Donbas", i.e., the Russian offensive on Lysychansk, Sievierodonetsk, and Bakhmut (May – August 2022). The situation is mostly the same for DT. Except for DT, interest in international sources is minimal.

Amateur media outlets use regional sources as well, but these sources are not so popular and are situated at the end of the list the TOP-10 sources.

As for Russian sources, H5 was confirmed only for US. Trukha uses a low number of Russian sources.

CONCLUSION AND DISCUSSION

In the new digital environment, professional journalism must solve several problems: a fragmented audience (Entman & Usher, 2018), which mostly prefers to obtain news from social networks; falling trust in traditional printed mass media (Reuters Institute, 2022); there are also some organizational, financial, and political factors. All these difficulties may be aggravated by the war and its consequences: shelling, blackouts, poor internet connection, threats to psychological and physical well-being etc. In such cases, social networks, where anyone can create media and spread useful content, may be able to help. There are some cases of citizen journalism where common people managed to broaden social representation of several social

groups (Carmichael, Adamson, Sitter & Whitley, 2019), give a voice to unnoticed people (Salsabila & Adi, 2022), or help protesters in authoritarian countries. However, when speaking about professional dissemination of information on an everyday basis, some amateur mass media outlets may fail to do this properly (Puente, Saavedra & Grassau, 2011; Akifah, 2014; Carpenter, 2009).

At the beginning of the digital platform era, there were hopes of symbiotic relationship between professional media and amateur digital platforms, where the latter would provide more diverse content and would help some ignored groups to be heard. However, for some platforms, such as Telegram, there may be too many difficulties to overcome. It has almost no restrictions on content publishing, which is why it is studied as a platform that contains harmful content (Júnior et al., 2022; Wijermars & Lokot, 2022; Willaert et al., 2022). However, in Ukraine, which is fighting for freedom and democracy, Telegram not only provides harmful content about extremism, violence, conspiracies etc., but it is also the most popular social network for news, and Ukrainians trust it (Internews, 2022). Therefore, it was important to compare the news quality of the most popular Telegram channels against the professional media.

The conducted analysis has demonstrated that extremely popular amateur news media outlets have mostly failed to give clear references to news sources during the war, therefore so-called "unreliable references" prevail. Thus, the low numbers of news sources per text (compared to professional media) confirm previous observations about low-quality content on Telegram (Knuutila et al., 2020; Walther & McCoy, 2021). Of course, such content may create several problems for Ukraine as a country at war: defenselessness before the enemy's information operations; propaganda and fake news; the possibility of important data leaks; adjustment of enemy fire with the help of amateur photos and videos; the so-called "effect of stolen thunder", i.e., when unreliable information is published first, spreads rapidly, and verified information follows but does not attract many views.

On the other hand, it is not right to say that amateur mass media outlets publish only low-quality content or propaganda and disseminate hate speech, extremism, racist ideology and conspiracy theories (Walther & McCoy, 2021; Hoseini et al., 2021; Baumgartner,

et al., 2020). The Ukrainian case demonstrates that Telegram channels also disseminate reliable information. According to our analysis, the most popular sources for mass media and amateur mass media are mostly the same. There is a reliance on media resources connected with the president and his office, and verified military sources. Both mass and amateur news media outlets use verified national, regional, and international references. Thus, Telegram channels' reliance on alternative sources does not mean some kind of alternative reality (bloggers, activists etc.). As for Russian sources, they were popular only with one media outlet, so the conducted analysis shows a need to broaden current representations of Telegram as a platform for Russian propaganda.

Thus, it seems that these two types of content (amateur and professional) will coexist in the reality of a "hybrid" media system (Chadwik, 2017). Amateur news media outlets undermine the traditions of professional mass media, and their influence on public opinion seems to be considerable. Thus, political actors in modern Ukraine should deal with the reality of a new digital environment where professional and amateur media outlets compete for the public's attention and trust.

LIMITATIONS

The conducted computer-assisted analysis does not make is possible to identify all the news sources in a given news text, but the use of regular expressions helps to determine the most common expressions and identify the most popular sources quoted in a text. Thus, this margin of error should be considered. Previous research has shown that this method helps to correctly identify 86–90% of sources used in the professional media.

Additionally, these regular expressions have to be adjusted for every media outlet as the formats used for references differ. Thus, the proposed news source analysis algorithm must not be used without the required adjustments.

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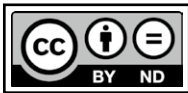
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