
A Butterfly's Wingbeat or a Global Village – a Bibliometric Review of the Impact of the Russo-ukrainian War

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ABSTRACT: *What happens thousands of kilometres away from us today affects our daily life and has global consequences much faster and more acutely than, for instance, 100 years ago. Ukraine and Russia have been in a military conflict since February 2014, which escalated into a full-scale Russian aggression war on February 24, 2022.*

In the current paper, we observe the trends in how and to what extent the aspects of the Russo-Ukrainian war have reached scientific circulation. What is the circle of authors dealing with the topic, has the different geographical location affected the focus of research, what fields of research and topics does it cover, and what is the scope of the impact of the war?

Keywords: Russian-ukrainian War, Ukrainian War, War In Ukraine, Russian Aggression, Russian Invasion, Bibliometric Analysis, Content Analysis, Text Analysis

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1. Introduction

The full-scale Russo-Ukrainian war which began on 24 February 2022 has a long history which began in February 2014. In some ways, the time before February 2022 can be compared to many examples in world history, the most famous of which is called the Phony War. Military actions took place, there were casualties on both sides, but it was not yet front-page news for the world.

In the current paper, the time window 2014-2023 under consideration has been divided into two periods: the period from 2014 to the second half of 2022 and the period from the second half of 2022 to August 2023. The basis of such a division is, firstly, the assumption that the time when a topic can be prepared taking into account all the rules of research work, even for the most burning cases, takes at least 6 months. Secondly, it allows for comparison of trends and perhaps in retrospect to see future developments.

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No comprehensive bibliometric, text analysis, or content analysis research on this topic has been done. However, there have been some studies with a narrower focus, for instance, bibliometric analysis has been used in a paper on agro-food crisis caused by the Russo-Ukrainian war (Peng, et al, 2023), also in a review on renewable energy systems (Pestisha, 2023). Scientometric analysis is used to investigate green bonds (Marín-Rodríguez, 2022). Eguskiza, Ignacio Gaztaka (Eguskiza, 2022) has used textual analysis to study the works of a Ukrainian war photographer. In many cases, content analysis has been used in the approaches investigating the use of Twitter (Kobilke, et al, 2023; Chen & Ferrara, 2023), TikTok (Primig, et al, 2023), and online news media (Roman, et al, 2017; Udris, et al, 2023; Hanley, et al, 2023, 327-338; Hanley, et al, 2023, 339-350). The period before the full-scale Russian aggression includes content analysis of ethnic stereotypes (Sikevich, 2017).

2. Methodology

For the conduction of our analysis, we used in our study the Clarivate Web of Science for the period 2014–2023, using the following key words: *Ukrainian war*, *Russian Ukrainian War*, *War in Ukraine*, *Russian Aggression*, *Russian Invasion*, and *Russo-Ukrainian War*. In total we selected 3164 papers (Table 1).

Next, the following data were identified: (1) Co-authorship geography; (2) Research areas; (3) Authors' keywords.

Based on the received data, we formed three smaller datasets: a) papers where at least one author was from Ukraine, b) papers where at least one author was from Russia, 3) papers written without Ukrainian and Russian authors. Based on these, we carried out a text analysis and content analysis where we tried to find differences and concurrences between data from different time periods and different authors.

3. Findings

3.1. Comparison between two periods

The main difference between the two periods is that while from February 22, 2022 there is talk about a full-scale war between Ukraine and Russia, there are different interpretations about the period from 2014 to 2022 – it has also been called *frozen conflict* (Corboy, et al, 2014; O'Loughli, et al, 2014), *Ukrainian crisis* (Gromyko, 2015). At the same time, it must be emphasized that at the beginning of the war there was a terminological confusion, and it was not clear whether the situation would remain localized or escalate. Therefore, in the papers written by the same authors, a change in terminology can be observed over time, where the term "war" becomes dominant (O'Loughli, et al, 2020).

Secondly, the start of a full-scale war by Russia created an urgent need to scientifically analyse the situation from different sides and different perspectives. This is also shown by the number of published papers – in the previous eight years, 1637 scientific articles were published, from July 2022 to August 2023, 1527 papers have been published (Table 1).

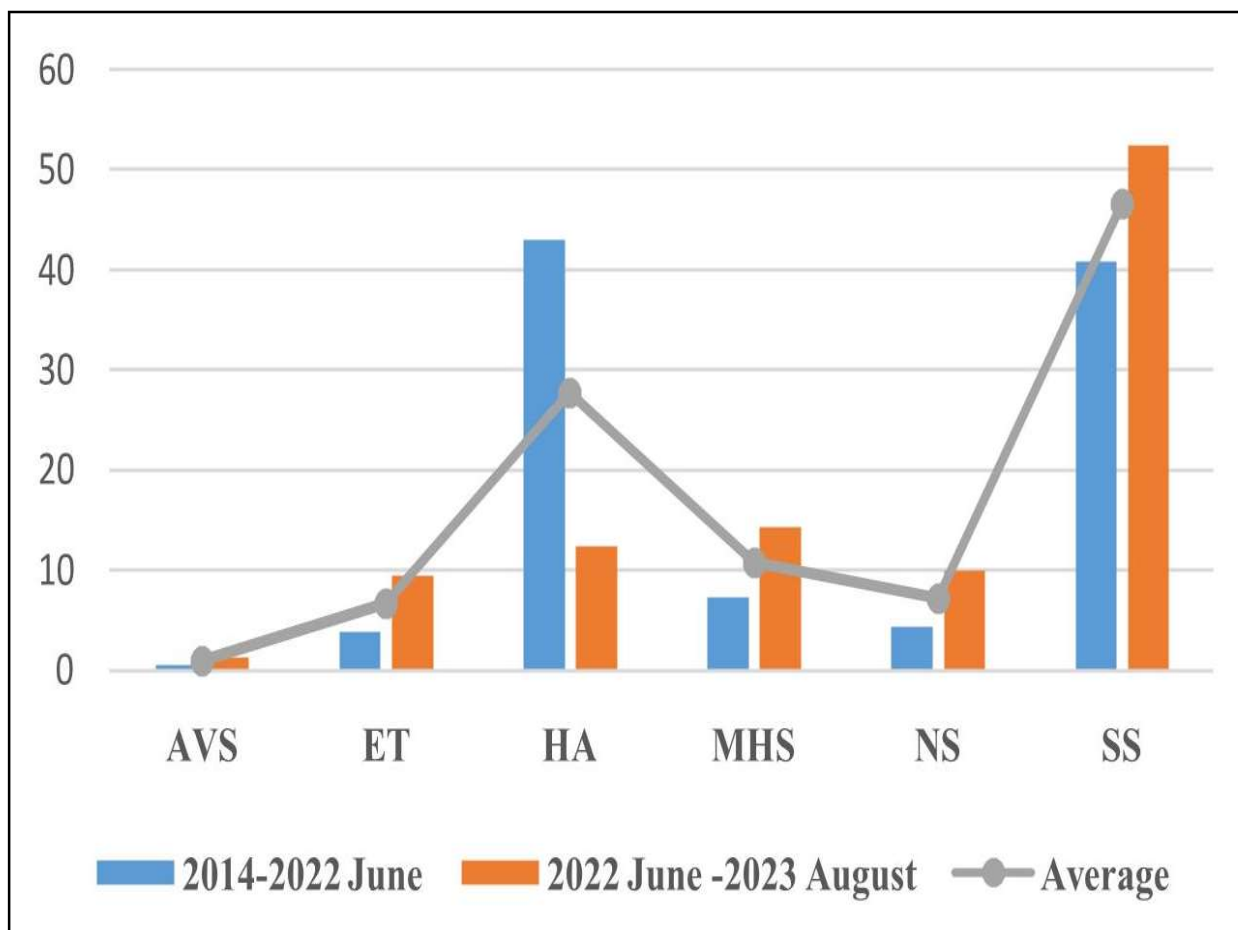
Thirdly, the first period as a whole can be described as a prelude to the battle for souls – historical roots (Kotenko, 2015; Alexandra, et al, 2018), ethnic characteristics (Podrezov, et al, 2019; Riabchuk, 2016), public opinion (Smeyukha et al, 2021), and mainly – the fight for the media (Litvinenko, A, et al, 2019; Koltsova & Pashakhin, 2020; Amirov, 2021; Fedorov & Levitskaya, 2021).

Table 1. The number of papers by authors' group, co-authorship type and year

OTHER					Ukraine			Russia		
Years	Internal	Domestic	Inter-national	NA	Internal	Domestic	Inter-national	Internal	Domestic	Inter-national
2014'	16	7	4	10	0	2	2	1	0	1
2015'	20	7	4	14	1	0	2	3	0	0
2016'	40	11	7	11	4	0	2	0	0	1
2017'	27	4	4	6	2	1	3	1	1	0
2018'	44	8	7	5	47	15	8	13	7	0
2019'	54	7	2	26	51	39	11	14	6	0
2020'	43	15	5	3	57	51	8	12	3	2
2021'	42	8	8	5	50	52	8	21	5	3
2022'	350	161	132	94	113	201	89	21	6	7
2023'	284	229	158	35	77	122	88	4	2	7
Total	920	457	331	209	402	483	221	90	30	21

3.2. Research areas

As already noted previously, papers written in different periods have different focuses. This is especially evident in the analysis of research areas. In the first period of the war, it was very strongly inclined towards Humanities and the Social Sciences (89.67% of papers) (Figure 1).



AVS= Agricultural and veterinary sciences; ET= Engineering and technology; HA= Humanities and the arts; MHS= Medical and health sciences; NS= Natural Sciences; SS= Social Sciences

Figure 1. Distribution of papers by periods and by research fields (%)

In humanities, approaches to history dominated (28.8%) (Figure 2). As we mentioned before, this period was largely battle for brains. Erkki Tuomioja, the founder of the initiative Historians Without Borders has stated *“In a globalized world, it is increasingly important to be aware of both history and various interpretations about it, not to mention their influence on politics and events in the world today”* (Historianswithoutborders). The process that is taking place in Ukrainian humanities (history, archaeology, literature, arts) is comparable to the same development that took place for example in the Baltic countries thirty years ago. The need to reassess one’s history and culture is a natural development of liberated countries. Of course, the ongoing war leaves its mark on the assessments, and even to research objects – Gogol and Taras Bulba (Wilkinson, 2023, Koshino, 2023), images of war in Ukrainian literature after 2014 (Nasiowska, 2022), interpretation of WWII and the Great Patriotic War (Pivovar & Kosovan, 2021), roots of sign Z (Otroshchenko, 2023). Quoting on one of the papers on this issue *“only the political crisis resolution of the Russian-Ukrainian relationship can reduce the intensity of historical battles, by renouncing the language of hatred and overly politicized assessments of the common history”* (Nikolajev, et al, 2021). In the second period, the scope of research areas is wider (Figure 2), while papers on Social Sciences make up more than a half (52.45%). The top fifty most frequently occurring keywords are (excluding war, Ukraine, Russia) *energy, refugees, migrants, food, social media, mental health, anxiety, education*.

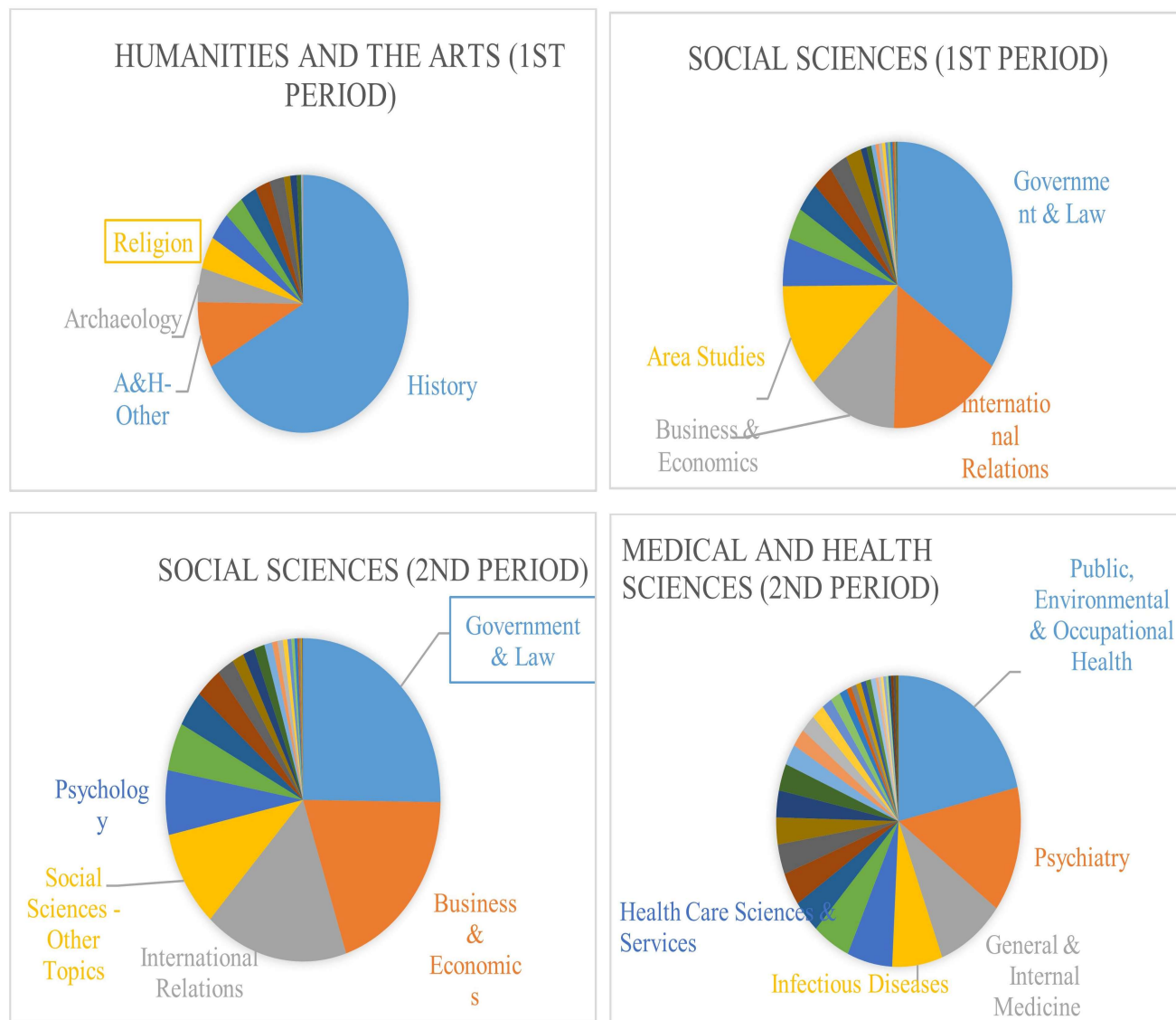


Figure 2. The division of the two most prevalent research areas into narrower fields

At the same time, the battle continues in a more sophisticated form on social media. Contemporary history has shown that social media platforms play an important role in wars and crises, primarily due to their promptness and wide-based possibilities of use. Thanks to this, research on social media can be quickly put into scientific circulation (Chen & Ferrara, 2023; Lewis, 2023; Udris, et al, 2023).

3.3. Differences due to the location of the authors

The 3164 papers published on the topic had a total of 4516 authors from 117 countries (for 207 papers there was no location data), 75.1% of the authors are from Europe. If we take a closer look at how European authors are divided, the activity of the countries bordering Ukraine (Poland, Moldova, Bulgaria, Slovakia, and Hungary) comes to the fore (Figure 4). For example, about a quarter (24.42%) of the papers on refugees are written by them. At the same time, Ukrainian authors are particularly active on the topic of media (36.21% from European authors). On the same topic, Russian authors are much more active than average (8.62% vs 3.32%).

While the topic seems to be mainly relevant for European authors, two areas are also of considerable interest to Asian authors. These are energy – 19.46% of authors and food – 18% of authors (Figure 4).

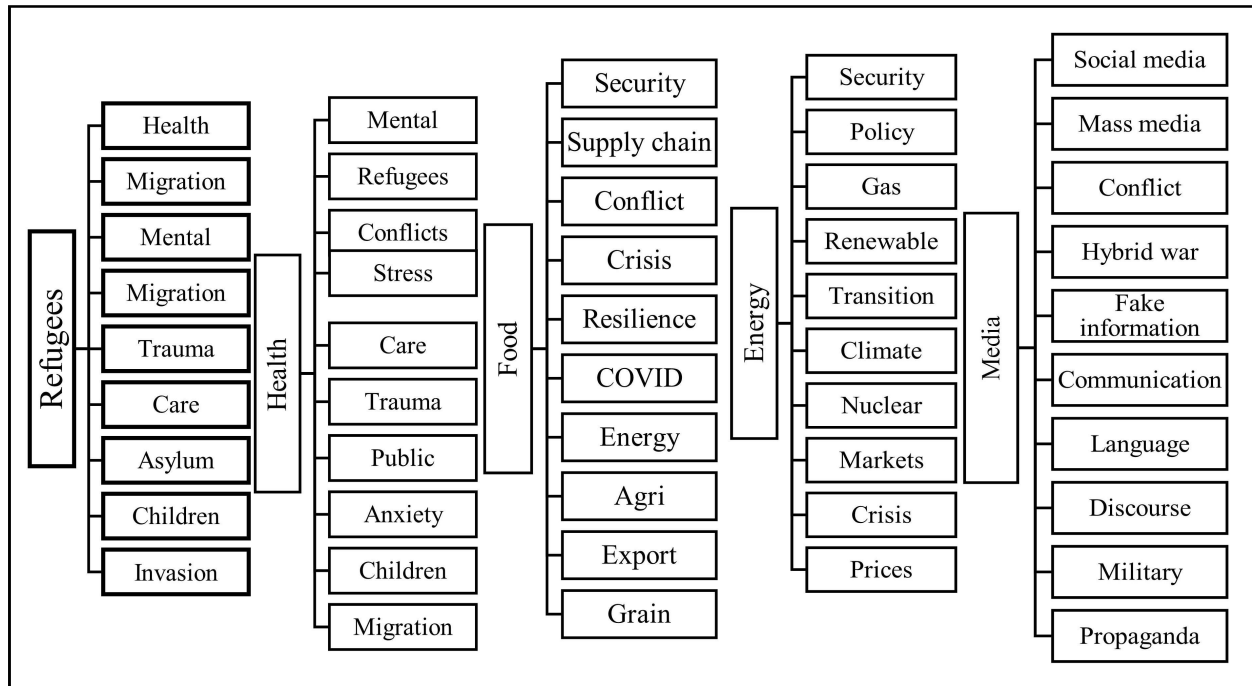


Figure 3. The ten most frequently occurring terms related to the keywords “Refugees”, “Health”, “Food”, and “Energy”.

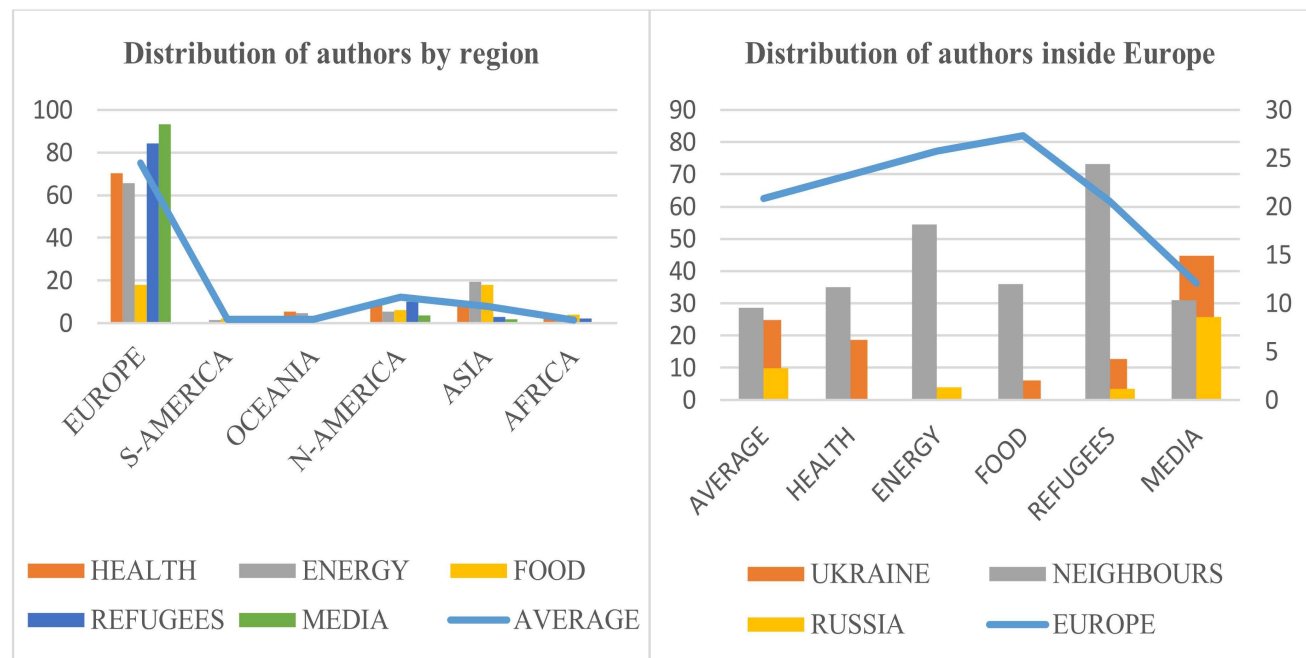


Figure 4. Distribution of authors by world region and within Europe (%)

The average number of authors per paper is 1.4. The latter can be explained by the high proportion of papers in the social sciences and humanities. The individualistic nature of research is generally characteristic of these areas. It is also characteristic of the authors of the published papers that a large part of the cooperation takes place within their own organization, then within the country, and thirdly internationally. Ukraine differs from the pattern – the majority of papers were published in the framework of domestic cooperation (Table 1; Figure 5). How big a role was played here by the fact that already in June 2022

more than 40 higher education institutions were also relocated due to military operations (Humeniuk, 2022), this is the subject of a separate study. Considering the topic of our study, the small representation of Russian authors is somewhat understandable. Observing the rules of research integrity may conflict with the political situation in the country. Despite this, there are papers that analyse the ongoing Russo-Ukrainian war in terms of a colonial seizure undertaken *by a fading but aggressive Russian empire* (Petrovsky, 2022), or discuss the topic of *collective responsibility in conjunction with the Russian invasion of Ukraine* (Bulakhova, 2022; Magun, et al, 2022).

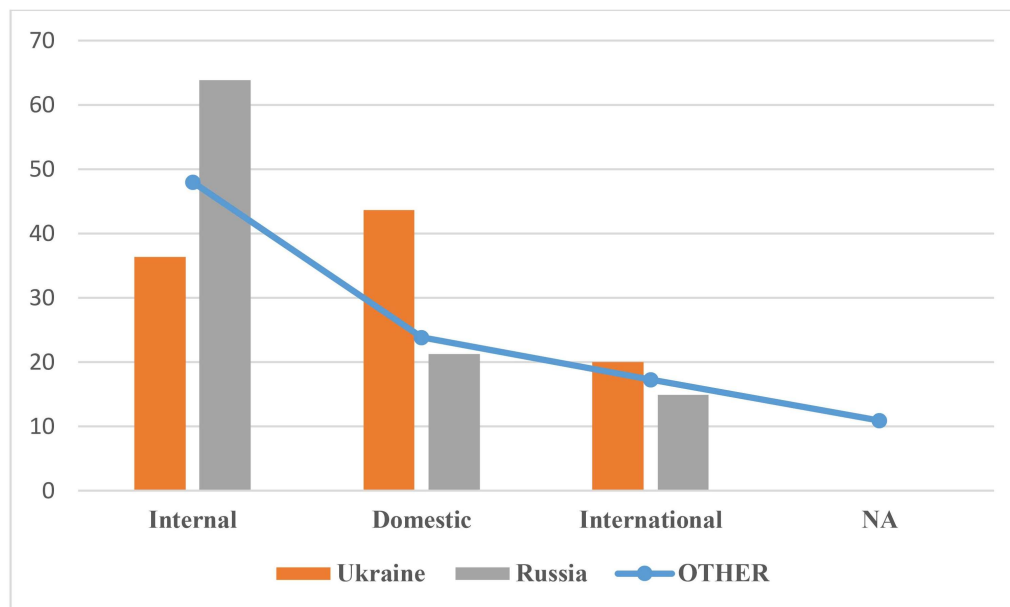


Figure 5. The proportion of papers published by authors within a single organization, with domestic partners or with international partners

4. Conclusions

Based on the articles published in the years 2014-2023, the difference between the two periods – before and after the outbreak of a full-scale war – can be clearly observed. The lion's share of published articles belong to the field of social sciences and humanities. 75.1% of the authors are from Europe. At the same time there are topics which are vital for the rest of the world. The Asian authors' contribution in energy-linked topics is 19.46% and on the subject of food – 18% of the total number of authors. Taking into account the circle of authors (from 117 countries), it must be recognized that the impact of the Russo-Ukrainian war is already global, and in one way or another, no country in the world remains unaffected.

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References

- [1] Амиров, В. М. (2021). Особенности функционирования ономастических единиц в милитарном дискурсе вооруженного конфликта на востоке Украины. *Вопросы ономастики*. 2021. Том 18. № 1, 237-250.
- [2] Bobkin, N. N. (2022). Impact of the Ukrainian conflict on US relations with countries in the Middle East. *Herald of the Russian Academy of Sciences*, 92 (Supl 15), S1397-S1404.
- [3] Bulakhova, L. (2022). Failed human: on national guilt and its religious roots. *Studies in East European Thought*, 74(4), 565-574
- [4] Chen, E., Ferrara, E. (2023, June). Tweets in time of conflict: A public dataset tracking the twitter discourse on the war

between Ukraine and Russia. In: *Proceedings of the International AAAI Conference on Web and Social Media* (Vol. 17, pp. 1006-1013).

[5] Corboy, D., Courtney, W., Yalowitz, K. (2014). Hitting the Pause Button: The 'Frozen Conflict' Dilemma in Ukraine. *The National Interest*.

[6] De Coninck, D. (2023). The refugee paradox during wartime in Europe: How Ukrainian and Afghan refugees are (not) alike. *International Migration Review*, 57 (2) 578-586.

[7] Eguskiza, I. G. (2022). Memoria del pasado, recuerdo del presente. Materialización fotográfica del conflicto bélico entre Ucrania y Rusia en la obra de Anatolii Stepanov. *Fotocinema: revista científica de cine y fotografía*, (25) 235-258.

[8] Fedorov, A., Levitskaya, A. (2021). Theoretical model and technology of anti-russian propaganda in internet communications of modern Ukraine within the framework of various student groups' media literacy education. *Медиаобразование*, (3) 443-451.

[9] Hanley, H. W., Kumar, D., Durumeric, Z. (2023, June). Happenstance: Utilizing Semantic Search to Track Russian State Media Narratives about the Russo-Ukrainian War On Reddit. In *Proceedings of the international AAAI conference on web and social media* (Vol. 17, pp. 327-338).

[10] Hanley, H. W., Kumar, D., Durumeric, Z. (2023, June). "A Special Operation": A Quantitative Approach to Dissecting and Comparing Different Media Ecosystems' Coverage of the Russo-Ukrainian War. In *Proceedings of the International AAAI Conference on Web and Social Media* (Vol. 17, pp. 339-350).

[11] Historianswithoutborders. Retrieved July 1, 2023 from <https://historianswithoutborders.fi/en/about-us/>

[12] Humeniuk, T. (2022). Modern management of higher education in the challenges of time. Retrieved September, 10 from ukrinfospace.knukim.edu.ua

[13] Khvorostianov, N. (2023). "Is everyone alive?": Smartphone use by Ukrainian refugee children. *new media & society*, 14614448231173657.

[14] Kobilke, L., Kulichkina, A., Baghumyan, A., Pipal, C. (2023). Blaming it on NATO? Framing the role of NATO in the full-scale Russian invasion of Ukraine on Twitter. *Frontiers in Political Science*, 5, 1122439.

[15] Koltsova, O., Pashakhin, S. (2020). Agenda divergence in a developing conflict: Quantitative evidence from Ukrainian and Russian TV newsfeeds. *Media, War & Conflict*, 13(3), 237-257.

[16] Koshino, G. (2023). Ukraine and War in Russian-Language Literature. *Japanese Slavic and East European Studies*, 43, 1-12.

[17] KOTENKO, A. (2015). Imagining modern kraiinca. *Ab Imperio*, 1, 519-526.

[18] Lewis, K. (2022). Colonizing the narrative space: unlivable lives, unseeable struggles and the necropolitical governance of digital populations. *AI/R Selected Papers of Internet Research*.

[19] Litvinenko, A., Medeiros, D., Orlova, D., Ozolina, L., Paluch, A., Radu, R. N., Stefanikova, S. (2019). Strategies of verbalization of epistemic responsibility in mass media discourse of informational confrontation (by example of coverage of the Ukrainian crisis). *НАУЧНЫЙ ДИАЛОГ Nauchnyi dialog*, 260.

[20] Magun, A., Khan, K., Bulakhova, L., Merzenina, A., Serebryakov, A., Aronson, O. (2022). Roundtable: Q&A discussion. *Studies in East European Thought*, 74 (4) 605-615.

[21] Nasilowska, A. (2022). Ukraińskie powieści wojenne – przeszłość, przyszłość i fikcje. *teksty drugie*, (3), 336-346.

[22] Николаев, Н. Ю., & Юрченко, Д. С. (2021). «Битвы за прошлое» или медиатизация исторической политики и исторической пропаганды в современной Украине. *Вестник Томского государственного университета. История*, (74), 152-159.

[23] Marín-Rodríguez, N. J., González-Ruiz, J. D., Botero, S. (2022). Dynamic relationships among green bonds, CO2

emissions, and oil prices. *Frontiers in Environmental Science*, 10, 992726.

[24] Oyebamiji, S. I., Oyebade, O. O., Cohen, J. H., Abraham, D. O. (2022). Echoes of Colour Discrimination in Refugee Protection Regime: The Experience of Africans Fleeing the Russia-Ukrainian War. *Migration Letters*, 19 (5) 695-707.

[25] O'loughlin, J., Kolossov, V., Toal, G. (2014). Inside the post-Soviet de facto states: a comparison of attitudes in Abkhazia, Nagorny Karabakh, South Ossetia, and Transnistria. *Eurasian Geography and Economics*, 55 (5) 423-456.

[26] O'Loughlin, J., oal, G. (2020). Does war change geopolitical attitudes? A comparative analysis of 2014 surveys in southeast Ukraine. *Problems of Post-Communism*, 67(3), 303-318.

[27] Otroshchenko, V. (2023). Знак «Z» в образотворчій традиції населення доби пізньої бронзи. *Arheologia*, (2) 5-21.

[28] Peng, XZ; Zhao, ZY; Wang, XY; Li, HS; Xu, JP; Zhang, X. (2023). A review on blockchain smart contracts in the agri-food industry: Current state, application challenges and future trends. *Computers and Electronics in Agriculture*, 208, 107776. <https://doi.org/10.1016/j.compag.2023.107776>.

[29] Perzycka-Borowska, E., Szczepaniak, C., Gruntowska, D. (2023). Multivocal Stories About Caring During the War in Ukraine, as Told by Polish Researchers. *Cultural Studies/I Critical Methodologies*, 23 (5) 486-493.

[30] Pestisha, A., Gabnai, Z., Chalgynbayeva, A., Lengyel, P., Bai, A. (2023). On-farm renewable energy systems: A systematic review. *Energies*, 16 (2) 862.

[31] Petrovsky, H. (2022). Empty spaces: empire versus life. *Studies in East European Thought*, 74 (4) 463-474.

Пивовар, Е. И., & Косован, Е. А. (2021). Документальные интернет-выставки центральных государственных архивов Украины как способ коммеморации Великой Отечественной войны 1941-1945 гг. *Вестник архивиста*, (1), 118-129.

[32] Подрезов, М. В., & Голдовская, А. В. (2019). Русинский вопрос в медиаповестке российских средств массовой информации (2010-2019 гг.). *Русин*, 58, 294-305.

[33] Primig, F., Szabó, H. D., Lacasa, P. (2023). Remixing war: An analysis of the reimagination of the Russian–Ukraine war on TikTok. *Frontiers in Political Science*, 5, 1085149.

[34] Riabchuk, M. (2016). Ukrainians as Russia's negative 'other': History comes full circle. *Communist and Post-Communist Studies*, 49 (1) 75-85.

[35] Roman, N., Wanta, W., Buniak, I. (2017). Information wars: Eastern Ukraine military conflict coverage in the Russian, Ukrainian and US newscasts. *International Communication Gazette*, 79(4), 357-378.

[36] Sauer, L., Ette, A., Steinhauer, H. W., Siegert, M., Tanis, K. (2023). Spatial Patterns of Recent Ukrainian Refugees in Germany: Administrative Dispersal and Existing Ethnic Networks. *Comparative Population Studies*, 48.

[37] Shevtsov, A., Tzagkarakis, C., Antonakaki, D., Pratikakis, P., & Ioannidis, S. (2022). Twitter Dataset on the Russo-Ukrainian War. *arXiv preprint arXiv:2204.08530*.

[38] Сикевич, З. В. (2017). Русские, украинцы, белорусы: вместе или врозь?(динамика представлений петербуржцев, 2006-2016). *Социологические исследования*, (7) 88-98.

[39] Smeyukha, V., Shapovalova, E., & Armash, V. (2021). Media consumption and media literacy of residents of the Republic of Crimea in the context of information confrontation. *Медиаобразование*, (3) 544-552.

[40] Stroja, J. (2022). Displaced Persons' Experiences of Trauma and Responses to Contemporary Crisis in Europe: An Oral History of Engagement with Refugees. *Refugee Survey Quarterly*, 41 (2) 218-237.

[41] Zawadzka-Paluektau, N. (2023). Ukrainian refugees in Polish press. *Discourse & Communication*, 17 (1) 96-111.

[42] Treisman, R. (2022). Global food prices hit their highest recorded levels last month, driven up by the war. *NPR*, April, 8.

[43] Udris, L., Vogler, D., Weston, M., & Eisenegger, M. (2023). Sourcing practices of online news media in Switzerland during the war in Ukraine. *Frontiers in Political Science*, 5, 1089994.

[44] Varpina, Z. (2022). Ukrainian asylum seekers in Latvia: the circumstances of destination choice. *Migration Letters*, 19(6), 819-831.

[45] Wachter, A. Shapiro-Obermair, E. (2018). From Soviet to Post- or Anti-Soviet: Two Lviv Museums of War in Search of a New Ukrainian Narrative of World War II. *Laboratorium: Журнал социальных исследований*, (2), 52-79.

[46] Wilkinson, D. (2023). The Soul of Russia and the Soul of Ukraine. *Comparative Civilizations Review*, 88(88), 5.