Russia Ukraine Propaganda on Social Media: A Bibliometric Analysis

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Systematic Review

Abstract

This study presents a systematic review of the scholarly literature on Russia-Ukraine propaganda on social media over the last ten years. This study performs a bibliometric analysis of articles published in the last ten years (2012–2022) and acquired from the Scopus database, followed by a brief content analysis of top articles from leading sources. Furthermore, the study aims to find gaps in the literature and identify the research area that could be developed in this context. The VOSviewer application was used for data mining and data visualization from Microsoft Excel. Some interesting facts were found in the bibliometric analysis regarding research and other perspectives. Although the study was related to the propaganda of Russia and Ukraine, the USA is identified as the most attentive country in terms of research and publication on the topic. On the other hand, Russia published many articles regarding its own propaganda on social media.

Introduction

Social media refers to the processes by which individuals generate, share, and/or exchange information and ideas within virtual communities and networks. This interactive media technology promotes the creation and dissemination of information, ideas, and other forms of expression (Kietzmann et al., 2011; Obar & Wildman, 2015). Currently, a large number of people are connected via social media; 4.8 billion people will be exact in 2021 (Dean, 2021). Life has become easier because of social media, as it has become a medium of interaction with friends and families, sharing opinions and expressions, getting information, posting media, doing business, and so on (Cleveland et al., 2023; Khaola et al., 2022). However, social media has become a double-edged sword, as it also exacerbates divisions, helps spread conspiracy theories, allows people to exist in 'echo chambers', etc. (D'souza et al., 2021). Media houses, independent media, and other sources of information are now exceedingly active in social media to spread real-time news. There has been huge competition in spreading the news as fast as possible to reach more users. For those who have the privilege of an internet connection, almost every sector is connected to social media. Not only certified media houses or agencies but also government officials and every sector of the internet-privileged world exist in different types of social media to spread information. Here comes the real challenge. Information is not in some specific organizations/agencies' hands. Anyone can share any information on social media within a second, whether it is verified or not. The considerable amount of unverified information creates misinformation or false information, which diverts the actual purpose of information (Allcott & Gentzkow, 2017; Jabeen et al., 2023; Kim, 2023; M. Wu & Pei, 2022).

False information is of two types and may be differentiated based on its intention. Sometimes, incorrect information is circulated deliberately to spin the motive of general people, which is called disinformation. Propaganda is another term for disinformation. When the motive is intentional and political, it is called propaganda. On the other hand, if false information is circulated without ill motive or intention, it is called misinformation (Bertolami, 2022; Hasan, 2022a; Petratos, 2021). Both disinformation and misinformation exist in the current world's social media. Social media are saturated with misinformation and

disinformation. However, the use and availability are uneven. Some countries in the world even specialize in it. Academics have recently paid great attention to the massive spread of disinformation through social media. Social media has facilitated the rapid dissemination of rumors and false information to a large audience (L. Wu et al., 2019).

In addition to social media disinformation, Russia and Ukraine are significant parts of the geopolitical politics of the world. Russia and Ukraine were part of the USSR (Union of Soviet Socialist Republics) before Russia changed its political and economic systems; Ukraine became independent in the 1990s. Russia and Ukraine have a close history related to their borders, economics, culture, and family ties (Masters, 2022). The intention between Russia and Ukraine is central to world politics, as there have been few conflicts between those countries in this 21st century. The biggest conflict was the armed conflict in eastern Ukraine, where Russia annexed the Crimea Peninsula of Ukraine in 2014. Since Russia's invasion began on February 24, 2022, the deadliest war in Europe since World War II is going on between those two countries.

The Kremlin's propaganda has a huge historical background to shape people's views. There has been a war that is already known as a social media war or the first TikTok war; the terms disinformation, propaganda, and misinformation on social media are being discussed everywhere (Liñán, 2010; Scriver, 2015). There has been huge manipulation of information in social media by both parties. As modern research focuses on social media fake news or disinformation (Shu & Liu, 2019), there is much research related to propaganda on social media, with multiple studies focusing on the Russia and Ukraine context. This study aims to identify existing literature and research related to Russia and Ukraine propaganda on social media to analyze its origins. and identify the research gaps.

Methods and Materials

This study systematically reviews the scholarly literature on Russia-Ukraine propaganda on social media. It identifies and describes the connection between Russian and Ukrainian propaganda appearing on social media. A systematic literature review is a scientific procedure that identifies gaps in the relevant literature and develops a potential research topic by identifying themes, trends, and weak points (Wright et al., 2007). Figure 1 also represents the data found in the Scopus database related to the research.

Table 1
Description and distribution of primary information.

Description	Results
Documents	456
Sources	314
Authors' Keyword	1019
Period	January 2012- October 2022
Average references per document	185.30
Authors	758
Authors of single authored document	211
Authors of multi authored document	245
Documents per author	0.46
Authors per document	2.16

Table 2
Information about document type
and numbers.

Documents Type	Numbers
Article	259
Conference Paper	121
Book chapter	55
Book	2
Review	14
Note	2
Editorial	3

All fundamental descriptions with details of the data used in this research are delineated in Table 1. The study comprised 456 documents published from January 2012-October 2022. The author tried to analyze the research related to Russia, Ukraine and social media propaganda for the last 10 years. Among them, a vast majority (83.33%) are articles and academic conference papers, which are accordingly 56.8% & 26.53%. The remaining 16.67% of documents are book Chaps. (12.06%) and review papers (3.07%). There are a limited number of letters and editorials. A total of 758 authors make a scientific contribution to Russia-Ukraine-related propaganda appearing on social media. To be more precise of those 456

documents, 211 documents are single-authored. Of the remaining multi-authored documents, 547 authors contributed. Average citations that are used per document are relatively high, 185.30.

Figure 2 depicts the sample selection procedures used in this study in detail. This study gathered data from 542 documents in the Scopus database in Excel format. This study included publications from January 2012 to October 2022. The keywords used in Scopus searches were "Russia Ukraine", "Propaganda", and "Social Media". Only materials produced in the English language were included in the analysis (journals, articles, books, conference papers, letters, reports, reviews, and notes). Vosviewer software version 1.6.18 (www.vosviewer.com) was used for bibliometric analysis. VOSviewer is a tool for designing and visualizing bibliometric networks. These networks, which may include journals, researchers, or individual articles, can be constructed based on citation, bibliographic coupling, co-citation, or co-authorship links. VOSviewer also has text mining tools for creating and visualizing co-occurrence networks of key phrases collected from the scientific literature (VOSviewer, 2022). Thematic analysis was performed using MS Excel. A manual selection of topics in the VOS viewer was used to generate network and density visualizations for the purpose of analyzing a variety of data characteristics.

Later in this study, these types of bibliometric analyses were performed:

• Co-occurrence of keywords

• Most highly cited sources, authors, and documents

• bibliographic coupling

In the next section, the study shows the results and discussion of that analysis. Finally, the study concludes with the future research prospects and limitations of this study.

Bibliometric findings

The research assessed the co-occurrence of all keywords used in the literature on Russia-Ukraine, propaganda, and social media. In this study, the most frequently cited sources, authors, and documents were examined. In addition, bibliographic coupling was used to identify common sources between articles. In the following section, bibliometric findings are presented.

Co-occurrence of keywords

Because the topic of Russia-Ukraine, propaganda, and social media literature is diverse, there are 1376 keywords that have been engaged frequently throughout the literature. The study screened the keywords by assigning a minimum frequency of ten occurrences per key term, and 18 of 1376 met the criteria. The size of the nodes in Table 3 & Fig. 3 represents the frequency of the keyword.

Table 3
Frequency and link strength of keywords

keyword	occurrences	total link strength
social media	71	136
Russia	68	125
Ukraine	52	100
disinformation	44	82
propaganda	36	67
Russian federation	28	77
social networking (online)	24	36
fake news	23	46
information warfare	19	24
twitter	17	39
foreign policy	13	29
misinformation	12	29
war	12	22
authoritarianism	10	23
conflict	10	16
international relations	10	22
internet	10	24
media role	10	31

However, the data suggest that "Social Media" was the most commonly used phrase of the 71 keywords. Other randomly used words comprise "Russia (68 keywords)," "Ukraine (52 Keywords)," "Disinformation (44 Keywords)," "Propaganda (36 Keywords)," "Russian Federation (28 Keywords)," "Social Networking (24 Keywords)," "Fake News (23 Keywords)," "Information Warfare (19 Keywords)," "Twitter (17 Keywords)," "Foreign Policy (13 Keywords)," "Misinformation (12 Keywords)," "War (12 Keywords)," "Media Role (10 Keywords)," "Internet (10 Keywords)," "Authoritarianism (10 Keywords)," "Internet Relations (10 Keywords)," and "Conflict (10 Keywords)." The findings also suggested that the most crucial correlation was found between the phrases "Social Media" and "Disinformation."

Additionally, "Social Media" was discovered to be closely related to "Russia," "Ukraine," "Disinformation," and "Propaganda." These data indicate that in the Russia-Ukraine conflict, misinformation, propaganda, and fake news through social media are the top concerns, as they are closely interconnected.

Table 4
Most frequently cited documents on Russia-Ukraine, Propaganda, and Social Media

References	Number of Citations	References	Number of Citations
(Tufekci, 2017)	501	(Stukal et al., 2017)	62
(Bennett & Livingston, 2018)	375	(Grimme et al., 2017)	59
(Khaldarova & Pantti, 2016)	152	(Hoskins & O'Loughlin, 2015)	57
(Quandt, 2018)	137	(Golovchenko et al., 2018)	51
(Roberts, 2017)	121	(Haigh et al., 2018)	51
(Bleiker, 2018)	107	(Denisova, 2019)	42
(Ketchley, 2017)	78	(Bastos & Farkas, 2019)	39
(Repnikova, 2017)	71	(Greene & Robertson, 2019)	38
(Little, 2016)	70	(Tiidenberg, 2015)	37
(Jamieson, 2021)	67	(de la Sablonnière, 2017)	36
(Mejias & Vokuev, 2017)	64	(Grimme et al., 2018)	35
(Kragh & Åsberg, 2017)	64	(Mueller, 2021)	35

Source: Author

Most influential documents

To determine the most frequently cited publications in this field, the analysis was limited to publications cited at least 25 times in Russia-Ukraine, propaganda, and social media. Thirty-six of the 456 documents fulfilled the criteria. Table 2 lists the 24 most mentioned publications in the Russian, Ukrainian, propaganda, and social media literature. Figure 4 depicts the network map based on the most frequently cited publications.

The study found that the publicationTufekci (2017) is the most cited document; however, it is not connected to all the publications, as shown in Fig. 4. Similarly,(Quandt, (2018), (Bleiker, (2018), (Ketchley, 2017),(Repnikova, 2017), (Roberts, 2017), and (Grimme et al., 2017) are also missing in the associated set, despite being among the 24 most cited studies.

Most influential sources

This section discusses the most frequently cited sources in the Russia-Ukraine, Propaganda, and Social Media literature, as well as the number of publications that use them. The analysis used two documents and twenty-five citations as the minimum number of documents and citations for a source, respectively,

to sort the data. After filtering, only 19 of the 314 sources met the threshold. Table 5 provides an overview of the essential sources.

Table 5
Most cited sources and documents

Source	Documents	Citations
European Journal of Communication	3	380
Media and Communication	2	137
Big Data	2	121
International Journal of Press/Politics	7	107
Media, Culture and Society	2	95
Information, Communication and Society	4	82
International Affairs	5	80
Journal of Politics	2	72
International Journal of Communication	5	71
Media, War and Conflict	14	70
Social Media and Society	6	68
Journal of Strategic Studies	2	65
Lecture notes on Computer Science	4	40
Digital Journalism	3	35
European Security	3	34
Nationalities Papers	5	31
The Hague Journal of Diplomacy	3	27
Political Communication	3	25
New Media and Society	2	25

Source: Author

Most documented countries on Russia-Ukraine, Propaganda and Social Media literature.

The United States is the country most frequently mentioned in the literature on Russia-Ukraine, propaganda, and social media, with 128 references to the United States. The United Kingdom and Russian Federation are in second and third places with 74 and 33 documents, respectively. Germany, Sweden, and Australia are the other three nations that have produced more than 20 documents. On the

other hand, Ukraine has 17 documents. Figure 6 depicts a density representation of the most-documented countries in relation to Russia-Ukraine, propaganda, and social media.

Table 6
Countries with the corresponding number of documents

Country	Documents	Citations
United States	128	1944
United Kingdom	74	615
Russian Federation	33	189
Germany	30	386
Sweden	20	221
Australia	20	341
Netherlands	18	122
Estonia	18	74
Canada	17	128
Ukraine	17	32
Finland	16	209
Denmark	11	138
Switzerland	11	65
Spain	9	17
Italy	7	34
Austria	6	32
Ireland	6	14
Norway	5	30
Israel	5	3

Bibliographic document coupling

Bibliographic coupling findings, according to the designers of VOSviewer, demonstrate the overlap of references between publications. The greater the relationship between two works, the greater the number of common references. In this study, the analysis was filtered by specifying a minimum of 25 document citations, obtaining 36 papers. However, only 77 documents were found to be related to the large sample. Figure 9 depicts the bibliographic coupling of documents in the Russia-Ukraine, Propaganda, and Social Media categories.

Conclusion

Half of the world's population has access to the internet and social media (Kemp, 2022). Concerns around misinformation and disinformation on social media are growing. Social media are now used as a medium for spreading disinformation and propaganda very easily and at low cost. Government officials, individuals, interest groups, and organizations are taking this as an opportunity to spread misleading and fake information to spin the motives of the people. Russia and Ukraine are no exception to this. There has been huge state-owned propaganda by both nations to claim their information is true. In this study, it was revealed that although the frame is on Russia and Ukraine, researchers worldwide are concerned with it, as both have a huge geopolitical history that matters to the rest of the world.

Limitations and Future Research Prospects

This review highlights a knowledge gap in empirical research on the role of propaganda on social media regarding Russia and Ukraine. Through this study, the author came up with a more precise way to identify the study's focus. This is just a pilot study, and there are some areas that need to be improved in future research. The author is working on a content analysis that will cover more detailed research areas in this sector. In the content analysis area, the author will emphasize the area of publishing content that is analyzed in those studies and will suggest a study gap. On the other hand, there are a few limitations of this study. The documents were collected from the Scopus database, which is one of the most important limitations. The area can be enhanced by extracting data from the Web of Science and other sources. Other limitations are the keywords. The author chose "Russia Ukraine," "Social Media," and "Propaganda" to conduct the study, but there are some relevant keywords that can be included: "Misinformation," "Disinformation," "Fake news," "Kremlin Propaganda," "Ukraine Russia." Future researchers should be aware of this and look forward to working on this to figure out the propaganda on social media research.

Declarations

Competing interests: The authors declare no competing interests.

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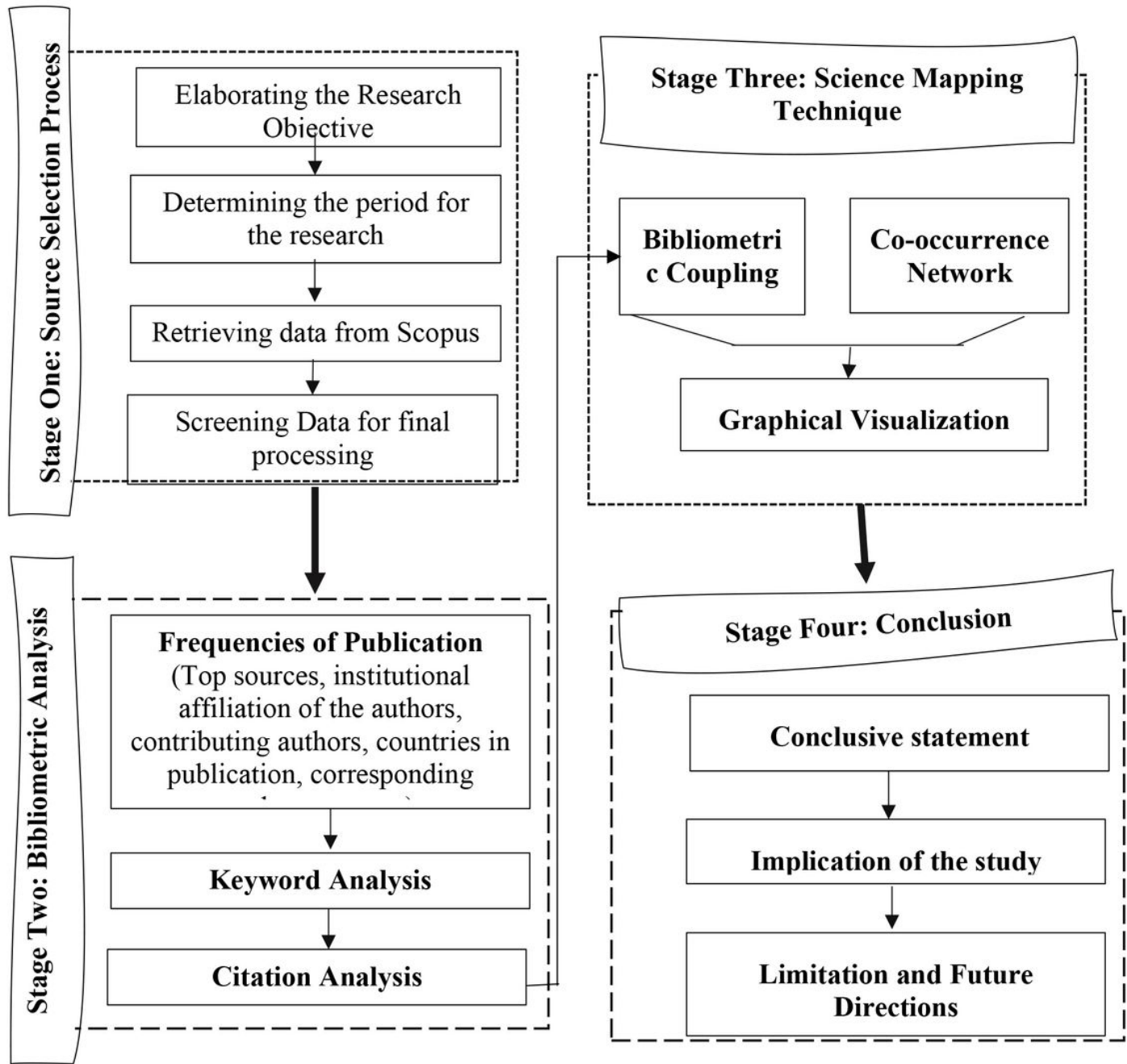
Figures

Stage One: Source Selection Process

- Elaborating the Research Objective
- Determining the period for the research
- Retrieving data from Scopus
- Screening Data for final processing

Stage Two: Bibliometric Analysis

- **Frequencies of Publication** (Top sources, institutional affiliation of the authors, contributing authors, countries in publication, corresponding
- **Keyword Analysis**
- **Citation Analysis**

Stage Three: Science Mapping Technique

- **Bibliometric Coupling**
- **Co-occurrence Network**
- **Graphical Visualization**

Stage Four: Conclusion

- **Conclusive statement**
- **Implication of the study**
- **Limitation and Future Directions**

Figure 1

Flow of the literature

Source: Author

```
┌─────────────────────────┐
│ Formulation of Research │
│        Question         │
└─────────────────────────┘
             │
             ▼
┌─────────────────────────┐
│  Selection of tools and │
│       techniques        │
└─────────────────────────┘
             │
             ▼
┌─────────────────────────┐
│  Record Identification  │
│   through Database      │
│       searching         │
└─────────────────────────┘
             │
             ▼
┌─────────────────────────┐           ┌──────────────────────────────────┐
│  Articles assessed for  │ ────────▶ │ ✓  Excluding Errata Documents    │
│       Eligibility       │           │ ✓  Editorial Material Excluded   │
└─────────────────────────┘           │       ✓  Papers Excluded         │
             │                        │           •  Not relevant        │
             ▼                        │         •  Without abstract       │
┌─────────────────────────┐           └──────────────────────────────────┘
│  Studies included for   │
│        Review           │
└─────────────────────────┘
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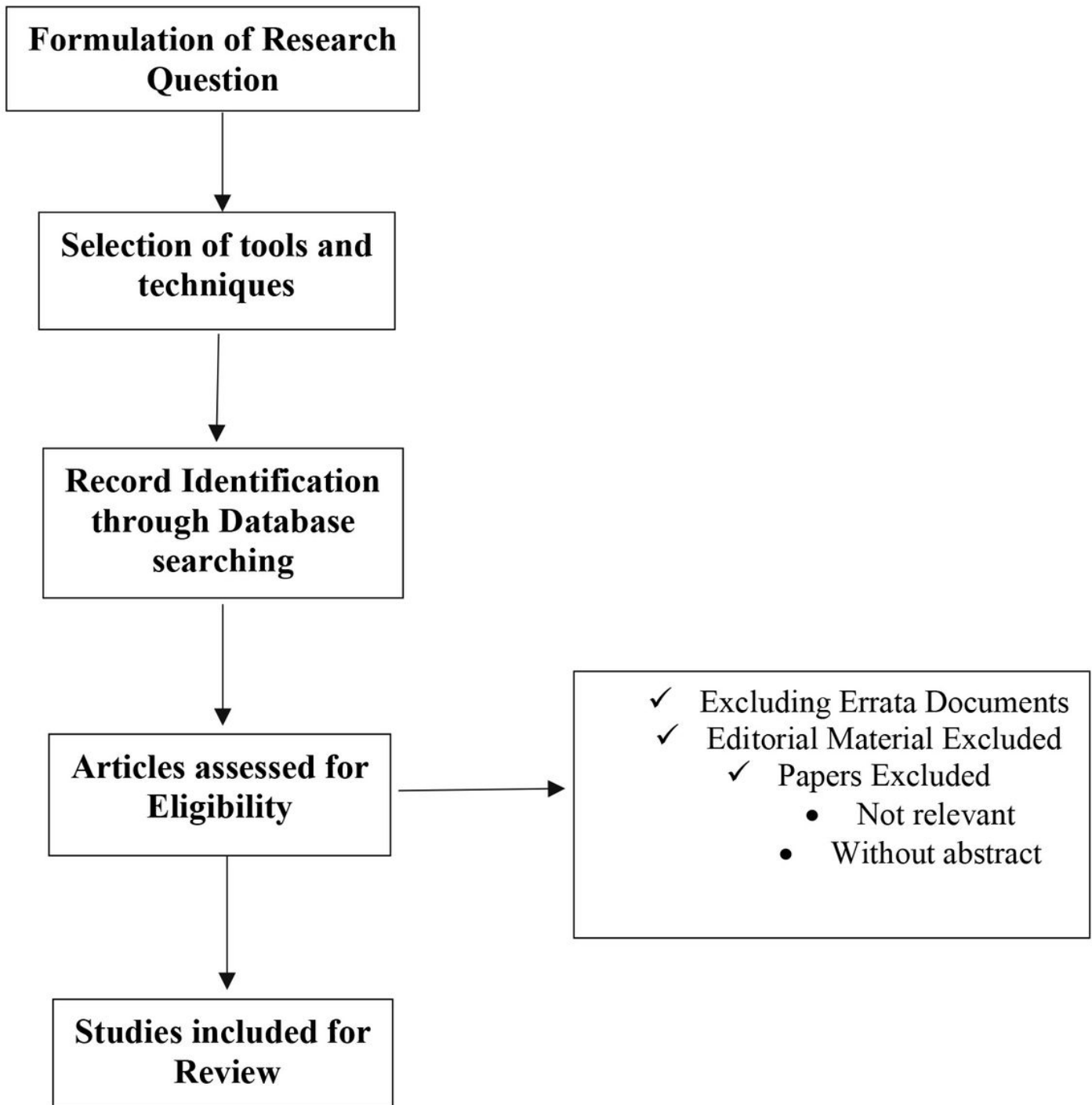
Figure 2
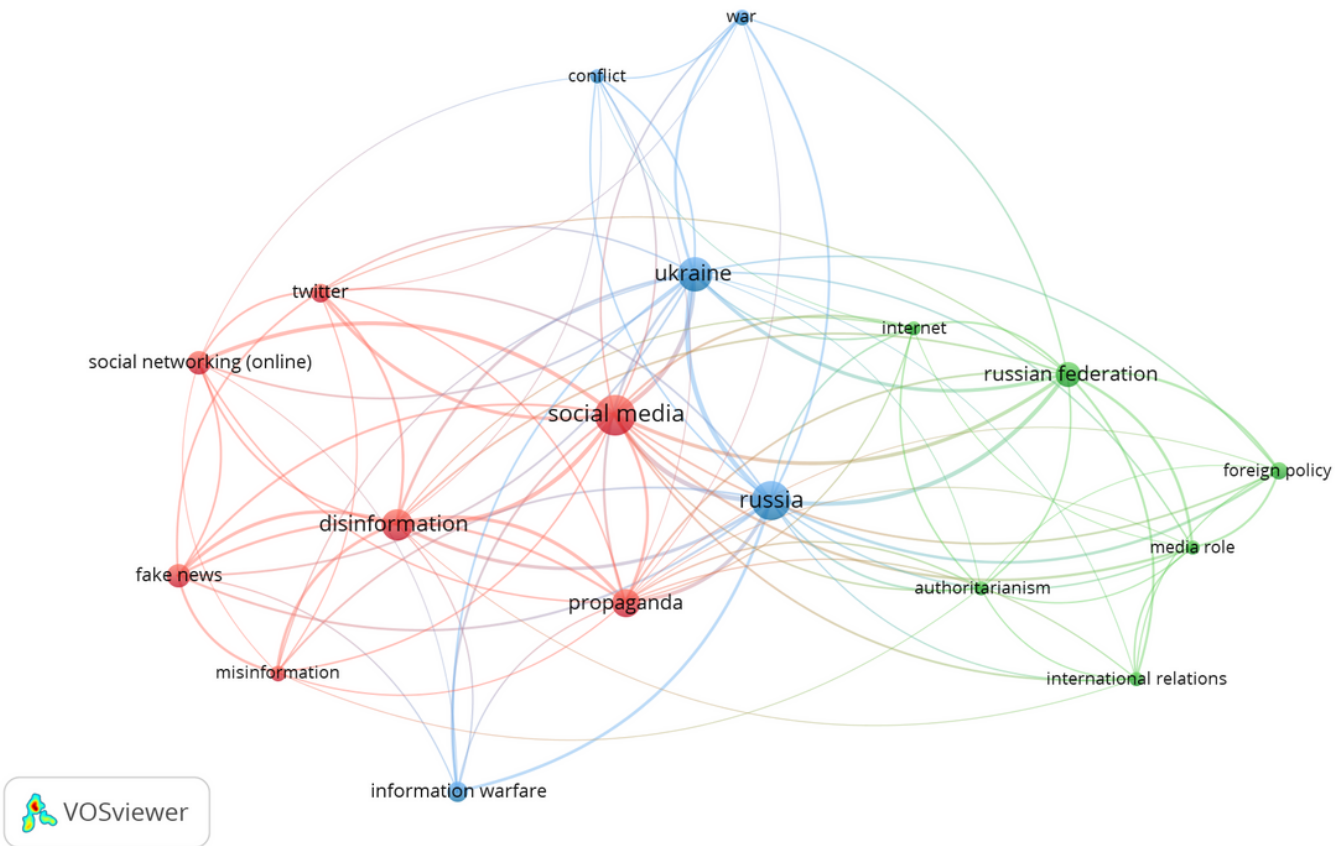
Sample selection process

Source: Author

Figure 3

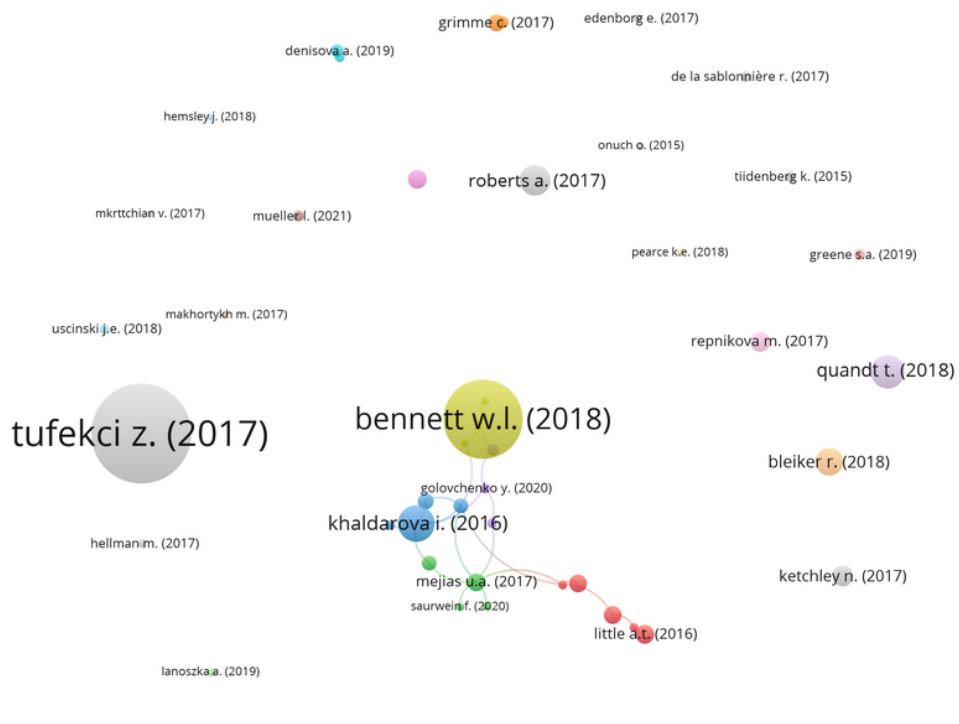Co-occurrence network diagram of all keywords.

Source: Author

Figure 4

Network map of the highest cited documents on Russia-Ukraine, Propaganda, and Social Media.
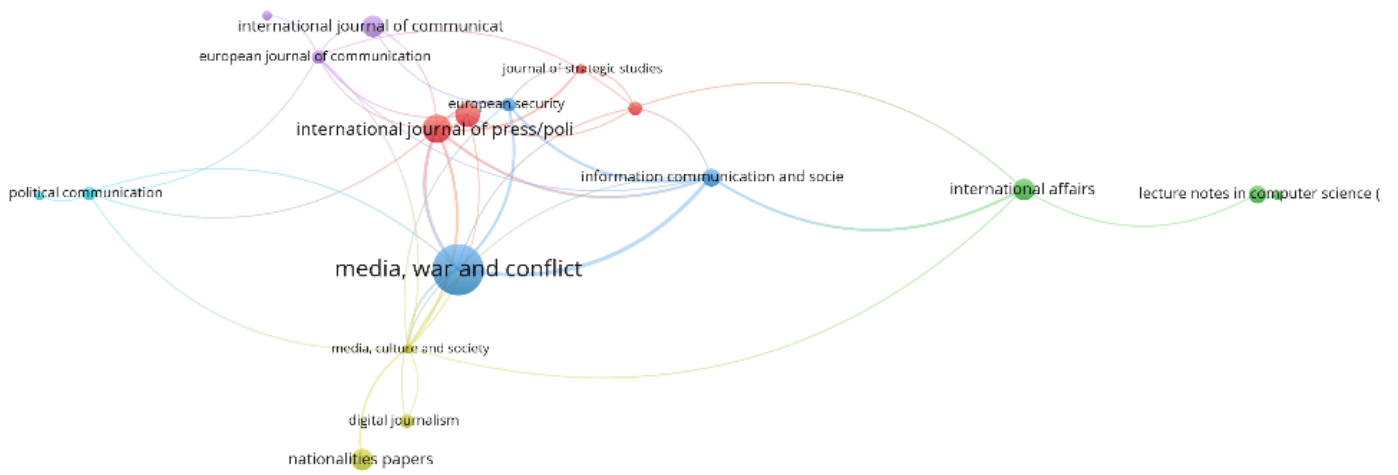
Source: Author

Figure 5

Network map of the most frequently cited sources on Russia-Ukraine, Propaganda, and Social Media
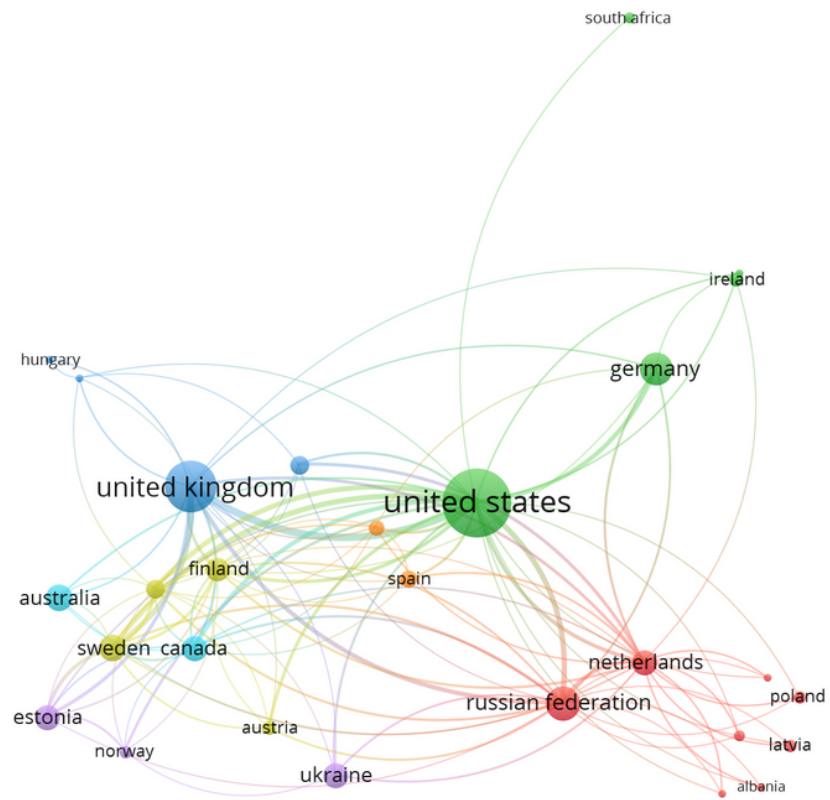
Source: Author

Figure 6

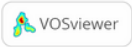Density visualization of most documented countries
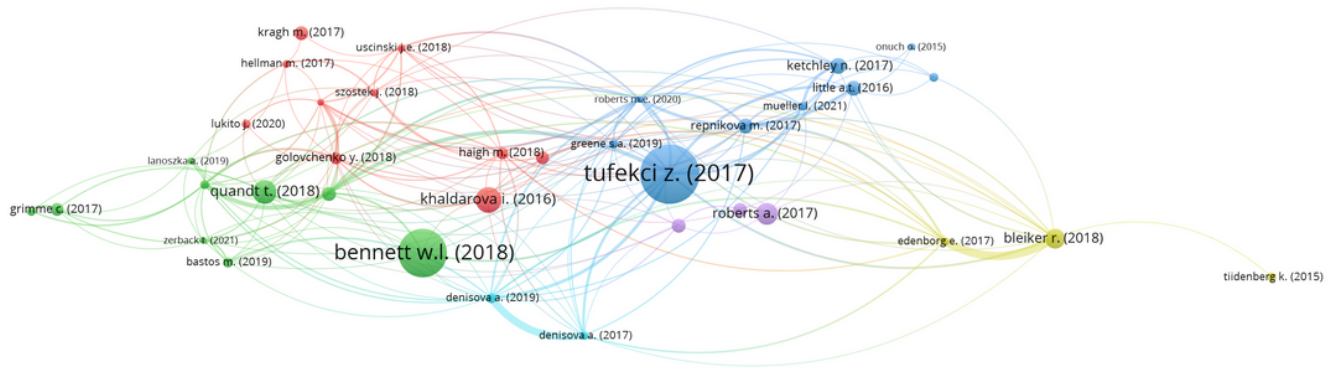
Source: Author

Figure 7

Network visualization of bibliographic coupling of documents.

Source: Author

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- RussiaUkrainePropagandaSocialMedia.csv