



Adria Digital Media
Observatory

MAPPING UKRAINE WAR DISINFORMATION ECOSYSTEM IN CROATIA AND SLOVENIA

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SUMMARY

This report is part of the research activities carried out within the project “Adria Digital Media Observatory” funded by the Digital Europe Programme. The aim was to identify local (Croatian) disinformation sources (websites, blogs, social media groups, media, opinion makers and known conspiracy theorists) related to the war in Ukraine.

Key findings:

- Identified a current disinformation ecosystem on the war in Ukraine, consisting of 21 clusters and supranational in nature, encompassing Croatia and its neighbouring countries,
- Found that the number of actors spreading and creating disinformation about the Ukraine war has decreased compared to COVID-19,
- Identified centralized and highly networked clusters formed around pseudo-media and media outlets that have evolved into strong communities capable of rapidly spreading disinformation,
- Identified the important role of media from Serbia in spreading/creating pro-Russian disinformation.

INTRODUCTION

This report presents an analysis of the spread of disinformation about the Ukraine war in Southeast (SEE) Europe (Croatia). Previous research (Brautović, 2022) has identified a Covid-19 disinformation ecosystem consisting of 18 supranational clusters covering Croatia and neighbouring countries, with the central clusters formed around pseudo-media and influencers and two types of purveyors of disinformation: the most influential and the super-spreaders. Similarly, the study by Cvjetičanin et al. (2019, p. 8) found two types of purveyors of disinformation: opportunistic and political actors, while the ecosystem spanned across the SEE neighbouring countries. In addition, Green et al. (2021, p. 6) found that most of the dominant purveyors of Covid-19 disinformation in the SEE were domestic actors, while the presence of foreign actors was limited and they all aimed “to “undermine the credibility of the European Union in the Western Balkans”.

Based on these findings, we developed the following research questions:

RQ1: Who are the online purveyors of disinformation on the Ukraine war in Croatia and Slovenia (users, accounts, pages and websites)?

RQ2: If the disinformation ecosystem on the Ukraine war in Croatia and Slovenia has been formed, what kind of structure does it have and how does this structure reinforce the transcendence of disinformation?

For the purposes of this report, we have used the term disinformation, which is defined as demonstrably false or misleading information that has been created and/or disseminated and can cause harm and has been labelled as such by fact-checkers.

METHODS

For this study, we adopted the methodology of the project “Pro-fact: Research, education, fact-check and debunk Covid-19 related disinformation narratives in Croatia”, which used a mix of methods to retrieve and analyse a sample of data: content analysis, social network analysis and visual network analysis. These methods were applied in the study of the networks of URL exchange, which allowed us to “...map communities of the pages, groups and profiles that promoted similar content” (Bruns et al., 2020, p. 15). In terms of the network of URLs, the node (vertex) represents the page, group or profile, while the edge (links) represents the relationships or interactions that connect them.

The dataset was collected using the snowball method from the collection of URLs found on the SEE Check.org website on the topic of disinformation about the Ukraine war (<https://seecheck.org/index.php/tag/ukraine/>)¹. A total of 379 fact check URLs (N=379) were collected for disinformation published between February 21, 2022 and August 27, 2023. Based on this URL list, a manual content analysis was performed and the original (still active) 55 disinformation URLs

¹ In previous research on Covid-19 disinformation, we only used the database of the Croatian fact-checking organization Faktograf, but in the case of the Ukraine war, it was relatively small to start a snowball sample and we wanted it to cover Slovenia as well. Therefore, we selected the sample of SEE Check, which combines the joint efforts of Slovenian, Bosnian, Montenegrin and Serbian fact-checkers to curb disinformation in the SEE.

(N=55, 14.5%)² were identified. We then used CrowdTangle to collect Facebook data on URLs leading to fact-checks and disinformation. The result was a dataset with 3767 edges (N=3767) and unique 578 vertices (N=578).

We used NodeXL software to perform the social network analysis and visual network analysis. The visualization was created using the Harel-Koren Fast Multiscale algorithm, clusters were coloured with different colours and connections (shared URLs) were coloured from orange to purple, depending on the weight of the relationship (number of shared URLs). Vertex size was scaled based on the betweenness centrality measure (measure of vertex influence in spreading information on social networks), and only the most influential vertices (the top 30 vertices) were labelled. Since the same sources (organizations or individuals) usually have multiple sources, such as websites, Facebook pages, and similar web domains, we used the same names/labels to reduce them to the same source whenever possible.

RESULTS

The network structure showed that Ukraine's war disinformation ecosystem consisted of 21 interconnected clusters, dominated by three main clusters (G3, G4 and G6), whose members were different pages and groups. The ecosystem had a supranational character as it covered the SEE region (Bruns et al., 2020) and was dominated by Serbian purveyors. These disinformation clusters on the Ukrainian war had a community character, with pseudo-media at their centre (G3 - 365srbija.com; G4 - Epoha & logicno.com; G6 - Српско-руско братство - духовно и историјско [Srpsko-rusko bratsvo – duhovno i istorijsko], In4s.net & webtribune.rs). All of the above sources have previously been labelled as purveyors of disinformation by various fact-checking organizations (Gajić, 2022; Grgurinović, 2022; Ćosić, 2022). Other clusters have a star-shaped distribution with individuals/fake accounts (G2 – The Duran) and mainstream media in the middle (G1 – vijesti.com; G5 – Kurir.rs; G13 – Reublika.rs; G14 – Novosti.rs; G15 – Mondo). No communities have formed in these clusters and the nodes have minimal interaction with each other.

² One possible explanation could lie in efforts to limit the spread of disinformation via social media platforms, as in an earlier study the figure was 47% (Brautović, 2022).

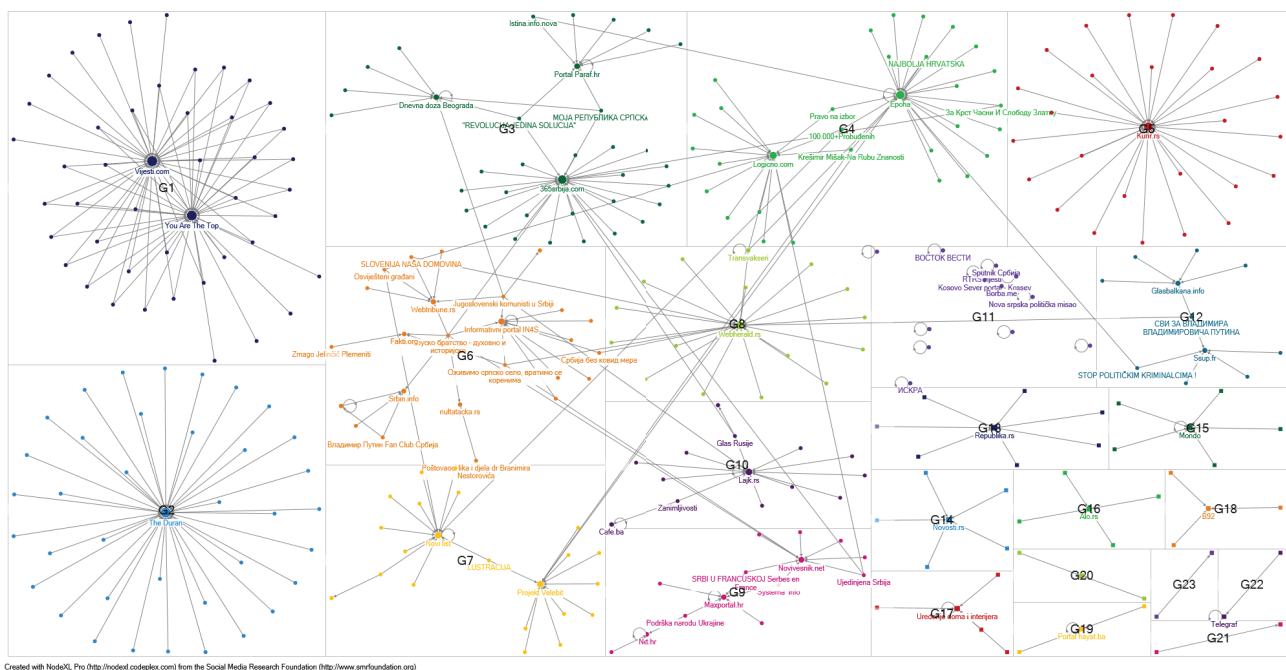


Figure 1: Social network analysis of Ukraine war disinformation ecosystem

Table 1 shows that all clusters have a small average geodesic distance, which can be interpreted as representing the spaces where disinformation can spread quickly (Franceschet, 2022). The average geodesic distance represents the shortest path between two vertices of the cluster, and the average online geodesic distance is 6.41 (Franceschet, 2022). In the case of the Ukraine war disinformation cluster, it is between 1.772 and 2.826, while in the case of the purveyors of Covid-19 disinformation in the SEE, it is between 1.830 and 3.471 (Brautović, 2022). In the case of the graph density metric, it is relatively low, but still almost 10 times higher than in the case of Covid-19 disinformation, which can be interpreted as meaning that the Ukraine war disinformation clusters were more interconnected compared to the Covid-19 clusters and led to an easier and faster flow of information.

Table 1: Top 10 clusters statistics

Cluster	Vertices	Unique Edges	Edges With Duplicates	Total Edges	SelfLoops	Average Geodesic Distance ³	Graph Density ⁴
G1	46	77	0	77	0	1.947	0.037
G2	38	37	0	37	0	1.896	0.026
G3	35	38	0	38	2	2.664	0.030
G4	31	33	0	33	1	2.589	0.034
G5	27	26	0	26	0	1.855	0.037
G6	25	29	0	29	2	2.826	0.045
G7	22	22	0	22	1	2.723	0.045
G8	17	17	0	17	1	1.772	0.059
G9	14	16	0	16	2	2.643	0.077
G10	14	15	0	15	2	1.949	0.071

As shown in Table 2, the list of the most influential nodes of pseudo-media (365srbija.com, Epoha, Webherald.rs, Webtribune.rs, Maxportal.hr, Sbrin.info, Logicno.com, Paraf.hr, etc.) and mainstream media from Serbia (Kurir.rs, IN4S, Republika.rs, Mondo, Novosti.rs, Alo.rs, B92, etc.), although other SEE mainstream media (Novi list, hayat.ba, Net.hr, etc.) are also represented. The super-spreaders were mainly Facebook groups and pages related to conspiracy theories (Osviješteni građani, Krešimir Mišak-Na Rubu Znanosti, 100.000+Probuđenih, Istina.info.nova, Србија без ковид мера) and Serbian and/or Russian mythology (Српско-руско братство - духовно и историјско, СВИ ЗА ВЛАДИМИРА ВЛАДИМИРОВИЧА ПУТИНА, Glas Rusije, МОЈА РЕПУБЛИКА СРПСКА, Оживимо српско село, вратимо се коренима, Ujedinjena Srbija, etc.).³⁴

³ The average shortest path between two vertices in the network.

⁴ The proportion between the number of the edges in a cluster or network and the maximum number of edges that cluster or network theoretically can have. The more edges the cluster or network have, the lower the graph density.

Table 2: Top 30 the most influential and super-spreaders pages, groups and verified users

The most influential (in-degree)	Super-spreaders (out-degree)
Vijesti.com	Српско-руско братство - духовно и историјско
The Duran	Jugoslovenski komunisti u Srbiji
You Are The Top	Transvakseri
365srbija.com	Оживимо српско село, вратимо се коренима
Kurir.rs	Ujedinjena Srbija
Epoha	Osviješteni građani
Webherald.rs	Krešimir Mišak-Na Rubu Znanosti
Logicno.com	СВИ ЗА ВЛАДИМИРА ВЛАДИМИРОВИЧА ПУТИНА
Novi list	Glas Rusije
Lajk.rs	100.000+Probuđenih
Projekt Velebit	МОЈА РЕПУБЛИКА СРПСКА
Informativni portal IN4S	“REVOLUCIJA, JEDINA SOLUCIJA”
Novivesnik.net	СРБИН.инфо портал
Portal Paraf.hr	Jutarnji
Dnevna doza Beograda	За Крст Часни И Слободу Златну
Republika.rs	Istina.info.nova
Webtribune.rs	STOP POLITIČKIM KRIMINALCIMA !
Maxportal.hr	Systema info
Mondo	SRBI U FRANCUSKOJ Serbes en France
Glasbalkana.info	Србија без ковид мера
Ssup.fr	SLOVENIJA NAŠA DOMOVINA
Novosti.rs	NAJBOLJA HRVATSKA
Uređenje doma i interijera	Podrška narodu Ukrajine
Srbini.info	LUSTRACIJA
Alo.rs	Zanimljivosti
Fakti.org	Zvonimir Despot
Net.hr	Pravo na izbor
B92	América Televisión
Portal hayat.ba	TV5
nultacka.rs	ABS-CBN

The comparison showed that 18.77% of the purveyors of disinformation about the Ukraine war had also previously disseminated/created COVID-19 disinformation.

Table 3: Top 15 of the most popular Ukraine war disinformation sorted by popularity (number of shares on public Facebook pages)

1.	https://lat.rtrs.tv/vijesti/vijest.php?id=473006
2.	https://www.b92.net/info/vesti/index.php?yyyy=2022&mm=05&dd=07&nav_category=78&nav_id=2150652
3.	https://www.vostok.rs/index.php?option=btg_novosti&idnovost=136420
4.	https://web.facebook.com/watch/?v=362196815517489&paipv=0&eav=AfYDCaldrS-
5.	https://www.in4s.net/svjetska-banka-predlazemo-da-se-sankcije-rusiji-ublaze/
6.	https://srbin.info/svet/uznemirujuce-ukronacisti-hicima-u-glavu-ubili-10-ruskih-ratnih-zarobljenika/?fbclid=IwAR0Wac-R1DsJzqcWewbd4Hfo0Qji3c6WUG0x5fdg3uy6zlkz2bRbnj593b0
7.	https://srbin.info/svet/najvazniju-bitku-protiv-rusije-sad-izgubile-izvoznici-naft-e-odbili-odluku-zapada/?lang=lat
8.	https://lajk.rs/vesti/ruske-vesti/165474/americki-kongresmen-trazi-opsti-rat-rusiju-treba-unistiti-jer-je-pravoslavna-zemlja-s-tradicionalnim-vrednostima/?fbclid=IwAR1UiK7Cy5AUOn_rxju1xzWVpeDNYhpSY_Nhfej7Sec04DQr7-2bzdD6qFw
9.	https://www.logicno.com/vijesti/nema-nikakve-sumnje-napadom-na-sjeverni-tok-amerikanci-su-objavili-rat-europi-pogledajte-priznanje.html?fbclid=IwAR0KWWcMJYeqxmozHXe8AbhKeWiFPkh98Ull1-uLsyrDhwCKBcsRev80Jn4
10.	https://epoha.com.hr/2022/09/18/procurio-sokantan-dokument-o-tome-kako-su-sad-planirale-rat-i-energetsku-krizu-u-europi/
11.	https://www.paraf.hr/mislav-kolakusic-europskom-unijom-danas-upravljaju-glup-i-gluplji/
12.	https://www.in4s.net/zelenskom-mili-den%D1%8Cgi-ruskom-bracnom-paru-iznajmio-svoju-vilu-u-italiji/
13.	https://365srbija.com/orban-ukinuo-sankcije-rusiji-pobuna-u-evropi-se-siri-kao-poplava-grcka-spanija-i-portugal-nece-da-smanje-potrosnju-gasa-srbijo-misli-o-ovome/?utm_source=tomo&utm_medium=facebook&utm_campaign=tomo
14.	https://www.in4s.net/vasington-post-otkriva-pozadinu-rata-u-ukrajini/
15.	https://webherald.rs/zaharova-pronasli-smo-dokaze-prskali-su-ljude-virusima-iz-vazduha-dronovi-sve-otkrivaju/

CONCLUSION

Like the purveyors of Covid-19 disinformation, the Ukraine war disinformation sources/hubs have formed supranational disinformation ecosystems consisting of various social media pages, groups and profiles, including pseudo and mainstream media websites originating from Serbia and the rest of the SEE region. At the centre of the SEE disinformation ecosystem were community clusters, which represented the spaces where disinformation could spread quickly and efficiently and were formed around pseudo and mainstream media.

LIMITATIONS

The data collected with CrowdTangle comes only from the public posts published on the pages, public groups and verified profiles and represents up to 2% of all posts published on the topic (Donovan, 2020). Furthermore, the data collected for the purveyors of Covid-19 disinformation is limited only to actors/content available at the time of the research (November 2023).

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ADMO

Project Adria Digital Media Observatory (ADMO) ensures the establishment and continuation of the Croatian and Slovenian hub operation for tackling disinformation and cooperation with EDMO on multiple levels by a multidisciplinary and intersectoral approach. As an effective response to the challenges for democracy and society, the project sees a combination of different expertise and methods - attacking sources/actors, networks, reasoning, and disinformation narratives from different spheres and combining techniques. The implemented activities will contribute to the general objective - creating and ensuring the long-term development of a broader Croatian/Slovenian hub on digital media composed of a multidisciplinary community of academic researchers, fact-checkers and media practitioners, journalists and civil society advocates capable of detecting and analysing disinformation campaigns; and supporting the government and regulator in strengthening the collective response to disinformation threat to democracy.

The project comprehensively approaches the social, political, and health problem of spreading disinformation campaigns through research, awareness-raising, and capacity-building methods. The key projects' outcomes/deliverables are: the project's website and its integration with the EDMO platform, production of the continuous flow of fact-checks, publication of analytic reports on disinformation content, disinformation sources, origins of disinformation narratives, the role of international actors in spreading disinformation, disinformation acceptance and debunking, on the reasoning behind conspiracist and anti-conspiracist behaviour, training for journalists and student of journalism, media literacy education activities for citizens, reports on the Code of Practice on Disinformation in Croatia and on the financial viability of the Croatian and Slovenian news media sector.



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