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Ambassadors of War: Social and Semantic Networks of Belarusian Pro-Government Telegram Channels during the 2022 Russian Invasion of Ukraine

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Abstract

This study examined the response of Belarusian pro-government Telegram channels to the 2022 Russian invasion of Ukraine in its initial phase (22 February to 24 March 2022). A socio-semantic network approach was used to analyse the relationships between 21 influential pro-government channels and the concepts they disseminate. We applied a four-stage framework based on mutual citation analysis, extended hyperlink analysis, bipartite channel-concept network analysis, and inter-conceptual relations analysis.

The findings indicate that Belarusian pro-government channels function as critical intermediaries between Russian media and local Lukashenka supporters. The network structure reveals two principal centres of media activity: one focusing on disseminating pro-Russian military content, and the other propagating messages supporting the Belarusian government. This distinction is also evident in the main topics discussed, which can be categorised as pro-Russian warfare, pro-Russian foreign policy, Belarusian domestic policy, and pro-Lukashenka content. Notably, the high proportion of war-related concepts within this semantic structure suggests that Russian political language has significantly influenced the network of pro-government channels, challenging the maintenance of domestic Belarusian narratives. Furthermore, anonymous channels on the network's periphery disseminate more explicitly aggressive war-related concepts, potentially operating with greater autonomy from direct government control.

This study contributes to understanding information warfare dynamics in Eastern Europe during the 2022 Russian invasion of Ukraine. It provides insights into the complexities of information networks in contested political spaces by revealing how both social and semantic relations between Telegram channels shape media agendas.

Keywords: Belarus, Telegram, Russia, Ukraine, war, media, network analysis, 2022

1 Introduction

The rule of authoritarian and hybrid regimes is based on more than 'hard' power: it is impossible to rule society through repressive means and physical coercion alone. In Russia, for example, 'soft' power is actively used to control public opinion and the media agenda

(Mejias & Vokuev, 2017; Karpchuk & Yuskiv, 2021; Kizlova & Norris, 2022). In Belarus, the brutal repression of peaceful protests was accompanied by active media support from pro-state official and grassroots Telegram channels, YouTube bloggers, and public figures, which contributed to the escalation of conflict and polarisation of society (Navumau, 2020; Polovyi, 2021; Greene, 2022; Sulzhytski, 2022; Kuznetsova, 2023; Deikalo, 2023).

After the Russian invasion of Ukraine in 2022, the most innovative OSINT (Open-Source Intelligence) and research projects devoted all their efforts to identifying and countering the influence of pro-Russian propaganda, especially in EU countries and the US (Oates et al., 2022; Geissler et al., 2023; Jarynowski, 2022; Lawriwsky, 2023; Greene, 2023). However, these projects focus primarily on traditional sources of pro-Russian influence: Twitter (Chen & Ferrara, 2023), official media such as Russia Today (Metzger, 2023), and well-known Telegram channels in Russia and Ukraine (Nazaruk, 2022; Ptaszek et al., 2023). By contrast, a significantly smaller number of studies and projects on anti-Ukrainian propaganda highlight that supporters of the Lukashenka regime actively used Telegram to spread anti-Ukrainian propaganda and justify the country's indirect involvement in the conflict (Deikalo, 2023; Katerynych, 2023). Given the relatively low impact of pro-Russian information influence in Western Europe and the significant increase in its impact in Belarus, this situation poses a real security challenge, particularly in Eastern Europe.

We propose to fill this gap with a two-stage analytical approach: firstly, a network analysis based on citation patterns will uncover the interconnectedness of pro-government Telegram channels, and secondly, socio-semantic network analysis will delineate the shared concepts and discourses propagated by these channels. Our research aims to enrich and deepen our understanding of the complex interplay between pro-government and pro-Russian Telegram channels in Belarus, contributing to a more comprehensive map of Russian warfare influence.

We will answer the following research questions to achieve this goal:

RQ1. How are pro-government Telegram channels in Belarus interconnected in terms of citation patterns and core-periphery structure?

RQ2. What are the similarities and differences in the network's semantic patterns across the core, near-periphery, and far-periphery channels?

RQ3. How are the shared concepts disseminated by these channels interconnected, particularly concerning Pro-Russian and anti-Ukrainian agendas and justifications for Belarus's indirect participation in the 2022 Russian invasion of Ukraine?

The article begins by examining the relationship between Belarusian pro-government media, pro-Russian, and anti-Ukrainian agendas during the 2022 Russian invasion of Ukraine in recent academic debates. Next, we will turn to the existing studies of harmful content dissemination in social media, especially on Telegram, focusing on the promising possibilities of social-semantic network analysis. On this methodological basis, we will implement a socio-semantic network approach to examine official and grassroots pro-government Telegram channels in Belarus during the war's first and most intense month. Finally, we will turn to the patterns of mutual citation and inter-conceptual relations among the selected channels to show how pro-Russian warfare narratives were created on

the periphery among anonymous Telegram channels and further spread through odious public propagandists and several official media sources to the semantic core of the pro-government Belarusian discourse.

2 Literature review

2.1 Propaganda profile of the Belarusian pro-government media

Present state-supported propaganda in Belarus has much in common with instruments of the old Soviet regime and shares many of its achievements (Courter, 2022; Karpchuk & Yuskiv, 2021). For example, the control and management system of public opinion is based upon a monopoly on printed and audio-visual media, and repression of independent media and citizens who do not support the state's policies (Ciuriak, 2022). However, state propaganda also differs from its Soviet ancestor: it has acquired a hybrid digital-analogue nature when traditional media are complemented with cyber-propaganda (Doroshenko & Lukito, 2021).

In Belarus, social media platforms have become one of the predominant channels for distributing and receiving information. Among the plethora of social media, Telegram stands out in particular. This platform has been essential in distributing political information since 2020 and, unfortunately, has not been sufficiently researched by other authors (Kravchyk, 2022). This situation, however, changed after the 2020 protests, with an in-depth exploration of various media in Belarus, including Telegram (Wijermars & Lokot, 2022; Slobozhan et al., 2023).

Belarusian pro-government media mainly relied on newspapers and television (Silitski, 2006; Marples, 2007; Rudling, 2017; Szostek, 2018; Manaev et al., 2021). Still, after the mass protests in 2020, it turned out that the opposition movement was more successful in distributing information on social media and fully controlling the agenda (Asmolov, 2020; Laputska, 2021; Robertson, 2022; Mateo, 2022). The authorities responded by rapidly adopting unprecedented measures to restrict freedom of speech, arresting managers and rank-and-file employees of independent media, creating a register of 'extremist channels', and repressing people with interest in media that do not conform to the rhetoric of the authorities (Rust, 2022; Robertson, 2022; Onuch & Sasse, 2022). Along with the active repression, propagandists created channels on YouTube, TikTok, and Telegram to reach a broader audience and regain at least partial control over public opinion (Sulzhytski, 2022; Świerczek, 2022).

This strategy was successful. The effectiveness of spreading disinformation on social media is higher than in traditional media because it attracts a broader and more differentiated audience with regards to age and social status. In addition, information on social media is often spread virally, which is achieved, for example, with the help of bots (Ciuriak, 2022). Meanwhile, the younger generation in Belarus is less likely to trust TV sources (Alyukov, 2022). As a result, pro-government media also strive to be up to date (Doroshenko & Lukito, 2021; Martyniuk & Shuba, 2022): attracting a large number of subscribers, using slang (e.g. 'fakes'), and using new digital platforms. In addition,

pro-government channels often use various types of content, including news, analytical publications, interviews with public experts, and entertainment (Alyukov, 2022).

2.2 Belarusian pro-government media during the 2022 Russian invasion of Ukraine

Authors studying anti-Ukrainian narratives in Russian media emphasise that the primary audience and target of hate propaganda are Russian-speaking communities in Russia and beyond (Torichnyi et al., 2021; Kravchyk, 2022; Courter, 2022). As a result, some dubious and unverified news reaches the Western media space, especially where there are initially pro-Russian groups. At the same time, diplomats try to soften the overall picture of Russian aggression through cover-up and disinformation and convince other countries of this (Kravchyk, 2022). Western countries actively counter the spread of disinformation and propaganda through severe restrictions, such as blocking Russian TV channels, YouTube content, and other online resources (Golovchenko, 2022; Yurkova, 2018).

The situation is different with the Belarusian media: unlike their Russian counterparts, these channels are much smaller. Before 2020, Belarusian pro-government media only sometimes corresponded to the current Russian or global agenda and focused mostly on domestic and local issues. Moreover, official rhetoric towards Russia, mediated by the Belarusian pro-governmental media, was very volatile. Thus, in 2020, before the presidential election, Russian oligarchs were accused of funding the Belarusian opposition; after the August election, the agenda shifted to blaming the West for supporting the protests (Manaev et al., 2021). After the beginning of the 2020 protests, the situation changed dramatically with the arrival of media specialists from Russia to restore Lukashenka's image, which was destroyed during the elections (Wilson, 2021). In addition to frequent narratives about 'brotherly' relations with Russia, the Belarusian media field also disseminated messages framing Lukashenka as the only fighter for Belarusian independence, branding traitors from Belarusian opposition, and declaring conflict with Western countries (Sulzhytski, 2022).

Since at least 2014, Lukashenka has taken a very ambivalent position towards Ukraine (Polovyi, 2022). On the one hand, he has not expressed explicit anti-Ukrainian sentiments that have become the basis of the Kremlin's political rhetoric. However, he refrained from condemning Russia's aggressive actions. He tried to present Belarus as a peacemaker and the primary mediator of Russian-Ukrainian relations, and to benefit from cooperation with both countries. However, the 2020 protests finally turned him towards the Kremlin and its agenda (Astrouskaya, 2022; Kotljarchuk & Zakharov, 2022; Hansbury, 2023).

Although Lukashenka is still more committed to anti-Western than to anti-Ukrainian rhetoric, the media that support him are becoming more and more like their Russian counterparts (Mudrov, 2022). Since the beginning of the war, the pro-governmental agenda in Belarus tends to demonise Ukrainians, especially the Ukrainian authorities, as well as to constantly strengthen anti-Western rhetoric and create an image of Belarus as a fortress besieged by Western enemies (Katerynych, 2023; Gershovich, 2023).

Even though the pro-government media in Belarus have not been able to expand their influence significantly (Kuznetsova, 2023), they focused primarily on those who pre-

viously did not support the opposition and were in solidarity with the Lukashenka 'geopolitical choice' of an alliance with Russia. Thus, in the case of Belarus, the ratio of the three conditional sources of influence – local pro-Russian activists, supporters of the Lukashenka regime, and pro-Russian groups directly or indirectly subordinate to the Kremlin – remains open. We argue that in each case of the spread of aggressive pro-war narratives, there is a mix of local Belarusian supporters of war and agents of the Kremlin-facilitated agenda. While it is difficult to reliably assert the motives and goals of the degree of creative independence of these groups, we can trace the extent to which ideas, concepts and narratives are translated, modified, distorted or supplemented in the agenda of pro-Russian channels in Belarus.

2.3 Social and semantic network analysis of media during the 2022 war in Ukraine

The relational perspective of social network analysis offers powerful tools to map and examine complex social media structures and their role in the propagation of harmful content, including hate speech, propaganda, and disinformation (Klausen et al., 2012; Ben-David & Fernández, 2016). On the other hand, semantic analysis focuses on the meaning and context of language, providing critical insights into the subtleties of hate speech, which often relies on coded language and euphemisms (Magu & Luo, 2018; Mathew et al., 2020). Combining both approaches – social and semantic network analysis – holds the most promise (Pereira-Kohatsu et al., 2019; Nagar et al., 2023). This integrative approach enables a more comprehensive understanding of harmful content, accounting for the concepts, their context and their interplay within social networks. Researchers can develop more sophisticated and accurate models for detecting and studying harmful content in online media by focusing on social and semantic relations within hate networks.

A relational perspective on harmful content has proven to be especially effective in exploring the media and public discourse surrounding the Russia-Ukraine conflict. Several studies employed network analysis to examine the influence of different agents of information warfare on public perception. Li et al. (2023) used network analysis to investigate the social activity of the Twitter account @UAWeapons during the conflict, while Alieva et al. (2022) analysed the manipulation of political discourse by bots on social media regarding topics related to the activities of the Russian opposition. Furthermore, Ngo et al. (2022) explored public sentiment towards economic sanctions in the war using a combination of network analysis and machine learning.

Complementing these studies, papers with a stronger emphasis on textual analysis methods include semantic network analysis – Park et al. (2023), for example, use it to explore how different countries report on the same global event – combined with sentiment analysis (Tao & Peng, 2023; Eligüzel, 2023), which revealed the emotional tone of social media posts regarding the conflict.

While reinforcing the relational perspective with more sophisticated approaches, Hanley et al. (2023) used semantic search to track Russian state media narratives about the Russo-Ukrainian War on Reddit. Within the complex task of monitoring the spread of misinformation, Alieva, Ng and Carley (2022) have investigated Russian narratives about

US Biolabs in Ukraine, using network analysis to detect critical influencers and disseminators. Additionally, Džubur et al. (2022) combined sentiment and network analysis to explore Twitter discussions surrounding the conflict, identifying the most influential 'pro-Russia' and 'pro-Ukraine' hashtags and users.

Thus, most studies reviewed often use a more methodologically complex and insightful relational perspective to analyse English-language content on platforms popular in Western Europe, like Twitter. Much less attention is paid to hate communities on Telegram, one of the leading social media platforms in Russia and Belarus, where the role of propaganda and misinformation has a critical and direct impact, at least due to language and moderation features. At the same time, 'hidden' and local hate networks disseminating aggressive pro-war content in Belarus are almost absent from the research focus, which is mainly official pro-war propaganda.

3 Methodology

3.1 Defining the socio-semantic network of Telegram channels

The studies mentioned above on the spread of harmful content after the 2022 Russian invasion of Ukraine reveal a split in analytical focus. This ambivalence is characterised by either an emphasis on the semantic features of the content (textual analysis) or the social relationships among online agents (network analysis). We will focus on the interplay between social and semantic networks within complex systems to bridge this divide. This text applies the socio-semantic analysis methodology (Roth & Cointet, 2010; Roth, 2013), which is appropriate for examining knowledge communities in common and exploring the blogosphere networks in particular (Roth & Cointet, 2010, p. 18; Roth, 2013, pp. 7–13).

Following the empirical protocol proposed in the socio-semantic analysis methodology (Roth & Cointet, 2010, pp. 17–18; Roth, 2013, pp. 7–8), we will conduct a combined analysis that includes both social network analysis based on observable relations among agents (such as citations and mentions), and socio-semantic network analysis, which involves the use of specific concepts (noun phrases) by agents. In our case, we define the *social network of Telegram channels* as a graph, where nodes represent Telegram channels, and links are reposts, mentions and responses to messages. Similarly, *the socio-semantic network of Telegram channels* is depicted as a bipartite graph, where one set of nodes represents channels, and the other represents concepts. The links between these two sets of nodes are expressed through the use of specific concepts by the channels. In the corresponding subsections 3.3 and 3.4, we will describe the concrete data analysis pipelines for analysing these two types of graphs in detail.

3.2 Data selection procedure

Our study used the following protocol for channel selection and subsequent data extraction and processing. We used rating statistics from the TGStat service to collect statistical information about the channels, which includes a ranking section for Belarusian Telegram

channels. We then used a citation rate criterion to select the most cited channels to ensure that our sample included not only popular channels with a high number of subscribers but also less popular channels that are nevertheless often used as a source of information by other channels. In other words, our focus was on more than just audience reach, but also the channel's authority, among other channels within the pro-government network. This approach allowed us to select 21 of the most authoritative (and often popular) Belarusian official public and grassroots anonymous pro-government Telegram channels (Table 1). Specifically, our sample included seven anonymous channels, five state news agency channels, five public activist channels, and four state ministry channels. We manually selected channels with a high citation rate that directly expressed support for the government or were directly subordinated to state structures.

Table 1 List of selected Telegram channels

Channel type	Citation index	Subscribers 22.02.2022	Subscribers 24.02.2022	Typology code
anonymous	1080	3957	5446	ANON # 1
anonymous	963	4431	4866	ANON # 2
anonymous	899	1369	1363	ANON # 3
anonymous	359	7506	8791	ANON # 4
anonymous	336	2188	2176	ANON # 5
anonymous	323	6307	6328	ANON # 6
anonymous	91	16480	14122	ANON # 7
government organisations	681	8610	9016	GOV ORG # 1
government organisations	538	24670	24676	GOV ORG # 2
government organisations	423	14428	14386	GOV ORG # 3
government organisations	410	7660	7920	GOV ORG # 4
official media	1209	22924	24,644	OFFICIAL MEDIA # 1
official media	1047	104547	113,135	OFFICIAL MEDIA # 2
official media	1004	14325	15,570	OFFICIAL MEDIA # 3
official media	842	10068	10,257	OFFICIAL MEDIA # 4
official media	635	12906	13,640	OFFICIAL MEDIA # 5
public activist	378	6463	6791	PUBLIC ACTIVIST # 1
public activist	326	7951	8054	PUBLIC ACTIVIST # 2
public activist	291	9314	9418	PUBLIC ACTIVIST # 3
public activist	115	36105	36,185	PUBLIC ACTIVIST # 4
public activist	85	20.000-21.000	20.000-21.000	PUBLIC ACTIVIST # 5

We chose data from 22 February 2022 to 24 March 2022, covering the first month of the invasion. This choice was based on several factors. Firstly, the chosen timeframe marked the initial phase of the war, a period characterised by highly fluid and viral public opinion, government positions and media narratives. Secondly, the first month of the conflict was a period of peak media activity not only in Belarus but also in Ukraine and Russia (Ghasiya & Sasahara, 2023; Kiforchuk, 2023; Ptaszek, et al., 2023). In addition, this study is one of the first, to our knowledge, to analyse the activity of pro-government Belarusian Telegram channels during the war using network analysis, so it is crucial to establish a clear and accessible baseline for further research on the dynamics of pro-government discourse in Belarus after the invasion. Finally, it was essential to choose a time frame that could be used for comparative studies, as media activity in the first month of the war has been best studied in different countries.

All messages were collected via the Telegram desktop archiving function in the .json file format without photos and audio files – the final dataset contained around 44,700 messages with text and citation information. The content of the selected channels was mainly in Russian, sometimes using Belarusian or English words. After collecting the data, we divided the initial dataset into two separate datasets – first with the citation metadata and second with messages' textual data. After constructing the final social and socio-semantic graphs, we filtered out nodes with a degree range of less than two to show only relatively significant relations.

3.3 Social network analysis pipeline

Our social network analysis pipeline consists of the following steps. First, we extracted only the textual part of messages and metadata from our initial dataset. Next, we discarded irrelevant data, while the citation information that was critical for our network analysis, such as 'mentions', 'forwarded_from' and 'reply_to_message_id', was processed and combined to form a 'target' column of a future network containing approximately 23,400 channel-to-channel connections. The final step was to construct a directed graph, with source nodes representing selected Telegram channels, target nodes representing cited Telegram channels, edges representing citation links, and weights based on the number of citations. The final graph was visualised and analysed using Gephi 0.10.

After creating the citation graph of 21 selected channels, we applied a mutual degree range filter in Gephi equal to 1 (one). This step allowed us to explore channels with a mutual connection to at least one other source node from our dataset. For this graph, we calculated the average degree and density metric to understand connectivity, robustness, and potential for information spread within the obtained network.

Next, we supplemented the citation graph of the selected source channels with a broader set of cited channels from mentions, responses and citations. At this stage, we used the eigenvector centrality metric to identify the most influential channels likely to be the main disseminators of information. Additionally, we manually checked the affiliation characteristics of cited/mentioned channels within the highly weighted edges in the extended citation graph.

3.4 Semantic network analysis pipeline

At this stage, the pipeline started with text preprocessing: removing stopwords, lemmatise words with the MyStem Python library for the Russian language and extracting meaningful concepts (noun phrases) by combining Spacy's POS tagging with the creation of bigrams and trigrams using the Gensim. Our pipeline further involved quantifying the importance of each extracted concept in our dataset using the TF-IDF algorithm. Following this, we grouped the extracted concept by channel. We then used Scikit-Learn's TfidfVectorizer to compute each channel's TF-IDF score for each concept. Next, we identified each channel's top 1000 concepts with the highest TF-IDF scores. The selected concepts were further manually checked and cleared of meaningless stop words. Lastly, we built a bipartite graph with the NetworkX library, with the channels and the top concepts serving as separate sets of nodes. Edges were drawn from each channel to its corresponding concepts, with the edge weight denoting the TF-IDF score of the concept. The final graph was visualised and analysed via Gephi 0.10.

After extracting network communities, we distinguished a particular core-periphery distribution of channels and shared concepts. We first gave a general description of channel-to-concept relations within the detected network communities. Then, we characterised the semantic core of the network and the relations between central concepts and different discourses. Finally, we indicated which concepts were on the periphery of the semantic network and analysed various hidden alliances between channels and agendas in more detail.

3.5 Ethical considerations

Our study navigates a delicate landscape by analysing propaganda channels on Telegram. We aim to contribute to a better understanding of these networks and their structures rather than promoting or giving visibility to these channels or their content. We are aware of the potential pitfalls associated with publicising the names of the propaganda channels, especially those that are less visible. We want to avoid inadvertently promoting or subjecting these channels to unwarranted attention. Therefore, we have kept the channel ID, names and links private while generating graphs using channel typology codes (ANON, GOV_ORG, OFFICIAL MEDIA, PUBLIC ACTIVIST).

4 Findings

4.1 The role of Belarusian Telegram channels in the dissemination of pro-Lukashenka and Russian agendas

This section addresses the first research question (RQ1): how are pro-government Telegram channels in Belarus interconnected regarding citation patterns and core-periphery structure? We demonstrate the connectivity patterns among these channels, particularly how they cite each other and organise themselves into a structured network. We also question the extent to which these channels form a cohesive, interconnected network instead of a collection of isolated entities.

We argue that Belarusian Telegram channels act as explicit connectors in agenda-setting and intermediaries, bridging the gap between Russian media and supporters of the Lukashenka regime. This connective function can be observed at three levels: official media channels, which link the official Russian media discourse with the Belarusian government; public propaganda channels, which connect the pro-Lukashenka agenda with power groups in Russia and Belarus; and finally, anonymous activists, who are linked to the active pro-war Russian channels and further facilitate the dissemination of the pro-war agenda. Below, we will address these findings in more detail.
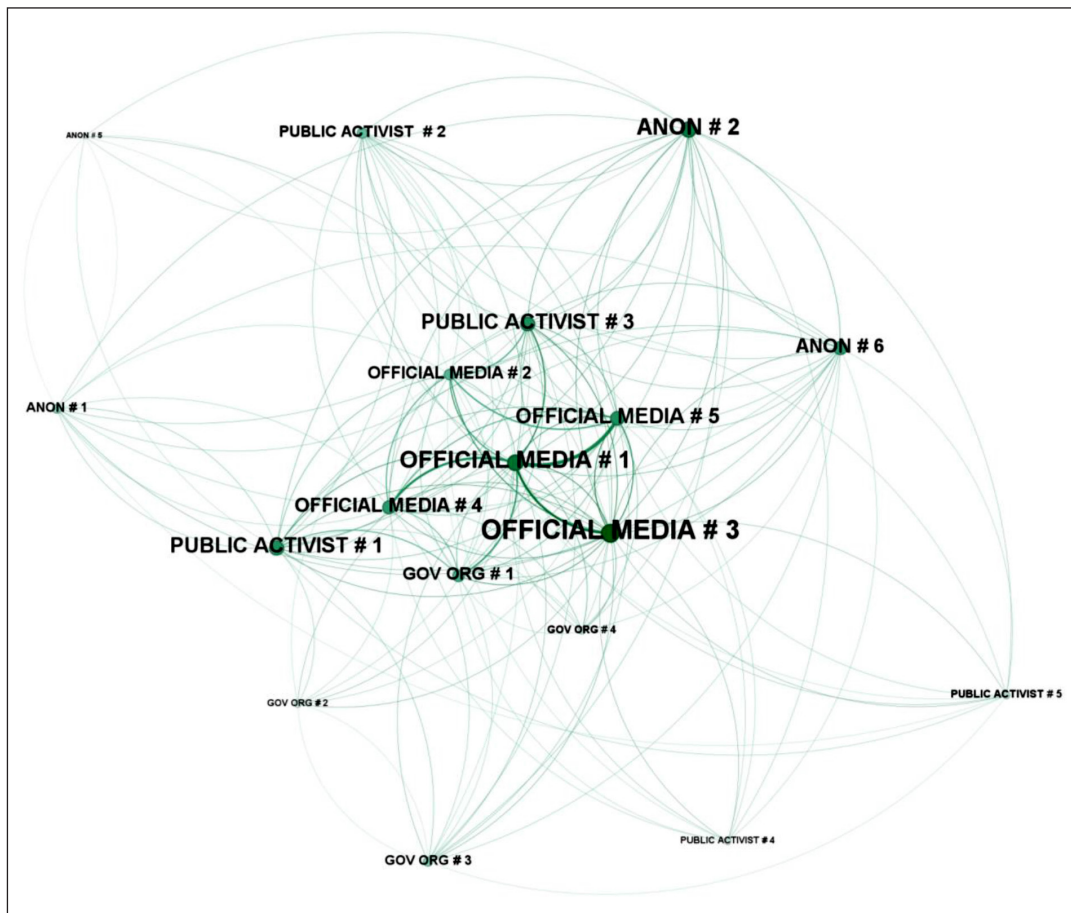

Figure 1 Co-citation network of pro-government Belarusian channels

The visualisation shows a network graph where the size of each node and the font size of the channel names indicate the centrality degree of the node. A gradient colour scheme is applied to the nodes, with dark green representing the most active channels and light green representing the least active channels. Three anonymous channels (ANON # 3, ANON # 4, ANON # 7) are missing from the graph due to lack of co-citation with other sampled channels. The central nodes of the graph are associated with official media channels. In contrast, the graph's periphery consists of nodes representing anonymous channels and channels related to less influential activists and law enforcement organisations (GOV ORG # 2, GOV ORG # 3).

To explore connectivity patterns among the citation network, we examined a mutual citation graph containing 18 out of 21 interconnected source nodes, with an average degree of 8.5 and a density of 0.5. These characteristics indicate that the selected source channels form a highly interconnected, dense network, uniting official pro-government channels with public activists and anonymous channels. The core of the citation network is formed by four official news media channels that serve as the primary source of information for the anonymous channels and government agency channels located on the periphery (Figure 1).

However, by expanding the initial graph of 21 selected channels with a broader set of citations and mentions, it is possible to see the implicit role of Russian media as the peripheral source of information dissemination (Figure 2). Based on the eigenvector centrality metric examination, the top ten most central channels include seven Belarusian channels and three directly related to major Russian media. Moreover, eight of the ten most-weighted edges have nodes representing links between Belarusian news media and the leading Russian state news media. This trend continues, including high-weighted connections with numerous unofficial, anonymous Russian channels promoting an overt pro-war agenda.

Altogether, it is possible to identify three network communities within which information spreads in the citation network. The *pro-Lukashenka community* shows a strong alignment with the Belarusian security forces and includes channels that engage in hate speech against the opposition. Notably, the central channels of this community also include those associated with Russian warfare correspondents, politicians, and Putin's administration. The *grassroots pro-Russian community* is characterised by its anonymous nature and support for Russian military efforts in Ukraine, with a significant presence of pro-war content. This community has few Belarusian channels and poor connections with official Belarusian media or departments. Finally, the *Belarusian state media community* presents a mix of Belarusian and Russian state media sources, indicating a collaborative attitude towards the relations between Russia and Belarus, with a more diversified approach in its citations and connections. This community is mainly formed by official agents associated with various pro-government organisations, civil initiatives, opinion leaders and politicians in Belarus and Russia.

Finally, according to the core-periphery structure, the core's most authoritative nodes primarily include channels associated with state-controlled Belarusian media, pro-Lukashenka public activists, and security organisations. The periphery, in contrast, consists of grassroots pro-Russian channels. These agents are likely not directly subordinate to the Lukashenka regime or its power departments, even though they express loyalty on a discursive level. Moreover, the periphery emerges as the most active pro-war and anti-Ukrainian pro-Russian content disseminator, though still maintaining citation autonomy even from Russian official media.
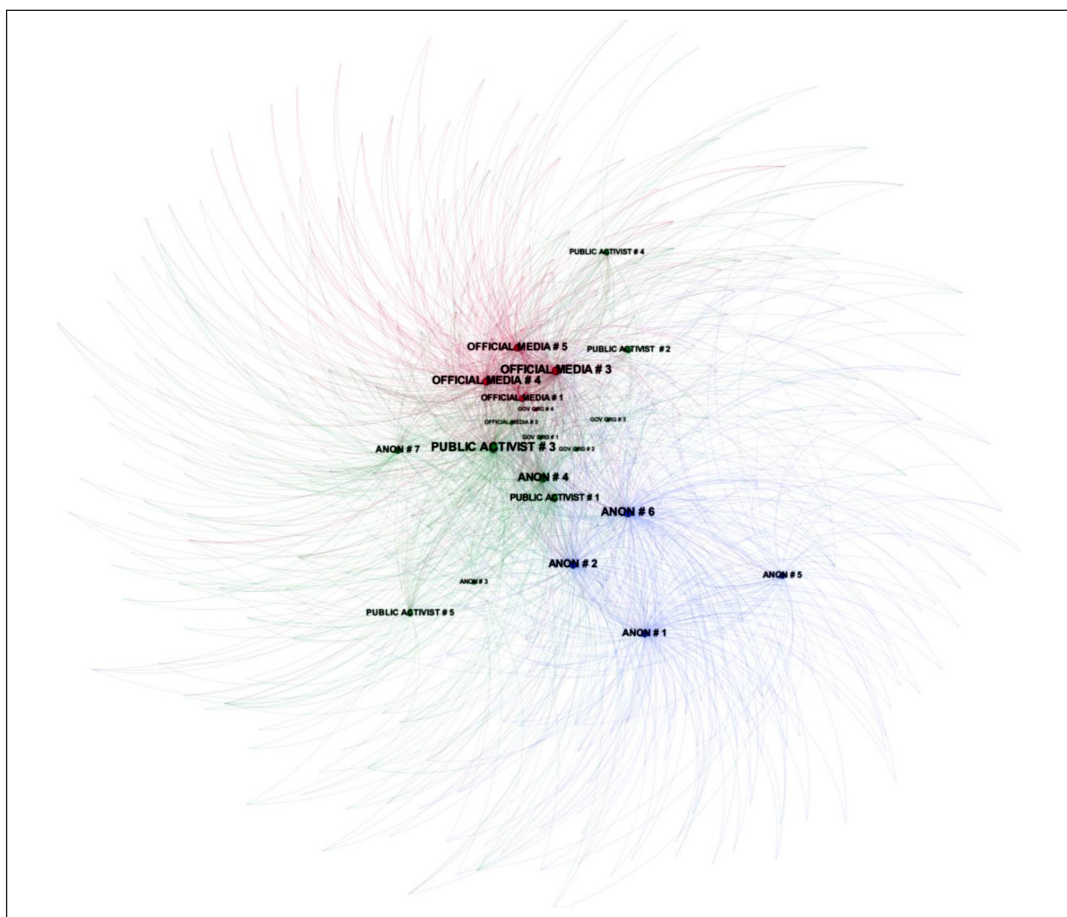
Figure 2 Network Communities in the Citation Network

This network graph shows the centrality and connectedness of different media channels, with the size of the nodes and font size indicating the harmonic closeness centrality of each channel. The largest nodes represent the most connected selected channels within each network community. The graph is colour-coded to identify three distinct communities:

Green, 40 percent of all channels: Belarusian pro-Lukashenka community, including government media, loyal activists and law enforcement agencies, which also have links to Russian political figures and media. Overall, the ratio of Belarusian to Russian channels is roughly equal, with a dominance in the core of the Belarusian security forces and public activists.

Blue, 35 percent of all channels: Grassroots pro-Russian community, claiming Belarusian affiliation but mostly citing Russian sources. Mostly anonymous, with frequent links to Russian military experts, war correspondents and media from the Donetsk and Luhansk People's Republics. The agenda of the quoted channels openly supports the war in Ukraine.

Red, 25 percent of all channels: Belarusian state media community, with a balanced mix of Belarusian and Russian state news media as cited sources. In general, the source base for the official pro-government Belarusian channels here is more diversified, representing official news media and channels associated with registered organisations and subordinate civil initiatives, opinion leaders and politicians in Belarus and Russia.

4.2 Peripheral integration of pro-war and anti-Ukrainian agendas within Belarusian pro-government channels

Inter-conceptual relations between pro-government channels

In this section, we will answer RQ2: what are the similarities and differences in the network's semantic patterns across the core, near-periphery, and far-periphery channels? Employing a bipartite graph analysis that links the Telegram channels to their dominant keywords, we first identify the most common shared concepts across the network. We then highlight the available network communities based on how channels use certain shared concepts. Finally, we examine keyword usage patterns at the core and periphery levels of the network. Thus, the main focus of this section is to trace the dissemination of pro-war and anti-Ukrainian concepts within the semantic field of pro-government Belarusian Telegram channels.

We argue that there is a group of semantically related Telegram channels within the structure of the Belarusian pro-government network, which is mainly focused on spreading anti-Ukrainian and pro-war concepts from the Russian media discourse. This is expressed in a dual-core structure in the semantic network of Lukashenka supporters, characterised by the tension between pro-Russian military and pro-Belarusian state-centred poles. However, deeper inter-conceptual relations and the diffusion of pro-war and anti-Ukrainian agendas into pro-government discourse can be seen not in the centre, where the official and state-centric ones balance pro-Russian/pro-war channels, but in the periphery, where the shared concepts denote relatively more isolated and aggressive ideas rather than common themes. Next, we examine this conclusion in more detail.

The previous community structure showed a transparent state-centric core and a pro-Russian grassroots periphery, considering only the observable social links between channels, such as citations and mentions. However, this structure becomes more diverse when focusing on the mutual use of terms, as shown in Figure 3. First, the core-periphery relationship is changing: due to the specific agenda and discursive isolation, channels of official state agencies, including those of police and military organisations, are shifting towards the far periphery. Secondly, as narratives related to the war in Ukraine spread rapidly after the invasion, pro-Russian grassroots channels, which were located on the periphery of *the social network*, moved towards the core of the *socio-semantic network*. In addition, two official media channels demonstrated intensive ties with the pro-Russian community due to their frequent use of war-related concepts predominantly framed by Russian media discourse.

These shifts suggest that the pro-Russian agenda is beginning to dominate within the network structure, leading to a fragmentation of the previously state-centric core, as shown in Figure 4. Specifically, the most extensive community, focused on pro-Russian warfare, focuses on keywords related to Ukraine, Russia, the US and warfare. Accompanying this central theme are significant peripheral concepts that resonate with more aggressive pro-war propaganda: 'Nazi', 'Banderovite', 'Biolab', 'militant', 'special military operation', 'Odesa' and 'Kherson'. This is followed by the pro-government community, with a prevalence of official media channels. This community is closely linked to pro-Lukashenka political and ideological terms at its core – 'Lukashenka', 'Belarus', 'citizen' – alongside

peripheral terms related to domestic political media keywords, such as 'COVID-19', 'economy', 'foreign ministry', 'constitution', 'minister' and 'chairman'. The law enforcement community focuses on operational and security-related terms, reflecting a strong interest in internal security and the societal impact of law enforcement. The community of public pro-Lukashenka activists uses more confrontational grassroots rhetoric in support of Lukashenka, framing his conflict with the West and suppression of the opposition in terms of 'world', 'side', 'political', 'West', 'state' and 'people', along with 'fighter' / 'zmagar'. Finally, the Belarusian military community focuses on national defence and army engagements, reflecting a devotion to national security and strategic military concerns.
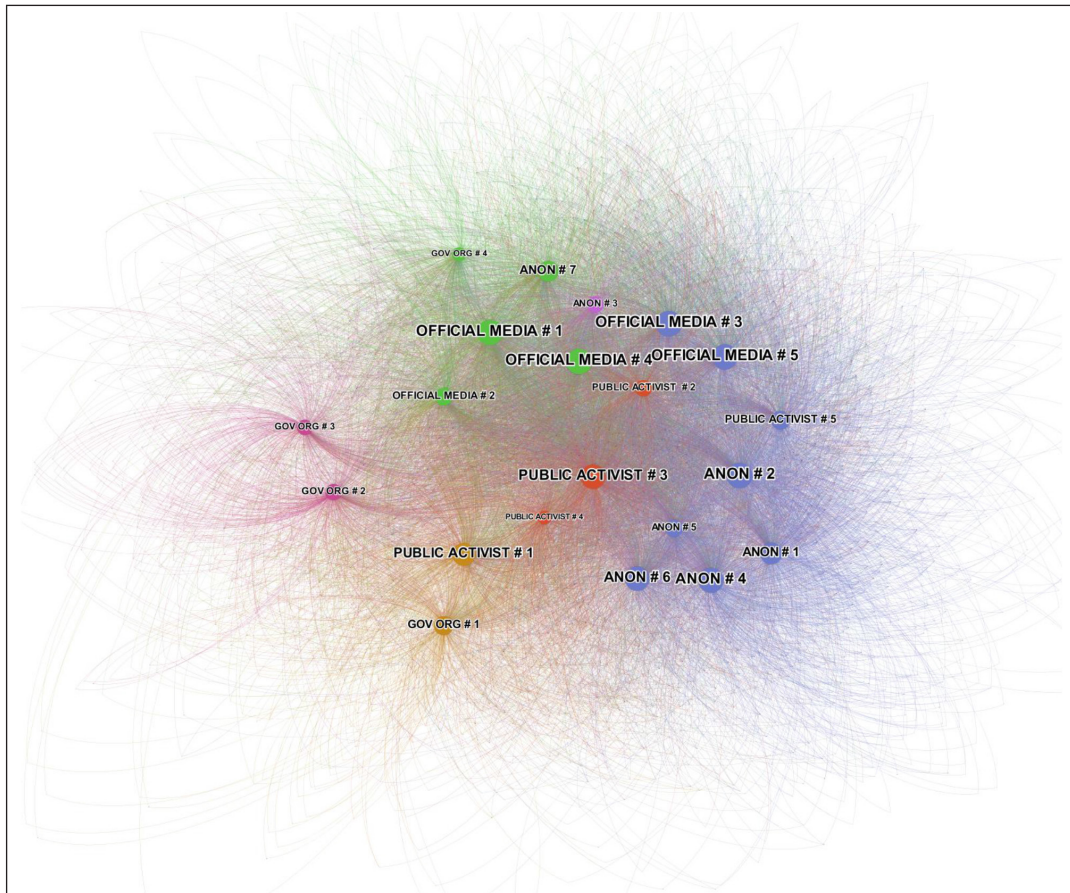

Figure 3 Channel-concept network communities in the bipartite semantic network

The graph represents different network communities in the socio-semantic network, linking Telegram channels with shared concepts:

– Blue (28.92%): the pro-Russian war community, centred on the 2022 Russian invasion with the prevalence of nodes with a strong pro-war focus.

– Green (20.98%): the pro-government community, with a focus on Belarus-centric and Lukashenka-aligned narratives, extending to domestic issues.

– Red (16.35%): Indicates the public pro-Lukashenka activists, characterised by assertive language against Western opposition and in support of the current regime.

– Purple (15.05%): the Law Enforcement Community focused on security and social order issues, emphasising internal stability and police operations.

– Yellow (10.84%): The Belarusian military community, with a focus on national defence and patriotic military discourse.

– Pink: A separated anonymous war-oriented channel (ANON # 3) that equally mixes pro-Russian and state-centric concepts, demonstrating a transitional position in the network.
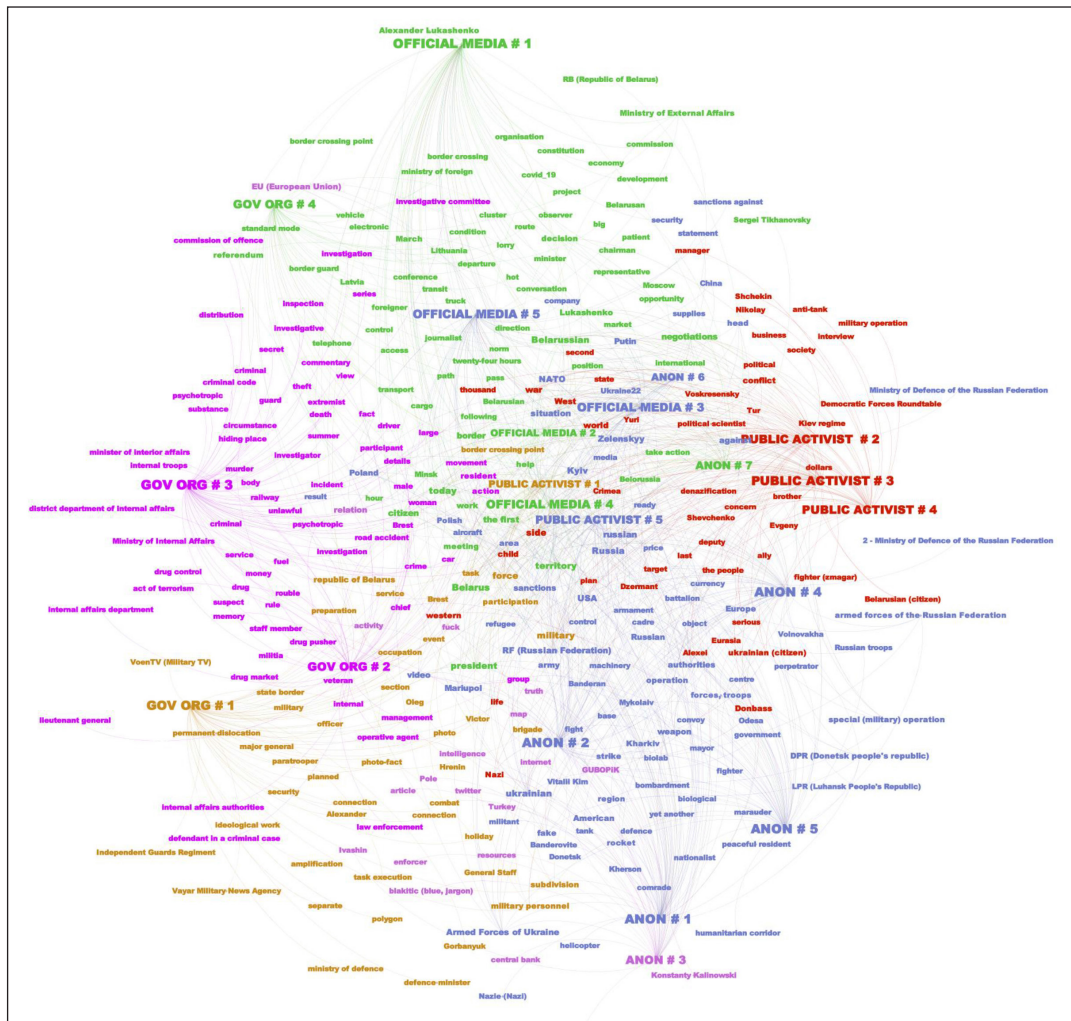

Figure 4 Channel-concept network communities in the bipartite semantic network
(PRUNED GRAPH VERSION)

This image represents a pruned graph version of different network communities in the socio-semantic network, linking Telegram channels with the most frequent shared concepts:

– Blue, the pro-Russian war community: Russia, Russian, Ukrainian, Kyiv, USA, Armed Forces of Ukraine, RF (Russian Federation), Zelenskyy, NATO, Putin, Mariupol, Kharkiv, sanctions, DPR (Donetsk people's republic), fake, army, armed forces of the Russian Federation, special (military) operation, LPR (Luhansk People's Republic), Nazie (Nazi), biolab, Ministry of Defence of the Russian Federation etc.

– Green, the pro-government community: Belarus, president, Belarussian, negotiations, Lukashenka, citizen, the First (Lukashenka), work, Ministry of External Affairs, referendum, Minsk, covid_19, RB (Republic of Belarus), constitution, (voting) observer, organisation, chairman, development, etc.

– Red, public pro-Lukashenka activists: world, West, Donbass, conflict, child, western, Ukrainian (citizen), Nazi, the people, state, life, political, Belarusian (citizen), political scientist, denazification, fighter (zmagar, jargon), Kyiv regime, etc.

– Purple, the Law Enforcement Community: criminal, (police) staff member, chief, action, road accident, investigation, militia, investigator, operative agent, psychotropic, drug, criminal code, crime, suspect, unlawful, drug control, murder, defendant in a criminal case, etc.

– Yellow, The Belarusian military community: military, force, Republic of Belarus, military personnel, subdivision, brigade, photo, Vayar Military News Agency, combat, task, Independent Guards Regiment, (military) service, VoenTV (Military TV), border crossing point, major general, General Staff, state border, ideological work, defence minister, officer, polygon, permanent dislocation, etc.

– Pink: A separate anonymous war-oriented channel (ANON # 3): GUBOPiK, O/in 'on Ukraine' vs 'in Ukraine', fuck, truth, activity, (Konstanty) Kalinowski, Turkey, internet, Twitter, blakitinyy (blue, jargon), Pole, Intelligence, etc.

The core-periphery structure of the network

As seen above, the use of concepts by different channels not only has a visible community structure, but also demonstrates the distance between the more homogeneous and semantically neutral core concepts and the more diverse (as well as aggressive) peripheral concepts. Furthermore, the network shows the existence of the dual-core structure, indicating a peculiar tension between the two separate discourses articulated by various Lukashenka supporters, as illustrated in Table 2. At the first pole, there is a semantic fusion between Lukashenka supporters and pro-Russian military narratives. In contrast to the first pole, which is aligned with Russia against the West, the second pole emphasises an independent Belarusian state with Lukashenka as its institutional foundation, focusing on domestic stability and governance. This discursive alliance becomes even more possible with the channels of public propagandists serving as the primary mediators between the internal pro-state Belarusian discourse and the external pro-Russian military discourse.

But even more connections between the pro-Russian and pro-Lukashenka channels are made on the periphery through various shared concepts that indicate more specific, diverse, and often aggressive ideas, themes and agendas. For example, one of the semantic alliances was built around the idea of fighting 'nationalists' in Ukraine and Belarus. Here, pro-Lukashenka and pro-Russian channels used two sets of concepts from the Russian 'special operations' vocabulary: official Russian military language ('Ukrainian nationalist', 'Ministry of Defence briefing', 'foreign mercenary', 'strategic' and 'missile strike') was combined with anti-Ukrainian propaganda terms such as 'Maidan', 'propaganda', 'Kyiv regime', 'denazification', 'Crimea', 'SBU (Security Service of Ukraine)' and 'victory'.

Table 2 Two poles of socio-semantic network discourse articulated
by Lukashenka supporters

Discursive affiliation	Shared concepts
pro-Russian / pro-Lukashenka core	'Putin', 'Russian', 'sanctions', 'negotiations', 'Moscow', 'war', 'West', 'conflict', 'Donbas', 'Ukrainian'.
Pro-government / pro-Lukashenka core	'Belarusians', 'state', 'president', 'civilian', 'work', 'action', 'protection', 'Belarusian', 'Belarus', and 'management'.

4.3 The relational model of Belarusian pro-government discourse

To answer RQ3, we created a relational discourse model grounded on a unipartite projection of a bipartite semantic network of inter-conceptual relations among different channels. This model represents the idea of semantic similarity between distinct concepts based on their co-occurrence across various channels. Notably, this model clarifies possible relational patterns of content creation and dissemination, rather than explicitly describing more complex pro-government discourse.

In this section, we conclude that the Belarusian pro-government Telegram network not only disseminates state-centred narratives but is also heavily influenced by pro-Russian media discourse at several levels. While there is a distinct space for domestic political discourse that is less influenced by Russian discourse, a strong emphasis on supporting Russia's military and foreign policy agendas remains dominant. However, while there is a clear tendency to import military and anti-Ukrainian narratives through anonymous channels and channels of public propagandists, there is also some selective engagement with pro-Russian content.

We seek to clarify these findings by exploring four network communities that represent separate but interconnected semantic fields indicative of the heterogeneous interplay of agendas, ideas, and concepts within the pro-government discourse landscape, contingent on the dissemination and sharing of these concepts across channels:

1. Pro-Russian Warfare field (30.87 percent of concepts): include 'Ukraine', 'Russia', 'USA', 'military', 'Kyiv', 'Zelenskyy', 'NATO', 'Donbas', 'fake', 'power', 'child', 'Mariupol', 'weapon', 'operation', 'Poland', 'district', 'AFU' (Armed Forces of Ukraine). This part of the semantic network remains the main source of anti-Ukrainian propaganda in Belarus and is used to represent Russia's supporters in this war. These concepts are mostly connected with pro-Russian anonymous channels in Belarus and with channels in Russia, which are used as a source of quotations for content creation.

2. Pro-Russian Foreign Policy field (28.7 percent of concepts): include 'Russia', 'territory', 'negotiations', 'RF' (Russian Federation), 'Putin', 'situation', 'decision', 'sanctions', 'EU', 'Europe', 'head', 'meeting', 'representative'. In this community, we can see the process of merging the Belarusian state discourse with the foreign policy agenda of the Kremlin, which is disseminated by some official Belarusian channels through quotations from Russian media. Thus, the semantics of Russian foreign policy completely replace the language of Belarusian international relations.

3. Belarusian Domestic Policy (28.1 percent of concepts): includes 'Belarus', 'force', 'today', 'citizen', 'first', 'Republic of Belarus', 'relationship', 'work', 'military serviceman', 'action', 'resident', 'connection', 'employee', 'Minsk', 'security'. The language used to describe internal politics is less affected by the pro-Russian agenda. It deals mainly with topics related to the activities of the government and other official organisations. This community is more connected to the official channels of the pro-government pole of the semantic core, which rarely use content from pro-Russian Telegram channels or address the topic of the war in Ukraine.

4. Pro-Lukashenka field (12.26 percent of concepts): key concepts include 'president', 'Belarusian', 'Lukashenka', 'side', 'war', 'peace', 'border', 'west', 'against', 'conflict', 'western', 'people', 'state', 'special operation', 'Belarusian', 'political'. Here we see a fusion of aggressive pro-Lukashenka rhetoric with pronounced anti-Western and pro-Russian agendas. The primary sources of these concepts are the channels connected with Lukashenka's press service, which show the position of Lukashenka himself: Belarus is drawn into the conflict and wants to preserve itself in the global war between the West and Russia but, at the same time, remains an ally of Russia.

Thus, we can identify an overall semantic pattern that emphasises a strong connection between Belarusian state discourse and the Russian media field, together with an attempt to maintain the visibility of the national narratives articulated by the pro-Lukashenka field. Observed fragmentation may point to the difficulty, or even impossibility, of keeping coherent narratives of national identity or state legitimacy separate from the overarching influence of Russian discourse in Belarus.

5 Discussion

The findings of this study highlight the ambivalent role of pro-government Telegram channels in Belarus in disseminating narratives supportive of both the Lukashenka regime and Russia's foreign policy, particularly during the 2022 invasion of Ukraine. By using a combined approach of network and semantic analysis, this research reveals an interplay between local Belarusian and external Russian media agents, highlighting how pro-Russian Telegram channels in Belarus serve not only as platforms for the dissemination of state-aligned messages, but also as active propagators of war-supporting statements.

Crucially, our analysis identifies a dual-core network structure within the discourse, highlighting a tension between pro-Russian military narratives and those emphasising Belarusian state interests. This structure reflects a more complex media landscape, where pro-government channels in Belarus offer a mixed agenda between national sovereignty discourse and alignment with Russian geopolitical influence. The significant peripheral presence of Russian channels promoting pro-war content further complicates this dynamic, reflecting a tendency to spread support for military action against Ukraine and shape public opinion in favour of the Russo-Belarusian alliance within the core of pro-government media discourse.

Separately, we would like to compare our proposed relational model of Belarusian pro-government discourse with the findings published in Petro Katerynych's recent paper "Propaganda at Play: A Thematic Analysis of Belarusian Media Narratives in the Context of the Russo-Ukrainian War" (Katerynych, 2023). The thematic analysis in that paper complements our relational model by thoroughly examining the content and themes within Belarusian state media, highlighting the explicit promotion of narratives that support Russian foreign policy, demonise Ukraine, and criticise Western intervention. Considering the findings of both papers, we argue that the accession of Belarusian media to Russian military narratives complements concerns about the autonomy of Belarusian public discourse and Russia's increasing influence on domestic and foreign policy decision-making. While such concerns have been raised repeatedly (Hansbury, 2023; Katerynych, 2023; Kotljarchuk & Zakharov, 2022), our study can serve as an empirical illustration of how the vast periphery of Russian Telegram channels influences Belarusian pro-government media discourse at a structural level.

However, despite the potential of the approach presented, we need to be aware of several methodological pitfalls. First, our time frame is limited to the first month of the war. It cannot reveal the long-term evolution of the semantic and social relations between the channels, as the discourse will likely change throughout the conflict. Second, the paper focused only on prominent and easily identifiable pro-government channels, possibly excluding less-visible channels or those blocked by Telegram. Thirdly, the methodological approach prioritised citation patterns within the social network, which inherently omits other possible channel relationships. In addition, the semantic network analysis only included significant noun phrases, thus simplifying the potential complexity of semantic relationships. Finally, the potential biases introduced by community detection on bipartite graphs or the transformation from a bipartite to a unipartite projection, which inevitably leads to a loss of information and simplifies the complex relationships between channels and concepts, must be acknowledged.

Future research should explore these narratives' impact on public opinion within Belarus and the wider region, examining how the dissemination of pro-government and pro-Russian content influences attitudes towards Ukraine, Russia, and Belarusian identity. An additional focus on the counter-narratives presented by opposition channels and their role in the information ecosystem could also provide valuable insights into the resilience of civil society discourse in Belarus.

6 Conclusion

The dominance in the academic literature of the image of monolithic and unified state propaganda in Belarus, formed by cooperation between official media or anonymous channels, has left the factor of local (and possibly independent of Minsk) pro-Russian agents in the shadows. These agents create narratives by rethinking the Kremlin's propaganda stamps and mixing them with Belarusian ideological and cultural resources. As a result of underestimating the various peripheral agents involved in information dissemination within the pro-government network in Belarus, hidden grassroots and anonymous

information sources remain to be explored. Given that many of these agents create unique ways of representing and disseminating group hatred and providing ideological support for the war in Ukraine, underestimating this factor poses a severe threat to regional security in Eastern Europe. This paper contributes to a more nuanced understanding of communication strategies in Eastern Europe by illustrating how the network of pro-government Telegram channels in Belarus does not operate as an isolated and monolithic state-controlled structure but as part of a broader, highly interconnected system of information dissemination between Russian and Belarusian media agents.

It is crucial to emphasise that pro-government Telegram channels in Belarus appeared as a complex social network of interconnected nodes, characterised by distinct citation patterns and a defined core-periphery structure. This network not only facilitates the dissemination of the pro-government agenda but also serves as a bridge between pro-Russian peripheral agents and supporters of the Lukashenka regime. At the level of mutual citations, we can observe a dense and cohesive network, mainly concentrated around official news media channels, which form the core and are linked to both pro-government public activists and anonymous channels. However, extending the citation network with a broader set of external citations shows that the periphery, characterised by grassroots pro-Russian channels and less connected to the official Belarusian media, plays a crucial role in spreading pro-war and anti-Ukrainian sentiments. Thus, besides the apparent use of Telegram channels by the Belarusian government and its allies to promote a unified pro-Lukashenka agenda, we can observe the significant peripheral influence of Russian Telegram channels within this network.

Expanding the explicit citation analysis with the implicit word usage patterns highlights the centrality of the Ukrainian conflict in the network's discourse. Moreover, there is varied evidence of the dissemination of explicit anti-Ukrainian hate propaganda on different levels of the network structure. The presence of discrete communities within the network, each with a specific thematic focus, adds complexity to the observed semantic landscape. In addition to semantically diverse groups, a dual-core structure alternates between pro-Russian military narratives and pro-Belarusian state-centric narratives. Although a core balance exists between state-centric channels and those aligned with the pro-Russian military agenda, a more dynamic interchange of concepts is observed in the periphery. The given activity suggests the possibility of disseminating pro-Russian military discourse within the Belarusian network, which is state-centric, through anonymous sources that are broader and independent of the government.

The study effectively uncovers the main consequences of such a structural integration with the plethora of peripheral pro-Russian channels by applying a relational discourse model based on a unipartite projection of a bipartite semantic network. In other words, the research reveals a critical dominance of pro-Russian media discourse in Belarusian pro-government channels, which is evident at multiple levels and across various semantic fields. While there is still an area for domestic political discourse that is less influenced by Russian narratives, the overall trend is towards spreading pro-war / anti-Ukrainian agendas and using Russian foreign policy terminology. The analysis of four semantic fields – Pro-Russian Warfare, Pro-Russian Foreign Policy, Belarusian Domestic Policy, and Pro-Lukashenka – indicates that almost 60 percent of the meaningful shared concepts belong to the Russian political discourse.

The idea of monolithic, centralised, Kremlin- or Minsk-supervised propaganda in Belarus is somewhat misleading. Although there is an anti-Western consensus among both public supporters of the regime and anonymous Telegram channels, this rhetoric is mixed with both pro-Russian and anti-Ukrainian agendas to varying degrees. Official state media are less likely to express explicitly anti-Ukrainian views, while anonymous Telegram channels are much more active in spreading group hatred. After the beginning of the Russian invasion, hostility towards Ukraine and an openly pro-Kremlin position remain markers that allow for an at least analytical distinction between grassroots pro-Russian, Belarusian pro-government, and Kremlin-supported discourse. In the case of Belarus, the primary sources of the creation and dissemination of group hatred towards Ukrainians are grassroots, anonymous, and public pro-government activists who are strongly connected to the pro-Russian channels.

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