Emotional Impact of Pro-Russian Disinformation in the Czech Information Space: Analysis of Sentiments, Narratives and Manipulative Strategies (2016–2023)[1]

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Abstract

The RF's disinformation campaigns targeting the Czech information space demonstrate a systematic use of emotional manipulation to destabilize public opinion and undermine democratic institutions. These campaigns are characterized by a deliberate interplay of fear, anger, and trust to amplify their manipulative impact. The study aims to analyse the emotional strategies and dominant sentiments in pro-Russian disinformation narratives and to uncover their role in framing public perception. The findings reveal that the RF's disinformation employs contrasting sentiments – negative (fear, anger) and positive (trust, hope) – to enhance credibility and emotional resonance; such dominant topics as internal politics, external threats, and economic crises are strategically utilized to align with the Czech socio-political context; the dynamics of sentiments over time indicate a shift from overtly negative narratives to more subtle and complex strategies aimed at increasing public trust in disinformation sources. The analysis highlights the dual function of emotional narratives in pro-Russian disinformation: creating societal tension while fostering selective trust to manipulate public opinion effectively. The empirical data are taken from the EUvsDisinfo database.

Keywords: disinformation; abstracts; sentiment analysis; emotional manipulation; narrative; Czech Republic; pro-Russian disinformation; public opinion

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1. Introduction

We perceive reality not only cognitively but also emotionally, as emotions shape our attitudes, interpretations of events, and perceptions of people and circumstances. Defined as internal responses to environmental stimuli (Panger, 2017), emotions also involve coordinated psychological, physiological, and behavioural reactions (Ekman, 1992, 1999). Neuroscience identifies six basic, universal emotions: fear, anger, disgust, sadness, happiness, and surprise (Ekman, 1992).

Emotions lay the grounds for the narrative construction of reality to employ history to explain contemporary problems and to learn lessons from the past; to perform causal analyses based on perceptions, values and moral principles; and to search for symbolic and performative solutions, instead of sustainable agreements or alliances (Price, 2015, p. 8). Emotions construct the friends and enemies of an undefined collective (a nation, people, front or vanguard) which enable it to single out adversaries (Gerbaudo, 2018).

Disinformation exploits this emotional dimension by disseminating misleading or false content to confuse public opinion and erode trust in institutions, experts, and the media. It favours emotional appeals (e.g., 'us', 'the nation') over rational argumentation, constructing a 'truth' rooted in feelings and moral interpretations (Arias-Maldonado, 2020). This emotional framing undermines expertise and factual accuracy, introducing cognitive biases (Manfredi, et al., 2022). In wartime, such manipulation is particularly dangerous, as it fosters fear and instability, making the previously unthinkable acceptable.

Russia has long constructed an alternative reality for domestic and foreign audiences, relying on belief in its narratives as a survival strategy (Zafesova, 2021). Unlike fact-based information operations, Russian disinformation often fabricates 'facts' to serve strategic goals (Allen & Moore, 2018). Its messaging varies in content, intensity, and emotional tone depending on the target audience, ranging from domestic populations to Ukraine, the EU, NATO, and the Global South.

In response, the European External Action Service launched EUvsDisinfo in 2015 to counteract Russian disinformation targeting the EU and its neighbours (EUvsDisinfo, 2024).

The analysis of scholarly works reveals three key gaps in existing research on this topic. First and foremost, there is a lack of methodical and structural examination of the emotional components in disinformation messages. Liu et al. (2024) claim that although some of the studies mention emotion information among other text-based features, they do not specifically focus on the importance of emotion for misinformation detection. Moreover, there is a gap in the study of temporal changes in the emotional structure of disinformation materials. Most previous works have focused primarily on static forms of analysis, although the emotional structure of disinformation materials may exhibit temporal shifts that

correlate with the evolution of topics and semantic motifs. With the exception of a few (not many) studies, for instance, Kamila et al. (2022) and Plepi et al. (2022), this aspect remains underexplored. Finally, the regional peculiarities of disinformation dissemination in the context of the heterogeneous political past of post-communist states have received insufficient scholarly attention.

This study intends to address the aforementioned shortcomings by offering a comprehensive examination of the emotional structure of pro-Russian[1] disinformation narratives in the Czech Republic during the period from 2016 to 2023. Hence, the article aims to identify emotional strategies in pro-Russian disinformation within the Czech information space using sentiment analysis. We hypothesize that such disinformation predominantly employs negative emotions to heighten societal anxiety and polarization. The interplay of negative and positive emotions likely enhances manipulative impact by aligning narratives with Czech socio-political contexts.

The dependent variable involves the emotional impact of disinformation on public opinion. Independent variables include emotional content (e.g., fear, anger, trust), narrative topics (e.g., domestic politics, external threats), manipulative techniques (e.g., framing, emotional contrast).

Using the EUvsDisinfo database (2016–2023), we apply sentiment analysis to trace patterns of emotional manipulation and shifts in disinformation dynamics in Czechia.[2] The research questions are as follows:

1. What emotional strategies dominate pro-Russian disinformation in Czechia?
2. How are sentiments (positive, negative, neutral) distributed, and which prevail?
3. Which emotions (e.g., fear, anger, hope) are most frequent, and how do they frame audience perception?
4. Do emotional tones vary by topic (e.g., politics, economy, social issues)?

The paper is structured as follows: Section 1 introduces the research; Section 2 explores Russian disinformation; Section 3 outlines the theoretical framework; Section 4 details the methodology; Section 5 presents findings; Section 6 offers concluding remarks.

2. The RF's disinformation

Shultz and Godson (1984, p. 41) defined disinformation as 'false, incomplete or misleading information that is passed, fed, or confirmed to a targeted individual, group, or country'. In 2018, the European Commission (European Commission, 2018, pp. 3–4) defined it as, 'verifiably false or misleading information created, presented and disseminated for economic gain or to intentionally deceive the public and may cause public harm'. Chatterjee & Krekó (2020) claim that disin-

formation is neither based on ideologies nor facts. What makes it powerful is the mingling of fact with fiction (lies, basically an untruth spoken as if it were truth). Disinformation, originating from official or unofficial agents, is basically false or misleading information that is intentionally disseminated and can cause chaos, confusion, public harm, as well as serious societal problems (Iosfidis, 2024). This emotional manipulation is particularly effective because it combines truth and lies in a way that evokes strong emotional reactions such as fear, anger, or hope, making the audience more receptive to the desired narrative.

Manfredi et al. (2022) claim that disinformation is not an isolated action, but a state policy, for it serves the following purposes: a) to give journalists professional credentials, even though they do not comply with the ethical standards of the profession and serve other purposes; b) to represent leaders and authorised people; c) to gather, produce and disseminate news, ideas, audio-visual or entertainment content by licit means for its cultural and news offerings, regardless of work quality or compliance with ethical standards; and d) to identify actors supporting the theses of disinformation (Manfredi, Amado & Gómez-Iniesta, 2022, p. 215).

Disinformation creates a combination of positive and negative emotions to influence the audience. This confirms the main argument of the study that pro-Russian disinformation systematically uses emotional strategies to manipulate public opinion, constructing narratives tailored to evoke certain emotional reactions and reinforce prejudices (among the Czech audience). This allows for the manipulation of the information perception and the formation of emotional reactions desired by the agent of influence. In particular,

1) the use of negative emotions (fear, hatred or anxiety) is often the basis of disinformation campaigns. They can create panic, e.g., messages about threats or dangers can cause people to act impulsively and demonize opponents, or the use of negative stereotypes or offensive characteristics can create hostility towards certain groups or individuals;
2) the use of positive emotions (hope or pride) can also be part of disinformation messages. They can inspire trust, e.g., creating the illusion of authenticity and truthfulness which makes disinformation more acceptable to the audience. Or they can encourage action, e.g., positive emotions can motivate people to support certain ideas or actions even based on false information;
3) the combination of positive and negative emotions creates complex emotional responses. This can include contrasting messages that evoke positive emotions and then move to negative ones which can shock and make the audience pay attention to certain aspects; mixing truth with lies, i.e., combining partially true information with manipulations, can increase the credibility of disinformation, as the audience may perceive it as more trustworthy (Romanenko, Bondar & Dukach, 2021).

However, no matter what emotions the disinformation appeals to, it always has a malicious intention. When it is guided by the state, it is strategically planned, rather than reactive, spontaneous, or amateurish; it is based on big resources, technology, personnel, and expertise; and it is hard to identify because it is closer to half-truths and disseminated by powerful and resourceful agents (Iosfidis, 2024). Disinformation follows state logic when it defends a political proposal, a form of social coexistence, a position in international relations or the recognition of authority, which includes political leadership and territorial sovereignty (Manfredi, Amado & Gómez-Iniesta, 2022, p. 215).

In this article, we claim that disinformation is thus not a spontaneous act but a calculated tool of influence, designed to manipulate public perception, destabilize societies, and advance strategic interests by intentionally misleading information. Therewith, manipulation is considered not only as a tool for deliberate distortion of information, but also as a strategy of emotional influence aimed at forming certain cognitive reactions in the recipient. In addition, emotions act not as a side effect of disinformation, but as its key mechanism, ensuring the effectiveness of the manipulative message. This approach allows us to analyse disinformation as a complex communicative phenomenon, in which the emotional component is no less important than the factual inaccuracy or distortion of the content.

For a couple of decades, the Russian leader has been employing digital disinformation tactics to disrupt liberal democracies of the Western world. It has been done due to the activity of the Russian troll factory – the Internet Research Agency, and a major disinformation hub – the General Staff Main Intelligence Directorate (GRU). In Europe, Russia's objectives include destabilising the region, preserving close ties with the Balkan States, and impeding Ukrainian and EU relations (Iosfidis, 2024, p. 31).

Russia's disinformation strategy operates on a trial-and-error basis and is carefully crafted for each country or group, focusing on narratives and bad news that work best in a given environment. This approach allows pro-Russian disinformation to identify and exploit the emotional vulnerabilities of specific audiences, undermine trust in democratic institutions and create a polarized social landscape. The main goal is to discredit politicians, experts, institutions and media of the target countries, to create a one-sided pro-Russian reality (Meister, 2018, p. 9–10). Such influence is provided by *RT, Sputnik, Ruptly, TASS* and other media. With the beginning of the RF's full-scale war against Ukraine, the EU immediately restricted the broadcasting of *RT, Sputnik, Ruptly*. Nevertheless, in 2024, their websites are accessible in a handful of languages (Tuhina, 2024). In the 21st century, social media and messaging apps become the main source of news (Kalathil et al., 2020), so the RF adapts these means for disinformation purposes due to their affordances, such as information abundance, anonymity, datafication, micro-targeting, or source impersonation (Echeverría, Santamaría & Hallin, 2024, p. 5).

In other words, Russia develops and conducts state-sponsored disinformation, i.e., 'the systematic and coordinated effort by state actors and elite collaborators to intentionally spread false or misleading information on a large scale' (Echeverría et al., 2024, p.3). The ultimate goal of state-sponsored disinformation is to gain political and economic dominance by controlling public discourse and opinions (Echeverría, et al., 2024, p. 3).

Herewith, we should emphasize (Table 1) the distinction between the Russian state-sponsored disinformation and pro-Russian disinformation:

Table 1:
Russian state-sponsored disinformation VS pro-Russian disinformation

Criterion	Russian state-sponsored disinformation	pro-Russian disinformation
Origin	Directly created, coordinated, or funded by official Russian state structures (e.g. Kremlin, Ministry of Defence, Ministry of Foreign Affairs, GRU, RT, Sputnik, or affiliated agencies).	Not necessarily state-produced; can originate from independent actors (media, influencers, political groups, or foreign sympathizers) who support Russia's narratives.
Control	Centralized, i.e., guided by state strategies, with specific goals tied to Russia's foreign or domestic policy objectives.	Decentralized, i.e., actors may adopt and spread similar narratives voluntarily or opportunistically, without direct coordination.
Intention	To serve official strategic interests: destabilize opponents, justify policies, influence elections, etc.	May be driven by ideology, shared worldview, anti-Western sentiment, or financial/political gain rather than direct Kremlin orders.
Narratives	Consistent with Kremlin talking points; often tightly framed, repetitive, and strategically timed.	Overlaps with Kremlin narratives, but may include localized framing, hybrid interpretations, or emotional appeals shaped by local contexts.
Legitimacy claim	Poses as journalism or information operations.	Poses as independent commentary or activism.

Source: developed by the authors based on Smoleňová (2020); Meister (2018); Iosifidis (2024); Echeverría, García Santamaría, Hallin (2024); Arias-Maldonado (2020); Allen, Moore (2018).

Despite these differences, both forms reinforce Kremlin narratives either directly or indirectly by manipulating emotional responses and undermining trust in democratic institutions. Understanding this dual structure is essential for developing effective counter-disinformation strategies.

In Europe, Russia approaches the manipulation of media and information on a country-by-country basis, creating separate strategies for different regions and countries, while taking advantage of local problems and weaknesses. In the

Czech context, this involves an emphasis on emotionally charged narratives that highlight fear of external threats, such as EU over-enlargement, and anger towards Western-oriented politicians, while portraying Russia as a reliable and stabilizing force. In the Czech Republic, pro-Russian disinformation campaigns originate from multiple sources. The pro-Kremlin messages are amplified through extensive social media activity, and the organization of public events and gatherings. Smoleňová (2020) claims that their goal is to shift public opinion against democratic institutions and depict a world in which the United States intends to exert global leadership, every Western-leaning politician is corrupt, media outlets are biased, and the future is bleak, hopeless and full of conflict. In this world, Russia emerges as both the saviour and moral authority, the guarantor of political stability and peace.

Since the RF's full-scale war against Ukraine, the Czech Republic has fully supported Ukraine's right to self-defence and the restoration of its territorial integrity within its 1991 borders, including the Crimean Peninsula. In 2024, in its Statement on the ongoing Russian aggression against Ukraine, the Ministry of Foreign Affairs of Czechia claimed that 'Russia's attempts to change state borders by force, to weaken the West by spreading disinformation and mistrust in society, and to provoke hostility towards the West in third countries must be repelled in the interests of all democratic and free countries'. (Ministry of Foreign Affairs of the Czech Republic, 2024).

Besides, for the past years, Czechia has made several steps prompt to 'infuriate' the RF:

- 2016 - the government established the Czech Cyber and Information Security Agency to combat cyber threats, including disinformation from Russia (National Cyber and Information Security Agency, 2024).
- 2018 - the Czech Republic expelled two Russian diplomats in solidarity with the UK over the poisoning of Sergei Skripal in Salisbury (Borger, Wintour & Stewart, 2018).
- 2020 - the Czech Republic faced a surge in disinformation related to COVID-19, with Russian sources promoting conspiracy theories about the virus's origin and the effectiveness of vaccines (Schwartz, 2020); the Czech Republic expelled two Russian diplomats in retaliation for the expulsion of two Czech diplomats from Russia (BBC News, 2021).
- 2021 - the Czech Republic designated Russia as an 'unfriendly state' and expelled 18 Russian diplomats over the 2014 Vrbětice ammunition depot explosions (The Moscow Times, 2021).
- 2022 - in response to the Russian invasion of Ukraine, the Czech Republic increased military support for Ukraine, prompting a wave of Russian disinformation that labelled Czech leaders as warmongers (Cabinet of Ministers of Ukraine, 2022); the Czech Republic expelled 70 Russian diplomats and staff in response to Russia's invasion of Ukraine and announced plans to send military aid to Ukraine (Novinite.com, 2022).

- 2023 - the Czech Republic continued to support Ukraine militarily and diplomatically (Verkhovna Rada of Ukraine, 2023), angering Russia.
- 2024 - the Czech government issued warnings about Russian attempts to influence the upcoming elections through disinformation, particularly targeting issues like immigration and EU humanitarian aid, drawing further ire from Russia (Bienvenu, Jacquéand & Stroobants, 2024).

Inevitably, such a stance of the Czech Republic irritates Russia and invigorates its disinformation campaigns against Czechia. Therefore, it is quite expected that Russian disinformation narratives in the Czech Republic use emotional appeals to increase distrust in Western institutions, while simultaneously creating a sense of hope and pride in Russia's role as 'a moral authority' and 'saviour'.

3. Theoretical frame of the research

Several theories lay the grounds for our research to describe the emotional impact of disinformation on audiences. This theoretical framework supports the key argument that the RF's disinformation campaigns in the Czech Republic systematically exploit such emotional triggers as fear, anger, and hope to manipulate public opinion and reinforce prejudice.

We can divide these theories into two groups: 1) those that describe the formation of public opinion under the influence of disinformation, 2) those that describe the formation of public emotions regarding the assessment of reality.

Consequently, the first group includes:

- political propaganda theory by H. Lasswell (1927) which indicates how public opinion can be influenced and perceptions of reality manipulated through false or distorted messages. In the Czech context, it helps dissect how Russian disinformation campaigns are constructed and why they are effective;

framing theory (Goffman, 1974) which defines a certain 'frame of interpretation' that enables people to find, perceive, identify and label life experiences. Framing news events and phenomena allows for a controlled emphasis on or rejection of certain aspects of reality. The 'correct' frame sets the context for the news, evoking a sense of threat or, conversely, trust. This directly supports the research focus on how pro-Russian disinformation strategically shapes narratives to arouse fear and distrust while simultaneously positioning Russia as a reliable and stabilizing force, especially in the Czech Republic.

The second group involves:

- affective intelligence theory (Marcus et al., 2019) which explores the role of emotions in political behaviour and explains how emotions become drivers of political behaviour, especially during crises situations or conflicts; the role of fear in stimulating increased attention to disinformation; the im-

portance of trust as a factor determining the extent to which an audience is inclined to accept information as true. In other words, fear stimulates attention to information, including disinformation, while trust determines the extent to which an audience will be willing to accept this information as true. These emotional dynamics may help explain how disinformation influences political attitudes in Czechia;

- dual-process theories (of emotions) (Barrouillet, 2011) which argue that emotional responses to messages go through two phases: 1) an immediate (impulsive) response that may be triggered by negative emotions (e.g., fear or anger), and 2) a more deliberate response which may involve positive emotions (e.g., hope or trust). In disinformation, it can be used to scare the audience or arouse anxiety, and then to offer a solution or alternative that evokes feelings of hope or trust in the source. The theories help us explain the strategy of pro-Russian disinformation in Czechia where fear-based narratives are often combined with messages of hope or trust in Russia's proposed solutions.

Thus, disinformation deliberately creates emotional contrast when the sequential combination of negative and positive emotions makes the message more memorable and emotionally rich. According to the afore theories, disinformation does not only provoke emotional reactions, rather it uses them to manipulate the perception of reality. Negative emotions (fear or anger) remain in the memory longer and reinforce false beliefs. Positive emotions (hope or trust) create contrast which increases the memorability and persuasiveness of disinformation. These dynamics make disinformation particularly effective in influencing the audience.

The mentioned theories are especially useful for sentiment analysis in disinformation messages because they 1) provide a sound explanation of the disinformation emotional impact and provide a theoretical basis for sentiment analysis, 2) help understand how emotionally coloured narratives are created through manipulation, 3) allow us to better identify emotional triggers in disinformation and more effectively analyse their impact on the audience, and 4) provide a deeper understanding of the emotional mechanisms of disinformation and thus strengthen the scientific weight of the study. Taken together, these theories may justify the research assumption: pro-Russian disinformation campaigns in the Czech Republic rely on the strategic use of emotional manipulation – a combination of fear, anger, and hope – to influence public opinion, destabilize trust, and promote pro-Russian narratives.

4. Research methodology

4.1. Sentiment analysis procedure

Emotions and feelings are the core of disinformation. Emotions may be analysed using sentiment analysis which is an approach to natural language processing that identifies the emotional tone behind a body of text. It is an important tool for revealing emotional strategies and assessing their impact on the Czech infospace. Sentiment analysis involves the use of data mining, machine learning, artificial intelligence and computational linguistics to mine text for sentiment and subjective information, e.g., whether it expresses positive, negative or neutral feelings (Gillis & Barney, 2024). This approach is used to analyse various parts of text, such as a full document or a paragraph, sentence or subsentence. 'Sentiment analysis' purpose is to determine the attitude of a speaker, writer, or other subjects concerning the overall contextual emotional reaction to a document or event' (Almohaimeed, 2017, p. 17).

In English, the words 'emotion' and 'sentiment' are often used interchangeably but refer to different concepts. Understanding the difference between emotions and feelings is crucial to this study, as it focuses on how specific emotions (e.g., fear, anger or hope) are embedded in disinformation to elicit a targeted emotional response which is consistent with the study's focus on the emotional dynamics of pro-Russian disinformation in Czechia.

'Emotions' are the biologically rooted, instinctive reactions of our bodies to environmental stimuli (Damasio, 2004). There is no universally agreed list of basic emotions, however, a common model includes six: anger (or rage), joy, disgust (or revulsion), fear, sadness, and surprise. In the case of the automated system, 'anticipation' and 'trust' are also options for analysis (Isasi, 2024). 'Sentiment' is both the action of and effect of feeling an emotion. Within the context of sentiment analysis, sentiment may be explained as any feeling, emotion, attitude, or opinion (Hyvärinen & Beck, 2018). 'When an object, a person, a situation, or a thought brings us joy, it begins a process that can lead to the feeling of being joyful or happy' (Zazo, 2015). Sentiment analysis suggests that you can measure the intensity of this effect (either positive, negative, or neutral) on the manifestation of an emotion.

Hence, sentiment analysis is a process of extracting opinions that have different polarities, i.e., positive or negative. It is also known as opinion mining and polarity detection. With the help of sentiment analysis, we can find out the nature of opinions reflected in documents, websites, social media feeds, etc. Due to this analysis, the data are classified into different classes. These classes can be binary (positive or negative) or, they can have multiple classes (happy, sad, angry, etc.). Sentiment analysis can be useful to quickly summarize some qualities of text, especially if we have so much text that a human reader cannot analyse all of it (Shara, 2021).

There are two main methodological approaches to sentiment analysis: 1) lexicon-based method – to designate a sentiment score, it utilizes a dictionary of words and their sentiment values (positive–negative–neutral) (Esuli & Sebastiani, 2007); 2) sentiment classification using machine learning techniques. This method classifies documents into sentiment categories based on training data (Pang et al., 2002). The lexicological approach chosen for this study corresponds to the goal of identifying emotional patterns in disinformation narratives, in particular analysing how positive and negative emotions interact to enhance the manipulative impact of pro-Russian disinformation aimed at the Czech audience.

We use the lexicon-based method known as an unsupervised learning method. The lexicon method does not require any training data and only depends on the dictionary. This approach is calculated based on the occurrences of the terms in the text data with other positive or negative words in the predeveloped polarity lexicons (Zulfadzli & Haliyana, 2019). In this research, we applied the NRC Word-Emotion Association Lexicon (NRC, 2023) – a dictionary widely used in sentiment and emotion analysis. It can currently be used even with non-English texts. The use of the NRC Word-Emotion Association Lexicon directly supports the research's focus on mapping the prevalence and interaction of emotions such as fear, anger, trust, and hope in disinformation narratives. This approach allows for a deeper understanding of the emotional mechanisms underlying the manipulative strategies of pro-Russian disinformation. Mohammad and Turney (2013) developed this lexicon which includes positive and negative sentiment values as well as eight emotional categories. The dataset that forms the lexicon has been manually annotated using the Maximum Difference Scaling technique, or MaxDiff, to determine the most negative or positive sets of words relative to other words – a sort of ranking of sentiment intensity of words. This particular lexicon has 14,182 unigrams (words) classified as either positive or negative. It also classifies a word's connection to various emotions: anger, anticipation, disgust, fear, joy, sadness, surprise, and trust. Using automatic translation which may lack linguistic nuance in unpredictable ways, it is available in more than one hundred languages (Isasi, 2024).

4.2. Sentiment network analysis

The research of the relations between words and documents is a powerful tool of sentiment analysis which helps create and study a text network based on the concept of graphs. A network is a structure of nodes (system elements) and links (interactions between nodes). In a text network, words, phrases, or documents are nodes, and the co-occurrence of words or their semantic similarity is links.

In this research, we applied Two-Mode Networks (Bail, 2016; Rule, Cointet & Bearman, 2015) – a type of graphical structure that contains two different types

of nodes and the connections between them. For example, in the context of our text analysis, sentiment words are the nodes of the first type, and the documents in which these words occur are the nodes of the second type. The connections between nodes indicate the interactions between categories, i.e., which words occur in which documents. Such networks enable us to analyse complex interdependencies, particularly, to study how narratives or elements of information spread across texts, authors, or platforms. In our study, we built and analysed two versions of two-mode networks: 'sentiment words' and 'emotion words'.

The two-mode networks peculiarity is that they can be transformed into single-mode networks to apply such standard analysis methods as clustering or determining word centrality. For example, word-document relations can be transformed into word-word relations, determining the co-occurrence of words within a single document. Such networks are widely used for text analysis, enabling identification of key topics, structures and relations between different elements which contributes to the understanding of manipulation strategies in the information space.

To analyse text networks, we have applied three key metrics and corresponding analysis methods to identify structures and interactions in the data: 1) Modularity and Modularity Class definition; 2) Closeness Centrality; 3) Betweenness Centrality.

Modularity Class (Newman, 2006) means classes or groups of nodes in a network that have a high density of internal connections and weak external connections to other groups. Clustering based on modularity allows us to identify thematically or functionally related elements in a network, e.g., groups of words that often occur together in texts. Modularity shows the quality of the network's division into classes: the higher the modularity, the more clearly the nodes are grouped within clusters, creating distinct groups or topics in the text network.

To determine the Modularity Class, the Louvain method (Blondel et al., 2008) was used which is an efficient algorithm that works on the principle of modularity optimization. The algorithm consists of two main steps: 1) each node is considered a separate cluster, and then nodes are moved between groups to maximize modularity; 2) nodes within one cluster are aggregated into super-nodes, and the process is repeated until the highest level of modularity is achieved. This method allows for automatic detection of the number of clusters and provides high analysis speed even for large networks which makes it popular in research on text data and information flows.

In this research, modularity classes are used to identify and analyse thematic groups (clusters) of words or phrases in text networks that form the basis of disinformation messages. These clusters help understand how text elements are interconnected, revealing key topics that are the basis of manipulative content. Modularity classes also let us assess the strategic distribution of information in texts. For instance, through modularity class analysis, we can determine how emo-

tionally charged words (fear, anger, trust) are integrated into different clusters to create a targeted manipulative effect. This helps us understand which aspects of the narrative are most influential and how they contribute to the formation of the desired perception by the audience.

Closeness Centrality (Rubio, 2023) measures how 'close' a node in a network is to other nodes, i.e., it determines its average distance to the rest of the elements. High closeness centrality indicates that the node has quick access to the entire network, playing a key role in the dissemination of information. In the context of text network analysis, nodes with high closeness centrality can include words or phrases that are often associated with many other words, ensuring the rapid dissemination of certain content or ideas through the text. For instance, the word 'impact' can have high closeness because it is used in different contexts, such as 'impact of sanctions' or 'impact on the economy'.

Betweenness Centrality (Bail, 2016; Rubio, 2022) determines how often a node lies on the shortest paths between other nodes, acting as a 'bridge' between different parts of the network. This metric shows which nodes are strategically important for connecting single clusters or topics. In text analysis, nodes with high betweenness centrality can be words that unite different narratives or topics. For instance, the word 'choice' can combine the topics of 'crisis' and 'alternatives', acting as an important element of manipulative content. Using these metrics helps identify key concepts in texts, understand their role in the formation of narratives and evaluate strategic approaches to information influence.

4.3. Research empirical data

For our analysis, we used the EUvsDisinfo disinformation database for 2016–2023. The data were collected on January 24, 2024. At that time, the dataset consisted of 15,978 messages. The EUvsDisinfo project continuously updates its database and methodology in the context of combating pro-Kremlin disinformation, taking into account current challenges and changes in the spread of disinformation. This dataset serves to examine the central argument of the study – in the Czech infospace, pro-Russian disinformation systematically uses emotional narratives adapted to the Czech context to manipulate public opinion and advance specific geopolitical goals.

From this database, we selected messages that were identified as circulating in the Czech information space. We analysed only abstracts, not full texts, i.e., brief main messages and their refutation provided by the EU East Stratcom Task Force. That was a necessary methodological step, driven by the fact that a significant portion of the original texts was no longer accessible at the time of the study. Nevertheless, analysing abstracts is a valid research approach, as confirmed by scholarly literature, namely, Kennedy et al. (2012) and Ahuir et al. (2024) demon-

strated that annotations serve as entry points to the original articles and may be strategically crafted to evoke specific emotions that capture readers' attention. Similarly, Yuskiv et al. (2021) examined the presence of intentions in leads.

Although the analysis of abstracts has certain limitations, this approach allows us to focus on the main emotional triggers embedded in disinformation narratives, and consequently, to reveal how these emotional strategies are used to manipulate the Czech audience. We see the following advantages of this approach:

resource savings – processing abstracts requires less computing power and time than analysing large volumes of original texts;

focus on key content – abstracts concentrate on the most important information and emotions, excluding details that may be irrelevant to the overall tone;

data availability – in cases where the original texts are unavailable or deleted, abstracts can be the only available source of content.

At the same time, we should point out some restrictions regarding the use of this approach:

- loss of context – abstracts often do not contain all the details and nuances that may be important for understanding the full emotional tone of the text;
- reduction of emotional diversity – original texts may contain a wider range of emotional shades that cannot always be captured in an abstract;
- subjective vision of abstract authors – the emotional tone of an abstract may reflect the subjective views and interpretations of the author, i.e., authors may unintentionally include or exclude information that affects the results of the analysis.

It should be emphasized that in this research we did not analyse headlines or pictures though we recognize them important factors for shaping public opinion and evoking emotions. This issue could be the focus of the next study.

Despite these limitations, the research methodology is consistent with its goal to reveal how pro-Russian disinformation uses emotional dynamics, e.g., the combination of fear and trust, to enhance the influence and credibility of its narratives.

4.4. Research algorithm

1. Pre-processing data: disinformation abstracts are selected from the EUvsDisinfo database in the Czech language for the studied period (2016–2023). Subsequent texts are cleaned (unnecessary symbols and service words are removed) and word lemmatization is used (all words are reduced to their basic forms). The collection for the analysis is composed.
2. Sentiment analysis: the NRC Word-Emotion Association Lexicon is used for all messages and words that are carriers of sentiment (positive, negative and neutral words). The corresponding emotions they express

are categorized: positive – trust, joy, anticipation; negative – fear, anger, disgust, sadness; ambivalent – surprise.

Based on the sentiments and emotions of words, the polarization of texts (positive, negative, neutral) and the dominant emotions in messages are determined.

3. Quantitative analysis: the number of messages for each year from 2016 to 2023 is calculated and analysed. Based on emotion frequency analysis, the most common emotions are determined in the general data set. Visualizing data showcases the dynamics of changes in the distribution of emotional colouring over time. To display the dynamics of sentiments, line graphs and diagrams were used indicating how the disinformation emotional impact changed during the studied period. The main attention was paid to the ratio of positive and negative emotions, and the dominance of certain emotions.
4. Network analysis of sentiment and emotionally coloured words: we built and analysed two versions of two-mode networks – 'sentiment words' and 'emotion words'. Then, each of the networks was transformed into single-mode networks. Next, modularity classes were determined, and key nodes (the most frequently used words) were calculated in terms of closeness centrality and betweenness centrality. This allowed us to identify the main topics and groups of sentiment words that are often used together, and to determine the context of clusters in texts. Analysis of words with high closeness and betweenness centrality values made it possible to determine which sentiments and sentiment words play the main role in disinformation texts (e.g., to disseminate emotions or manipulative content), and to identify strategic insights, i.e., how keywords and topics affect the audience, what narratives are used for manipulation. Visualization of networks helps understand the results obtained.

All the described steps were implemented in the R programming language. The following functions and packages were used:

- text data manipulation – tidyverse, tidytext, textdata, stringr, quanteda, quanteda.sentiment packages,
- working with dates – lubridate, tsibble,
- performing statistical tests and comparisons – rstatix,
- text network analysis – textnets package,
- visualization of results – ggplot2, ggwordcloud, igraph packages.

5. Findings

We calculated the total number of Czech-language disinformation messages from 2016 to 2023, present in the EUvsDisinfo database (Table 2). This quantitative analysis provides the basis for understanding how pro-Russian disinformation campaigns in the Czech information space use emotional narratives over time.

Table 2:
Number of disinformation messages in Czech (2016 – 2023, EUvsDisinfo)

Language	2016	2017	2018	2019	2020	2021	2022	2023	Total
Czech	385	210	42	23	35	48	4	11	758

Source: The Authors

The largest amount of detected disinformation in the Czech language occurred in 2016 and 2017 when the number of both negative and positive sentiments was the highest (Table 3).

Table 3:
Sentiments in disinformation messages (2016 – 2023, EUvsDisinfo)

CZ NRC sentiment-year									
Sentiments/ emotions	2016	2017	2018	2019	2020	2021	2022	2023	total
Sentiments									
Positive	510	274	91	54	105	152	15	22	1316
Negative	594	305	99	48	91	145	7	27	1414
Difference	-84	-31	-8	6	14	7	8	-5	-98
Emotions									
fear	440	222	65	28	64	110	11	18	1035
trust	391	217	77	37	60	79	10	14	939
anger	307	163	47	22	41	76	5	11	727
anticipation	199	91	36	14	40	56	3	5	477
sadness	176	91	28	17	43	43	3	5	450
joy	133	65	23	15	18	38	4	3	323
surprise	117	63	15	10	15	42	1	4	292
disgust	106	62	23	7	23	22	1	1	262

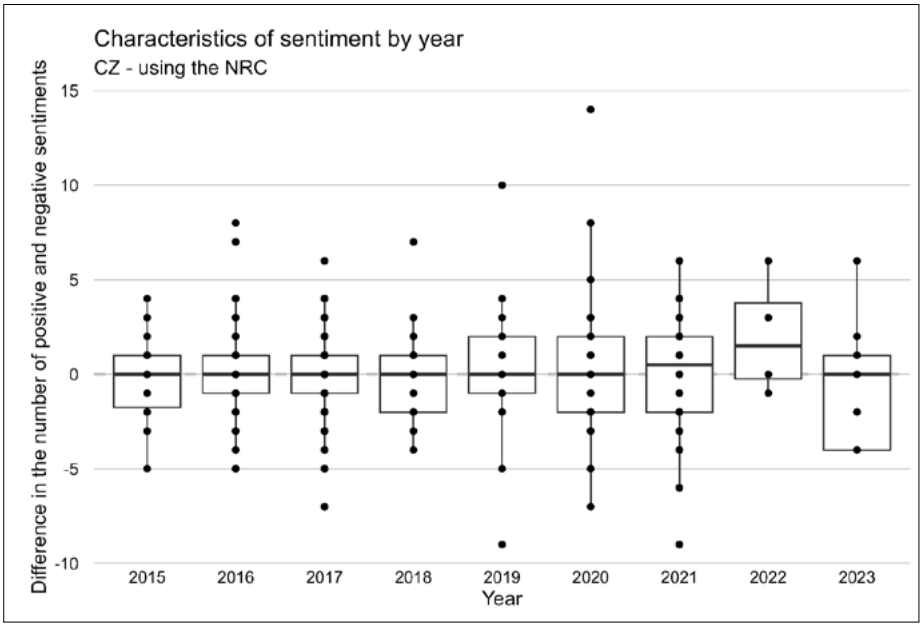
Source: The Authors.

The analysis of the EUvsDisinfo available disinformation database indicates that the most common emotions include fear (1,035 cases), trust (939) and anger (727), confirming their key role as independent variables that shape the dependent variable, i.e., the emotional impact of disinformation. This shows that the manipulative strategy of disinformation campaigns is aimed at provoking strong negative reactions in society while building trust in the source of information to enhance its effectiveness. The dominance of fear, trust and anger also supports the main thesis that pro-Russian disinformation strategically uses these emotions to destabilize trust in democratic institutions and to portray Russia as a reliable and stabilizing force.

Other emotions – anticipation (477), sadness (450), joy (323), surprise (292), and disgust (262) – occur less frequently. The likely goal is to increase the audience's emotional response and amplify the impact of disinformation amid intimidation. The overall trend indicates a decrease in both positive and negative sentiments and emotions in the news in recent years.

There is a general trend towards an increase in the spread of sentiment assessments over time. The graph (Fig. 1) shows a dynamic picture of sentiment analysis of pro-Russian disinformation in the Czech information space, with a tendency towards greater variability of assessments and a slight shift towards positive sentiments in recent years. This may reflect the increasing complexity and multifaceted nature of the discourse around pro-Russian disinformation in the Czech Republic.

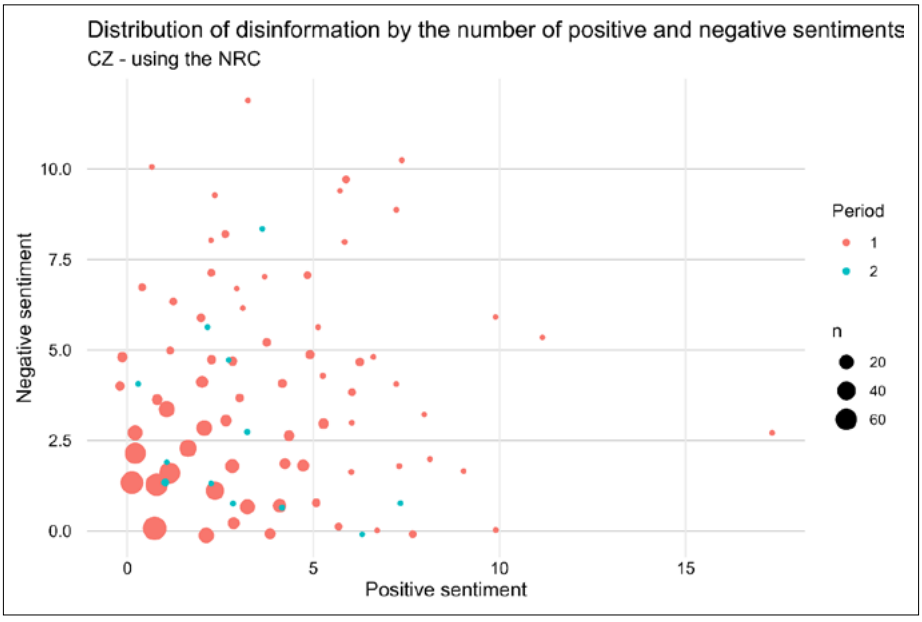
Figure 1:
Characteristics of sentiments by year (using NRC)



Source: The Authors.

Disinformation in the Czech infospace shows a wide range of both positive and negative emotions, although most messages have a low level of emotionality (Fig. 2). This may indicate that most 'news' tries to be less emotionally charged, perhaps to appear more objective and reliable. The size of the dots on the graph shows that most disinformation messages have a small number of emotional components, and the largest dots are closer to the beginning of the axes. We can assume that certain socio-political events or changes in disinformation strategies have occurred that have affected the emotional content of disinformation.

Figure 2:
Distribution of disinformation by positive and negative sentiments (using NRC)



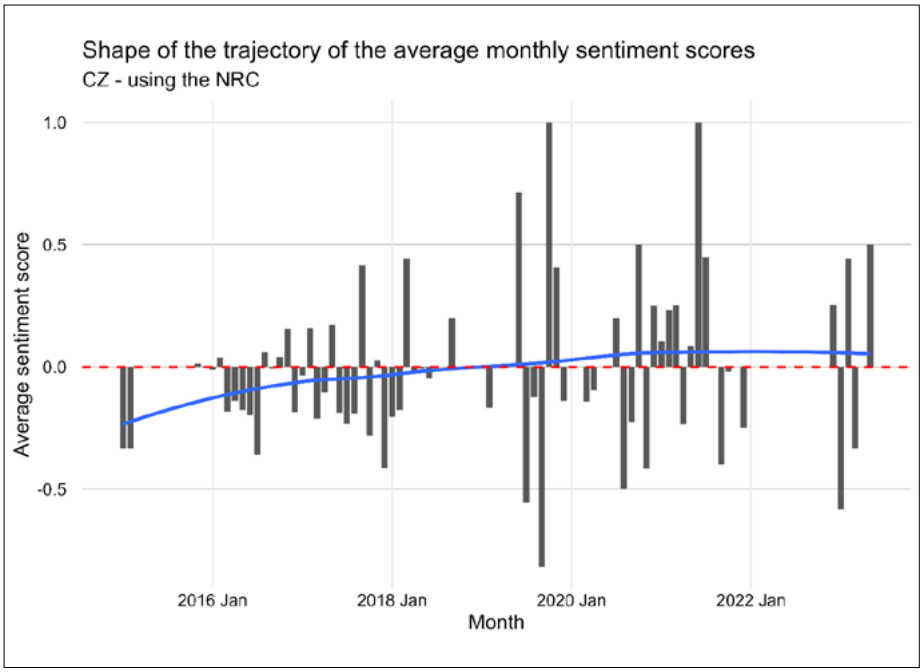
Source: The Authors.

There is a general trend to a gradual increase in the average tone from predominantly negative in early 2016 to more neutral or even slightly positive in 2022 (Fig. 3). This shift from overtly negative to more balanced or even positive tones reflects the increasing 'sophistication' of disinformation strategies. This is consistent with the research argument that the interaction of positive and negative sentiments enhances the manipulative impact of disinformation by stimulating a nuanced emotional response from the audience. This may indicate an evolution in the strategy of disinformation dissemination – from overtly negative narratives to more 'refined' and less obviously manipulative approaches. Such a change is potentially aimed at increasing the audience's trust and the effectiveness of disinformation impact.

The above graph also demonstrates significant volatility in tone throughout the period, with particularly pronounced fluctuations in 2019–2021. These sharp changes may reflect reactions to specific geopolitical events, changes in relations between Russia and Czechia, or adaptation of disinformation tactics to the changing information environment. The peaks in positive tone in late 2019 and early 2021 may be associated with attempts to create a more attractive image of Russia or to divert attention from negative aspects of bilateral relations.

We should emphasize that the amplitude of sentiment fluctuations (the difference between positive and negative sentiments) remains significant throughout the period. This indicates the flexibility and adaptability of disinformation strategies which can quickly respond to changes in the information space and public opinion in the Czech Republic. This approach allows for maximizing the impact of disinformation by varying the emotional colouring depending on specific goals and the current context of Czech-Russian relations.

Figure 3:
Trajectory of the average monthly sentiment scores (using NRC)

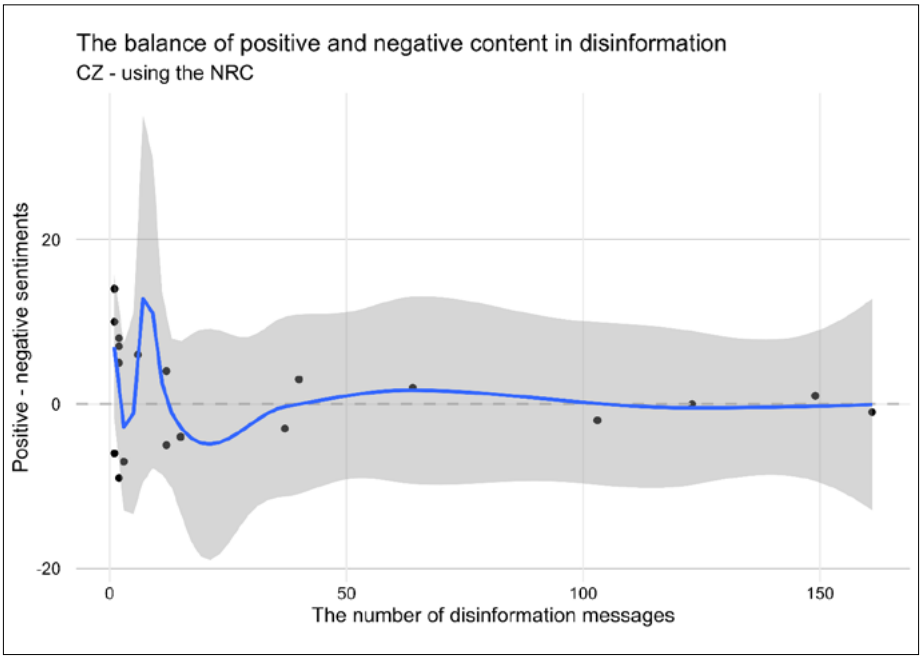


Source: The Authors.

The graph in Fig. 4 demonstrates the balance of positive and negative sentiments in disinformation in the Czech information space. Only a small number of these messages are characterized by significant deviations towards negative sentiments which may indicate a one-sided emotional colouring of these mes-

sages. Nevertheless, in the vast majority of 'news', there is an emotional balance when the difference between positive and negative sentiments is levelled and becomes insignificant. However, the general trend indicates a certain predominance of negative emotional colouring in the majority of messages which may show a tendency towards the dominance of negative sentiments in the Czech infospace.

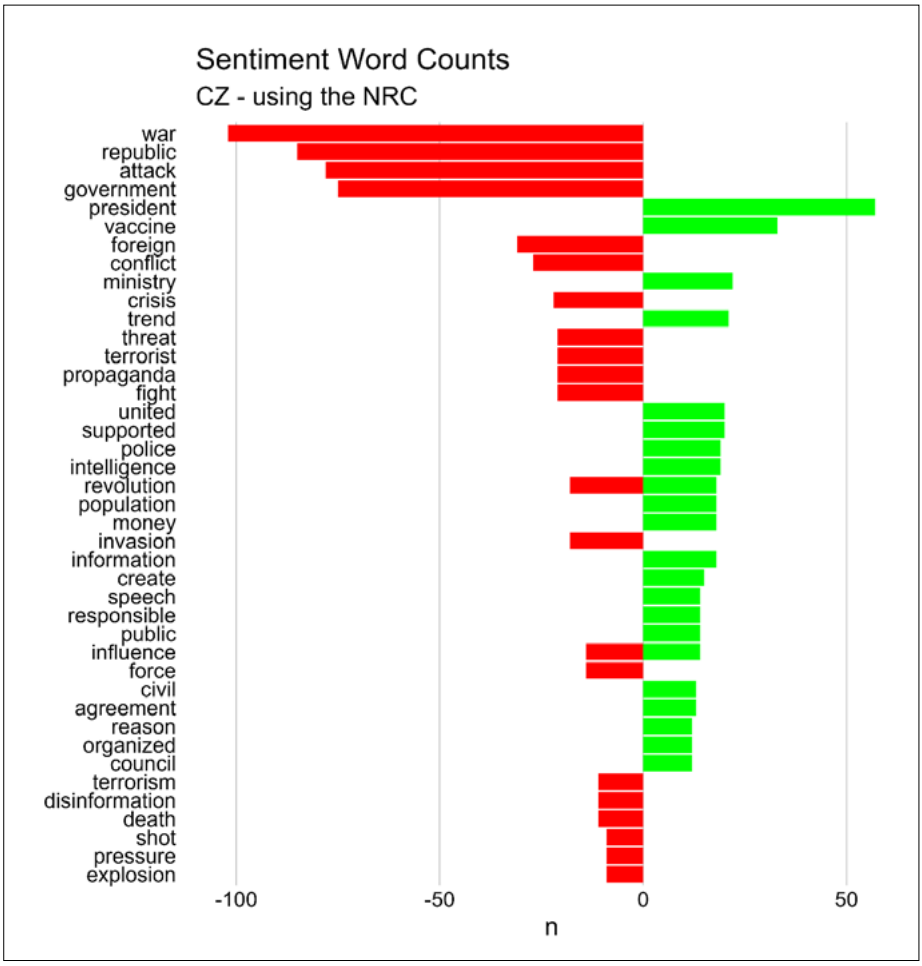
Figure 4:
Balance of positive and negative content in disinformation messages



Source: The Authors.

Analysis of the sentiment lexicon in pro-Russian disinformation (Fig. 5) allows us to draw the following conclusions:

Figure 5:
Sentiments in disinformation messages



Source: The Authors.

1. Sentiment frequency: negative sentiments predominate. The words with the highest frequency of use (war, republic, attack, government) have a predominantly negative connotation. However, there is also a significant number of positive sentiments, especially associated with the word 'president'.
2. Sentiment lexicon (words that occur frequently):
   - negative: war, attack, conflict, crisis, threat, terrorist, propaganda, fight, revolution, invasion, terrorism, disinformation, death, shot, pressure, explosion;
   - positive: president, vaccine, ministry, trend, united, supported, police, intelligence, population, money, information, create, speech, responsible, public, agreement, reason, organized, council.

3. The gist expressed by sentiments:
   - negative sentiments focus on topics of war, conflict, threat, and terrorism to create an atmosphere of danger and instability;
   - positive sentiments are associated with state institutions, governance, vaccination, and security.
4. Comparative frequency: while negative sentiments dominate in frequency, especially the words 'war' and 'attack', positive sentiments also have a significant presence, including 'president' (as effective governance) and 'vaccine' (which may reflect a focus on the topic of healthcare).

This analysis shows that pro-Russian disinformation in the Czech information space employs a complex strategy, combining strong negative sentiments (related to war and threats) with positive sentiments (focused on state institutions and topical social themes). This finding further strengthens the main thesis of the study: the judicious use of contrasting sentiments creates a persuasive narrative designed to manipulate public opinion, alternating fear-induced urgency with assurances that build trust. This may be aimed at creating a contrasting narrative where negative events oppose government activities, perhaps to raise doubts about the effectiveness of state governance in crises.

The analysis of emotions is a complement to the analysis of the sentiment lexicon of pro-Russian disinformation (Table 4).

Table 4:
Emotions in disinformation messages

Words	Sentiments	Emotions	n
war	negative	Fear	102
attack	negative	anger, fear	78
government	negative	Fear	75
president	positive	Trust	57
conflict	negative	anger, fear, sadness	27
ministry	positive	joy, trust	22
fight	negative	anger, fear	21
terrorist	negative	anger, disgust, fear, sadness, surprise	21
threat	negative	anger, fear	21
united	positive	Trust	20
intelligence	positive	fear, joy, trust	19
police	positive	fear, trust	19
invasion	negative	Anger	18
money	positive	anger, anticipation, joy, surprise, trust	18
revolution	negative	anger, anticipation, fear, sadness, surprise	18
revolution	positive	anger, anticipation, fear, sadness, surprise	18
create	positive	Joy	15
force	negative	anger, fear	14
public	positive	Anticipation	14
responsible	positive	Trust	14

Source: The Authors.

The most common emotions include 'fear' (11 out of 20 words), 'anger' (associated with 10 words), 'trust' (7 words). Less common but significant emotions involve 'joy' (4), 'sadness' (4), 'anticipation' (4), 'surprise' (4); 'disgust' is even less common (1). Regarding combinations of emotions, the union of 'fear' and 'anger' is common; some words (e.g., 'terrorist' and 'revolution') evoke a complex set of emotions. The ratio of positive and negative sentiments is balanced: 10 words have negative intensity, and 10 words have positive intensity.

Clustering the text network of the RF's disinformation against the Czech Republic by 'sentiment' indicates certain strategic manipulations aimed at undermining the internal political order and creating an atmosphere of fear and instability (Tables 5, 6, Fig. 6).

Table 5:
Clustering (modularity class) of sentiment words in a network built by the 'Sensitive' criterion

Modularity classes / words	Sentiments	Emotions	Group variables	tf_idf	n
Modularity class – 1 (Politics and public administration)					
president	positive	Trust	positive	0,495	57
vaccine	positive		positive	0,495	33
ministry	positive	joy, trust	positive	0,495	22
trend	positive		positive	0,495	21
supported	positive		positive	0,495	20
united	positive	Trust	positive	0,495	20
intelligence	positive	fear, joy, trust	positive	0,495	19
police	positive	fear, trust	positive	0,495	19
information	positive		positive	0,495	18
money	positive	anger, anticipation, joy, surprise, trust	positive	0,495	18
Modularity class - 2 (Conflicts and International Relations)					
war	negative	Fear	negative	0,823	102
republic	negative		negative	0,823	85
attack	negative	anger, fear	negative	0,823	78
government	negative	Fear	negative	0,823	75
foreign	negative		negative	0,823	31
conflict	negative	anger, fear, sadness	negative	0,823	27
crisis	negative		negative	0,823	22
fight	negative	anger, fear	negative	0,823	21
propaganda	negative		negative	0,823	21
terrorist	negative	anger, disgust, fear, sadness, surprise	negative	0,823	21

Source: The Authors

Table 6:
Words with high centrality in sentiments

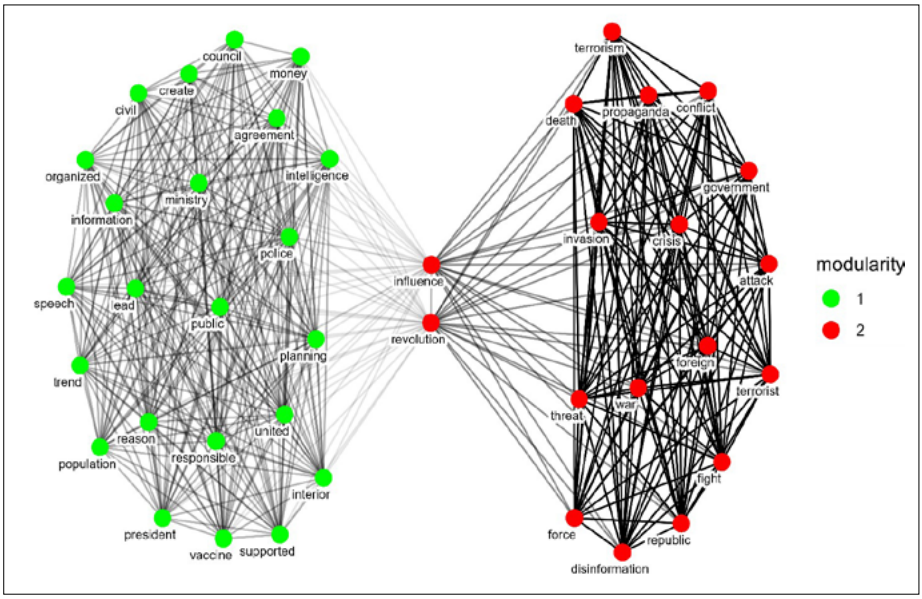
Words	Sentiments	Emotions	Betweenness centrality	Closeness centrality
influence	negative, positive		60,000	0,164
revolution	negative, positive	anger, anticipation, fear, sadness, surprise	60,000	0,164
attack	Negative	anger, fear	0,063	0,092
conflict	Negative	anger, fear, sadness	0,063	0,092
crisis	Negative		0,063	0,092
death	Negative	anger, anticipation, disgust, fear, sadness, surprise	0,063	0,092
disinformation	Negative	anger, fear	0,063	0,092
fight	Negative	anger, fear	0,063	0,092
force	Negative	anger, fear	0,063	0,092
foreign	Negative		0,063	0,092
government	Negative	fear	0,063	0,092
invasion	Negative	anger	0,063	0,092
propaganda	Negative		0,063	0,092
republic	Negative		0,063	0,092
terrorism	Negative	anger, disgust, fear, sadness	0,063	0,092
terrorist	Negative	anger, disgust, fear, sadness, surprise	0,063	0,092
threat	Negative	anger, fear	0,063	0,092
war	Negative	fear	0,063	0,092

Source: The Authors

We constructed several sentiment networks of disinformation based on two criteria:

1) sentiments and 2) emotions. The clustering highlights how pro-Russian disinformation systematically integrates fear, anger, and trust into narratives. This supports the research thesis that emotional manipulations are not random but strategically designed to amplify specific social issues and maintain influence on public opinion in the Czech Republic. Figure 6 is a version of the sentiment-based network. The clustering results identify two main topics: internal political and administrative issues (cluster 1) and external conflicts and international relations (cluster 2). Such central words as 'influence' and 'revolution' have high values of betweenness and closeness centrality, indicating their important role in connecting these two clusters. The word 'influence' emphasizes the narrative of external influence on Czech domestic politics while 'revolution' can be used to link domestic political changes to external conflicts, creating an image of instability.

Figure 6:
Clustering of topics in disinformation messages



Source: The Authors.

We believe that the juxtaposition of internal political processes with external threats is a typical strategy to increase the sense of danger and uncertainty in society. The word 'revolution' can reinforce the idea of possible political changes that can lead to internal instability which, in turn, is strengthened by external threats, such as war or terrorism, presented in the second cluster. A significant number of words in the second cluster are related to security and threats (e.g., 'war', 'attack', 'conflict', 'terrorist'), indicating an attempt to create an atmosphere of fear and uncertainty. This may be part of a larger strategy to destabilize the political situation in Czechia by emphasizing external threats that require the government's immediate response. The presence of such words as 'information' and 'propaganda' in different clusters indicates the importance of the information component in these narratives. This emphasizes the role of propaganda in shaping public opinion and influencing political processes in the country. The presence of the word 'money' in the first cluster may indicate attempts to link political processes with economic interests which creates additional opportunities for manipulation.

The data analysis indicates that the RF uses a complex information strategy to link internal political processes with external threats, thereby creating an atmosphere of fear and uncertainty. These findings support the key argument of the study, i.e., Russian disinformation campaigns exploit emotional triggers to create

an overarching sense of insecurity and instability. By strategically combining emotions of fear, anger, and trust, these campaigns increase their manipulative effectiveness and adaptability to the Czech socio-political context. The concepts of 'influence' and 'revolution' play a key role in this strategy to manipulate public opinion and create the conditions for political destabilization.

The data analysis by 'emotion' criterion (Tables 7 and 8, Fig. 7, 8) shows a complex information strategy aimed at manipulating public opinion through the use of emotional triggers.

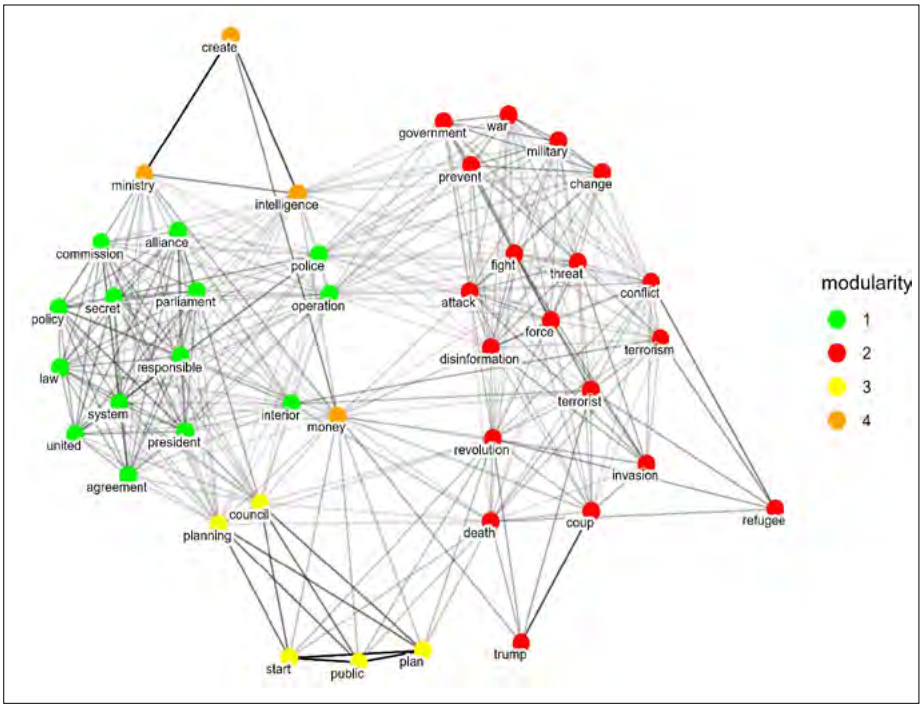
Table 7:
Clustering (modularity class) of sentiment words in a network built by the 'Emotion' criterion

Words	Sentiments	Emotions	Group variables	tf_idf	n
Modularity class - 1 (National Policy and Governance Alliances)					
interior	positive	disgust, trust	disgust	1,176	11
president	positive	trust	trust	0,793	57
policy		trust	trust	0,793	23
secret		trust	trust	0,793	21
united	positive	trust	trust	0,793	20
law		trust	trust	0,793	18
system		trust	trust	0,793	18
responsible	positive	trust	trust	0,793	14
agreement	positive	trust	trust	0,793	13
alliance		trust	trust	0,793	13
Modularity class - 2 (Political Instability and Military Response)					
trump		surprise	surprise	1,946	22
refugee		sadness	sadness	1,946	12
invasion	negative	anger	anger	1,173	18
coup		anger, surprise	surprise	0,973	23
war	negative	fear	fear	0,847	102
government	negative	fear	fear	0,847	75
military		fear	fear	0,847	50
change		fear	fear	0,847	12
prevent		fear	fear	0,847	12
conflict	negative	anger, fear, sadness	sadness	0,649	27

Words	Sentiments	Emotions	Group variables	tf_idf	n
Modularity class - 3 (Public Planning and Council Initiatives)					
plan		anticipation	anticipation	1,658	26
start		anticipation	anticipation	1,658	17
public	positive	anticipation	anticipation	1,658	14
council	positive	anticipation, trust	anticipation	0,829	12
planning	positive	anticipation, trust	anticipation	0,829	11
council	positive	anticipation, trust	trust	0,397	12
planning	positive	anticipation, trust	trust	0,397	11
Modularity class - 4 (Financial Intelligence and Government Initiatives)					
create	positive	joy	Joy	2,351	15
ministry	positive	joy, trust	Joy	1,176	22
intelligence	positive	fear, joy, trust	Joy	0,784	19
money	positive	anger, anticipation, joy, surprise, trust	Joy	0,470	18
ministry	positive	joy, trust	trust	0,397	22
money	positive	anger, anticipation, joy, surprise, trust	surprise	0,389	18
money	positive	anger, anticipation, joy, surprise, trust	anticipation	0,332	18
intelligence	positive	fear, joy, trust	fear	0,282	19
intelligence	positive	fear, joy, trust	trust	0,264	19
money	positive	anger, anticipation, joy, surprise, trust	anger	0,235	18

Source: The Authors.

Figure 7:
Clustering (modularity class) of sentiment words in a network built by the 'Emotion' criterion



Source: The Authors.

In this case, four main clusters emerge, each focusing on a different aspect of political and social life: 1) domestic politics and government alliances, 2) political instability and military response, 3) public initiatives, and 4) financial intelligence and government initiatives. In each cluster, emotions play a key role in shaping narratives that can evoke feelings of fear, anxiety, or hope.

Table 8:
Words with high centrality in emotions

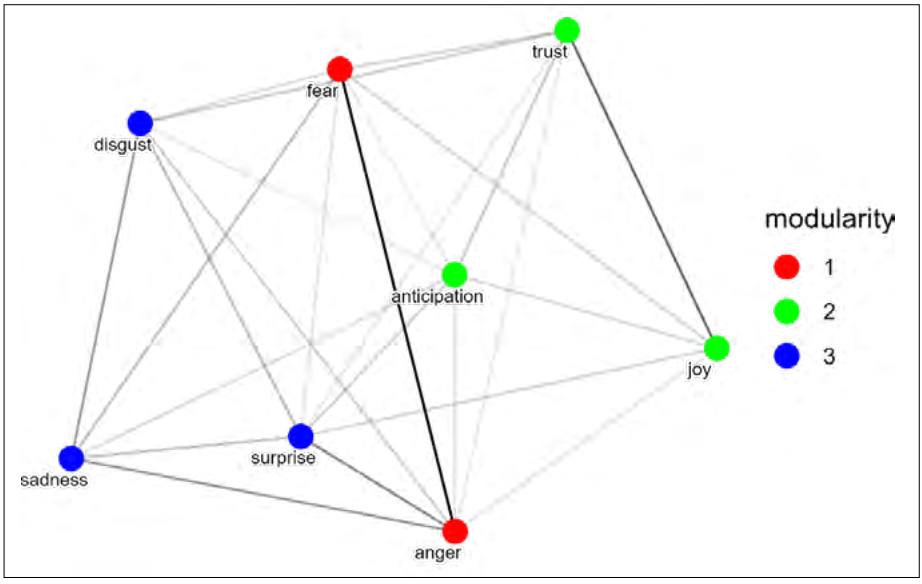
Words	Sentiments	Emotions	Betweenness centrality	Closeness centrality
death	Negative	anger, anticipation, disgust, fear, sadness, surprise	68,0	0,065
money	Positive	anger, anticipation, joy, surprise, trust	44,5	0,055
coup	-	anger, surprise	28,0	0,055
terrorism	Negative	anger, disgust, fear, sadness	15,0	0,047
plan	-	anticipation	8,7	0,058
public	Positive	anticipation	8,7	0,058
start	-	anticipation	8,7	0,058
operation	-	fear, trust	3,3	0,469
police	Positive	fear, trust	3,3	0,469
attack	Negative	anger, fear	0,0	0,360
disinformation	Negative	anger, fear	0,0	0,360
fight	Negative	anger, fear	0,0	0,360
force	Negative	anger, fear	0,0	0,360
threat	Negative	anger, fear	0,0	0,360
invasion	Negative	anger	0,0	0,291
change	-	fear	0,0	0,279
government	Negative	fear	0,0	0,279
military	-	fear	0,0	0,279
prevent	-	fear	0,0	0,279
war	Negative	fear	0,0	0,279
revolution	negative, positive	anger, anticipation, fear, sadness, surprise	0,0	0,055
terrorist	Negative	anger, disgust, fear, sadness, surprise	0,0	0,051
trump	-	surprise	0,0	0,046
interior	Positive	disgust, trust	0,0	0,046
refugee	-	sadness	0,0	0,041
intelligence	Positive	fear, joy, trust	0,0	0,040
ministry	Positive	joy, trust	0,0	0,036
conflict	Negative	anger, fear, sadness	0,0	0,035
council	Positive	anticipation, trust	0,0	0,028
planning	Positive	anticipation, trust	0,0	0,028
create	Positive	joy	0,0	0,028

Source: The Authors.

There is a clear connection between domestic political processes, military operations, and financial intelligence, reinforcing narratives about the importance of national security and stability. These topics can be used to legitimize government actions or to justify harsh measures that affect civil liberties. This creates the basis for strategies that use emotional influence to manipulate public consciousness.

Figure 8 is a version of a network built based on emotions.

Figure 8:
Main emotions in disinformation and their relations



Source: The Authors.

This network visualizes how emotions can influence each other, namely:

1) central emotions:
   - 'fear' and 'anger' are the most connected emotions in the network. This suggests that fear is often associated with or can cause anger, and vice versa;
   - 'anticipation', although located closer to the middle, has relatively weaker connections with other emotions which may indicate its indirect role in influencing other feelings;

2) negative emotions:
   - 'sadness', 'disgust', 'anger', 'fear' have strong interconnections emphasizing the tendency of their mutual reinforcement;
   - 'anger' is associated with 'fear' and 'disgust' which may stem from the nature of these emotions since negative feelings often cause a strong emotional reaction;

3) positive emotions:
    - 'trust' and 'joy' are closely related; both emotions can occur together. When people feel joy, they often trust their surroundings or situation more;
    - at the same time, these positive emotions have fewer connections with negative emotions. This may indicate that they function in the opposite context;
4) contrast of positive and negative emotions: 'fear', 'sadness' and 'disgust' are sharply contrasted with 'trust' and 'joy'. There are fewer connections between them which means these groups have different emotional contexts;
5) ambiguous emotions: 'surprise' and 'anticipation' are located between positive and negative emotions which may indicate their ambivalent nature. Depending on the context, these emotions can be associated with both positive and negative experiences and enhance them. They are 'bridges' between positive and negative emotions.

Fig. 8 demonstrates that negative emotions have a greater number of interconnections and often reinforce each other. The interconnected positive emotions have fewer connections with negative feelings which indicates their different nature and impact.

6. Concluding remarks

A systematic analysis of 758 disinformation messages from the EUvsDisinfo database (2016–2023) revealed a structured emotional architecture of pro-Russian disinformation within the Czech information space. The application of sentiment analysis using the NRC Word-Emotion Association Lexicon, combined with textual network analytics, enabled the identification of the following.

Pro-Russian disinformation employs a strategy of emotional contrast, implemented through three mechanisms: (1) destabilization through fear and anger, i.e., creating an atmosphere of threat by emphasizing external conflicts and internal instability; (2) legitimization through trust, i.e., embedding elements of trust associated with state institutions, which gives the message the appearance of objectivity; (3) cognitive connection, i.e., using words with high network centrality ('influence', 'revolution') to unite different thematic clusters into an overarching narrative of instability.

There is a general trend towards an increase in the scatter of sentiment assessments over time. The evolution of the emotional structure is shown by three distinct phases: a period of highest intensity with the dominance of negative sentiments (2016–2017), a transitional period with diversification of emotional strategies (2018–2019), and a shift towards emotional balance with a peak of positive sentiments in 2022 (2020–2023). The peak of positive sentiment in

2022 – the year of Russia's full-scale invasion of Ukraine – demonstrates the 'sophistication' of manipulative techniques: instead of escalating negativity, disinformation campaigns adapt to the information environment, creating the impression of objectivity. This temporal transformation confirms that pro-Russian disinformation dynamically adapts to the geopolitical context.

Emotional architecture of disinformation: the dominance of fear (1,035 cases), trust (939), and anger (727) confirms their role as strategic tools of manipulation. A critical insight is the ratio of fear to trust (1.10:1), which indicates a balanced strategy: for every 10 cases of fear induction, there are 9 cases of trust-building. This dual strategy aligns with the concept of 'hybrid warfare' (Hoffman, 2007), where information operations combine multiple mechanisms of influence.

The identification of four thematic clusters reveals a comprehensive approach: (1) domestic politics and government alliances – a balanced combination of trust and fear; (2) political instability and military response – dominance of fear and anger with high-frequency words 'war', 'attack', 'conflict'; (3) civic initiatives – increasing trust and positive emotions; (4) financial intelligence and government initiatives – integrating economic narratives with security themes.

The central role of the words 'influence' and 'revolution' with high betweenness and closeness centrality indicators shows their function as 'bridges' between the clusters. The use of the word 'revolution' can be interpreted as an attempt to create an image of political instability – a tactic common in disinformation campaigns against Central and Eastern European countries (Krastev, 2018).

The results of the study confirm and extend theoretical concepts of manipulative influence. In particular, the theory of affective intelligence (Marcus et al., 2019) receives empirical confirmation: fear stimulates attention to information, and trust determines the willingness of the audience to perceive it as true. The data show that these emotional dynamics are systematically embedded in disinformation narratives to maximize their impact on political sentiment. Dual-process theories (Barrouillet, 2011) are supported by the revealed strategy of emotional contrast: negative emotions (fear, anger) provoke an impulsive reaction, while positive emotions (hope, trust) engage in reflective thinking. The consistent combination makes messages more memorable and persuasive. Framing theory (Goffman, 1974) demonstrates relevance through cluster analysis: pro-Russian disinformation actively uses fear and trust to create narratives that arouse distrust of Western-oriented institutions, positioning Russia as a stabilizing force. Political propaganda theory (Lasswell, 1927) has received empirical confirmation through the identified narratives aimed at undermining the domestic political order. The connection between internal processes and external threats demonstrates classic mechanisms of manipulation through the creation of an 'image of the enemy' (Jowett & O'Donnell, 2015). The revealed dominance of fear as the most prevalent emotion confirms Barker et al.'s (2019) findings on the critical role of emotions

in political decision-making. However, our study goes further, demonstrating specific mechanisms of combining fear with trust to enhance persuasion in the post-communist context of the Czech Republic.

Unlike most previous works that focused on static analysis, our study reveals temporal changes in emotional structure that correlate with geopolitical events. The evolution from openly negative narratives to 'sophisticated' manipulative approaches demonstrates the adaptability of disinformation strategies to changes in the information environment. The research fills an important gap in the study of regional features of the spread of disinformation in post-communist states. The identified mechanisms take into account the specific Czech socio-political context, in particular historical experience, geopolitical location, and current relations with Russia.

Availability of data and materials

The datasets generated and analysed during the current study are available in the Open Science Framework (OSF) repository. The repository includes the raw data and processed datasets used for the analysis. All materials are publicly accessible at: https://osf.io/h4q7z/overview?view_only=bdcacb62ca334510b9cd18ea85618bef

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Endnotes:

1 In this article, 'pro-Russian' referrers to Russia under Putin's rule and to the disinformation campaign against the West.

2 List of sites in descending order of frequency: cz.sputniknews.com; aeronet.cz; protiproud.cz; ac24.cz; New World Order Opposition; novarepublika.cz; svetkolemnas.info; svobodnenoviny.eu; parlamentnilisty.cz; czechfreepress.cz; zvedavec.org; ceskoaktualne.cz; prvnizpravy.parlamentnilisty.cz; eurasia24.cz.