Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Internet Technologies

Bachelor Thesis

Uncovering Kazakhstan's perspective on the Russia-Ukraine war through a survey and analysis of social media

Mukashev Ramil

CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

BACHELOR THESIS ASSIGNMENT

Ramil Mukashev

Economics and Management

Thesis title

Uncovering Kazakhstan's perspective on the Russia-Ukraine war through a survey and analysis of social media

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Objectives of thesis

The objective of this thesis is to provide a comprehensive understanding of opinions and attitudes towards the Russia-Ukraine war of a selected group of people in Kazakhstan.

Partial objectives:
- Identify and analyse prevalent views and sentiments towards the conflict.
- Identify and analyse primary ideas, concerns, and beliefs that are held by the people of Kazakhstan and how the discourse of national leaders differs from public opinion.
- Assess the role of social media in shaping public opinion and influencing national response to crisis.

Methodology

The methodology of the theoretical part of the thesis is based on the study and analysis of professional and scientific sources of information.

In the practical part, a survey among selected target groups will serve as a primary data source for statistical analysis. Content analysis from selected social media sites will be used as a secondary data source.

Based on the findings of the survey, content analysis, and literature review, conclusions will be drawn.

The proposed extent of the thesis

40 – 50 pages

Keywords

Russia-Ukraine war, Kazakhstan, infodemics, social media, perspective, misinformation, disinformation, sentiment, public opinion, narrative

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Recommended information sources

Aïmeur, E., Amri, S., & Brassard, G. (2023). Fake news, disinformation and misinformation in social media: a review. Social Network Analysis and Mining, 13(1), 30.

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Expected date of thesis defence

2023/24 SS – PEF

The Bachelor Thesis Supervisor

Věra Motyčková, MA

Supervising department

Department of Information Technologies

Electronic approval: 10. 10. 2023

doc. Ing. Jiří Vaněk, Ph.D.

Head of department

Electronic approval: 3. 11. 2023

doc. Ing. Tomáš Šubrt, Ph.D.

Dean

Prague on 10. 03. 2024

Declaration

I declare that I have worked on my bachelor thesis titled "Uncovering Kazakhstan's perspective on the Russia-Ukraine war through a survey and analysis of social media" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague 13.03.2024 _____

Acknowledgement

I would like to thank my Thesis Supervisor Věra Motyčková for guidance and my family for support during my bachelor thesis research.

Uncovering Kazakhstan's perspective on the Russia-Ukraine war through a survey and analysis of social media

Abstract

This bachelor thesis investigates Kazakhstan's public perception of the Russia-Ukraine war, which started in 2022 through a survey and social media analysis. In era of digitalization, the thesis investigates the nature of formation of national response to crisis in context of Kazakhstan's reaction to Russa-Ukraine active conflict, contrasting public sentiment with the discourse of officials. The research employs quantitative methods, sentiment analysis, and Fisher's exact test to explore the prevalent sentiments and opinions shaped by historical ties and the influx of digital information.

The results show that the nation is driven by its historical identity, geopolitical loyalties, and desire for regional stability. The study emphasizes the role of digital platforms in spreading information with both negative and positive implications. A review of academic literature gives an idea of what an infodemic is and what contributes to its formation. This work adds to the understanding of public opinion formation during crisis in the digital era.

Keywords: Russia-Ukraine war, Kazakhstan, infodemics, social media, misinformation, disinformation, sentiment, public opinion

Odhalení pohledu Kazachstánu na rusko-ukrajinskou válku prostřednictvím průzkumu a analýzy sociálních médií

Abstrakt

Tato bakalářská práce zkoumá vnímání rusko-ukrajinské války, která začala v roce 2022, kazašskou veřejností prostřednictvím průzkumu a analýzy sociálních médií. V éře digitalizace práce zkoumá povahu utváření národní reakce na krizi v kontextu reakce Kazachstánu na rusko-ukrajinský aktivní konflikt a konfrontuje nálady veřejnosti s diskurzem oficiálních představitelů. Výzkum využívá kvantitativní metody, analýzu sentimentu a Fisherův exaktní test ke zkoumání převládajících nálad a názorů formovaných historickými vazbami a přílivem digitálních informací.

Výsledky ukazují, že národ je veden svou postsovětskou identitou, geopolitickou loajalitou a touhou po regionální stabilitě. Studie zdůrazňuje roli digitálních platforem při šíření informací s negativními i pozitivními důsledky. Přehled odborné literatury poskytuje představu o tom, co je to infodemokracie a co přispívá k jejímu vzniku. Tato práce přispívá k pochopení formování veřejného mínění během krize v digitální éře.

Klíčová slova: Rusko-ukrajinská válka, Kazachstán, infodemie, sociální média, perspektiva, dezinformace, , sentiment, veřejné mínění, příběh

Table of content

Table of Figures

Table of Tables

Table of Bar charts

Table of Equations

Introduction

In an era where digital communication transcends physical boundaries, understanding the dynamics of public sentiment regarding geopolitical events through the lens of social media has become paramount. This dissertation delves into the complex picture of Kazakhstan's national response on the Russian-Ukrainian war. Using a combination of surveys and sentiment analysis, the study aims to define the prevalent sentiments and attitudes towards war held by Kazakhstani people, as well as compare how discourse of officials aligns with public opinion. Kazakhstan's unique geopolitical position as a post-Soviet state with strong historical ties to both Russia and Ukraine offer an intriguing point of view from which it’s possible to assess mechanics of formation of national response on global crisis.

Studying this topic is not just an academic pursuit but has immediate relevance as digital echo chambers and spread of false information shape and change public opinion. As such, this research aims to contribute to a broader understanding of how infodemic is both a reflection and driver of geopolitical positions contributing to formation of certain sentiments.

The introduction premises that during conflicts such as the Russo-Ukrainian War, reactions and opinions circulating on social media may provide a window into the collective thinking of a nation or reveal mechanisms that shape public opinion. By carefully examining processes mentioned above, the author attempts to uncover the subtleties of social media landscape during crisis and how it resonates with ongoing Russia-Ukraine War.

2. Objectives and Methodology

2.1 Objectives

The primary objective of this thesis is to conduct a comprehensive analysis of the opinions and attitudes of the Kazakhstan population regarding the Russia-Ukraine war initiated in 2022. Through conducted surveys and sentiment analysis of content of social media, this thesis will provide insightful perspectives on how the Kazakhstan population perceives and reacts to the Russia-Ukraine war and how public opinion differs from official's discourse.

Furthermore, the research aims to explore the prevailing sentiments towards Russia's justifications for the invasion, perceptions of Kazakhstan's role in the conflict, the influence the sources of information that inform the public's views, and satisfaction with Kazakhstan's response to the conflict.

Through a detailed investigation of these areas, this thesis aims to illuminate the complex interplay of information, sentiment, and national identity in Kazakhstan's public discourse regarding the Russia-Ukraine war.

2.2 Methodology

This thesis will study how people in Kazakhstan feel about the Russia-Ukraine war. It will use a survey designed by the author and analyze the results with methods including frequency analysis and Fisher's exact test. Additionally, sentiment analysis techniques will also be utilized to get deeper insights.

Survey

Survey is a research approach used to collect data with further extraction of insights into people's opinions, sentiments, beliefs etc. (Kasunic, 2005)

In this thesis, author conducted survey among population of Kazakhstan regarding the topic of Russia-Ukraine war.

The choice felt on online format via Google Forms due to the following reasons: Low cost of operating, fast transmission of data, ease in categorization and export of data. (Kasunic, 2005)

Frequency analysis

To identify prevalent answers in each question, the author used frequency analysis method.

Frequency analysis involves the statistical method of counting how frequently each value appears in a dataset, allowing the pattern of these frequencies to be analyzed. This approach helps in understanding the distribution and variability of data across different values or categories.

Fisher's exact test

To assess the relationship between two variables, Fisher's Exact Test was performed using SPSS Statistics software. This choice was due to the small sample size and the distribution of the data. (Bower, 2014)

The probability of observing a given set of frequencies A, B, C, and D in a contingency table, given fixed row and column marginal totals and sample size N, is: (Preacher, 2001)

Equation 1 - Fisher's exact test

$$p = \ ((A + C)/A \ \ (B + D)/B)/(N/(A + B))$$

While the test's formula was not manually applied, SPSS software was used to compute the exact probabilities for the test.

An alpha level of 0.05 was established as the standard for all hypothesis testing conducted. This means any p-value falling under this alpha level was interpreted as indicative of a statistically significant association.

Sentiment analysis

Sentiment analysis is a widely spread technique in natural language processing to mine opinion and assess polarity of retrieved text. (Manguri, 2020)

Sentiment analysis was used to determine the prevailing sentiment with which public news Telegram channels in Kazakhstan covered events of the beginning of Russian-Ukraine war.

As a programming language was chosen Python due to community support and availability of free libraries with pre-trained models. As a code editor author proceeded with Visual Code Studio due to ease of use and code manipulation.

Libraries

The model is constructed using several libraries that are necessary for sentiment analysis procedure:

- *pandas*: A popular data manipulation and analysis library for Python, used here to read data from an Excel file into a DataFrame, process it, and write the results back to an Excel file.
- *transformers*: An NLP library by Hugging Face that provides a collection of pre-trained models and utilities for a variety of NLP tasks. In this code, it's used to load a pre-trained model and tokenizer for sentiment analysis.
- *torch*: The PyTorch library, which is a machine learning framework that supports a wide range of deep learning models, including those available through the transformer's library.
- *re*: Python's built-in library for regular expression operations, which allows for sophisticated text matching and manipulation. It is used here for text preprocessing.
- *string*: Another standard Python library that provides a set of string operations and constants. Here, it's used for removing punctuation during text preprocessing.

Model

As a model for processing texts was chosen *'blanchefort/rubert-base-cased-sentiment-rusentiment'*. The model *'blanchefort/rubert-base-cased-sentiment-rusentiment'* is based on DeepPavlov's conversational model and trained with the RuSentiment dataset, sourced from VK, Russia's largest social network. This dataset, notable for its size and diversity, includes over 31,000 annotated posts, with a subset selected for testing and ensuring data variety. It stands out as the largest openly accessible sentiment analysis dataset for Russian social media, (Burtsev, 2018)

The results are interpreted according to the label map of the model:

0: NEUTRAL – objective, factual language in the context of research meaning coverage of event without any emotional phrases having neutral sentiment

1: POSITIVE – subjective, opinion or non-factual language, in the context of research meaning coverage of event with emotional phrases, subjective expressions having positive sentiment

2: NEGATIVE - subjective, opinion or non-factual language, in the context of research meaning coverage of event with emotional phrases, subjective expressions having negative sentiment

The confidence score refers to the confidence of model about predicted sentiment. A high score (closer to 1) indicates strong confidence in the sentiment classification. A lower score (closer to 0.5) indicates less certainty and possibly a mix of sentiments within the posts or a higher level of ambiguity in how sentiments are expressed.

The results are interpreted in context of national response of Kazakhstan on Russia-Ukraine war,

3. Literature Review

For thousands of years information served humanity in many forms, helping create the essential infrastructure for human species. This chapter follows the review of academic literature dedicated to investigation of nature of information and infodemics. It reveals the challenges of information theory and its application in the past and in the modern era. It also describes how the development of information, and its mediums affected the progress of humanity in technology, philosophy, and social aspects of people's life. In the literature review, the author delves into the concepts of infodemic followed by comparisons of misinformation and disinformation in the context of world events. Therefore, there is a critical need to filter information and understand the nature of a particular narrative. This chapter also covers Kazakhstan's connections with Russia and Ukraine, and it will briefly describe the significant events that took place in Ukraine in February 2022.

3.1 Information

Information is a fundamental concept lying in the formation of civilization and its infrastructure. For centuries information served humanity as a tool with which humanity became able to create complex communication networks and pave the way to the knowledge of the world. The quest to understand "information" is old as humanity itself, but the will to dive deep into subtleties of its entity is relatively new. Due to the abstract and multifaceted nature of the concept of information, it brings into academic world more challenges rather than answers, however the constant breakthroughs and findings in determining the nature of information allowed it to evolve from a specific tool to a driving force. (Gleick, 2011)

In the 20th century, the understanding of information was transformed by significant contributions in mathematics and engineering. Shannon's "The Mathematical Theory of Communication" introduced a way to measure information as uncertainty, changing how it's analyzed and applied. This mathematical framework for organizing information sparked major advancements in telecommunications, leading to the digital age. (Shannon, 1949)

Alongside exploring its mathematical and engineering aspects, information has also been understood through its philosophical and ideological dimensions, as something rich with meaning and knowledge. Floridi's "The Philosophy of Information" contrasts the view

of information merely as data with its role as a connector between raw data and wisdom, implying it merges mathematical, semantic, and historical elements. (Floridi, 2011)

The impact of evolving understanding of information on humanity cannot be underestimated. The Wiener's insights underscore the common feature of information processing between machines and living organisms. His cybernetics made a conceptual break between life and mechanism. It was assumed that if responding mechanisms of machine can be complicated enough, they could remind mechanisms of organic life when stimuli applied. This mix of organic and synthetic has vast implications, especially as science moves towards creation human-like AI and implementing that concept into biotechnology. (Wiener, 1948). As humanity moves towards creating human-like AI the profound implications underscore the transformative potential of evolving understandings of information, paving the way for further exploration and innovation.

Quantitative abstraction of information

In the post-World War 2 era, the new way of computing information was discovered. In work, "The Mathematical Theory of Communication" Shannon began a thorough investigation of the mathematical structures that underlie communication processes. His research focus was on developing a measure of information that is called "entropy". (Shannon, 1949) Conceptualization of entropy served as a basic metric for quantifying the efficiency and limits of communication systems. Creating the limit where data would not lose quality during compression and establishing bandwidth for communication, led to clear theoretical foundation of all digital communication and information theory as well. The concept of information entropy created a solid foundation for information technologies and allowed humanity to transform the methods of communication in the form in which they exist now: television, social media etc.

Semantic abstraction of information

Information as itself is not monolithic or one dimensional. Beyond its mathematical aspect, information possesses layers and meaning, relevance and especially context. Luciano Floridi doubts that perception of information must be restricted by pure logic and

mathematics'. He parries it, giving another perspective on the string "01101101" in binary code, saying that the true value, namely semantic value, information gains only in particular context or system, otherwise only first layer of information is seen. (Floridi, 2011) Here the big gap between machines and organisms is seen. As organisms process environmental stimuli, they essentially construct their version of reality. It means that information does not exist "out there" but is actively interpreted and built into meaningful by receivers in a face of living organisms. (Dusenbery, 1992)

Shannon defined entropy as a measure of uncertainty in information highlights how varied or predictable a message is. (Shannon, 1948) However, the limitation of quantitative approach exists if specific example is taken: two groups of birds coexist in the forest. One group has complex singing having unpredictable patterns of sounds, that is high entropy. The second group has a simple song with more predictable patterns which means low entropy. In that case, if information was only assessed from mathematical point of view and through concept of entropy, birds with highly unpredictable singing would be producing more informative piece of sound, that is information. However, from point of view of receiver, as an example human, both groups will be defined as birds. This example underscores that mathematical properties of information (Shannon's entropy) don't always match with its qualitative and biological significance. (Floridi, 2011)

Comparing Shannon's idea of entropy with Floridi's concept of semantic value shows how complex and varied information theory is, pointing out differences between how computers and living things process information. This comparison suggests we need more research into how we understand and use information in various areas, helping us grasp its importance in our lives and knowledge more fully.

Cultural abstraction of information

One but not the least important aspect of the concept of information is *medium*. Distinguishing *sender* and *receiver* allows us to understand the context, but defining *medium* allows understand how fast information is sent and received and how much data is lost or remains unused.

Diving deep into history, it is possible to construct the simplest, but significant analogy: Drums used by some African tribes to transmit information are the same medium as telegraph transmitting morse code. The only difference is the time and speed with which

information is spread. Pietrzyk Kamilla categorized mediums into two groups: time-biased and space-biased. Time-biased, like stones, tablets or oral traditions are durable and preserve the initial form of information, like traditions, faith, and ideology. On the other hand, space-biased mediums, like paper, papyrus, manuscripts are less durable but highly mobile and can spread the word quicker. (Pietrzyk, 2012) Specific example is Ancient Egypt with stone and Roman Empire with papyrus. Durable mediums like stones and tablets with engraved glyphs and symbols were contributing to Ancient Egypt long-lasting. Inscribed messages were reflecting the empire's commitment to tradition and deep-tooted ideology of continuity, ritual and the cyclical nature of life and death.

Moving to the Roman Empire which is known for its vast territorial expansion, was using highly mobile mediums like papyrus and manuscripts. The Roman Empire spanned three continents, necessitating efficient communication channels. Roman's passion to build interprovincial roads coupled with effective communication channels let empire spread the word, ideology and expose law on provinces faster. In both cases, the medium of information reflected the nature of and longevity of Empires. (Innis, 1950). Moving back to modern days, especially 21st century, when the internet and social media has replaced any printing press and made information spread with enormous speed, the question "How to filter information and how to preserve the loss of quality in it?". (Pietrzyk, 2012)

3.2 Infodemics

The term "infodemics" is relatively new, but the ideas behind are not. Essentially infodemic happens when there is a huge information flow that it becomes difficult to define truth and falseness. The term itself started being often used during the era of internet and social media. Globalism and computerization of the world is still ongoing, and the way it happens is probably inevitable. The internet more aspects of human life are tied to the internet, the biggest accelerator of information transmission, helping humanity create vast amounts of information in all forms possible.

Given the nature of humanity's inherent need for socialization to feel secure, it is unsurprising that during significant events, there's a marked increase in the flow of information, encompassing sentiments, accusations, sympathies, and even intentionally false information. Thus, moving to Innis work "Empire and Communications" where he proves that infodemics occurred in past and people were facing the same challenge of

sorting through mix of true and false information. Infodemics have happened both in history and in recent times, affecting society in big ways. One old example is the European witch trials. Back then, false stories and fears, along with religious issues, caused panic and led to many people being wrongly accused and punished. (Gleick, 2011)

In recent times, the COVID-19 outbreak is a clear example. Even with real health warnings, many false stories and beliefs spread fast. This made it hard to control both the disease and the wrong information (World Health Organization, 2020) (Aïmeur, 2023)

Overall, infodemics connect old problems of checking whether the information is true especially with today's issue of having too much information. As communities need to learn lessons from history, science, and tech to find solutions. What we learn from past and current infodemics will help to handle similar problems in the future.

3.2.1 Misinformation and Disinformation

Distinction

In the digital era, access to vast amounts of information also brings challenges of phenomena of misinformation and disinformation. Even though both terms in everyday language have the same meaning, they have different academical definitions. In academic studies, it's important to understand the difference between misinformation and disinformation when looking at infodemics.

As explained by Chou, misinformation is any wrong information, whether shared on purpose or not. Its origins often lie in innocent errors such as misunderstandings, usage of outdated facts, or translation mistakes. The repercussions of misinformation are significant, as it can lead to people making uninformed decisions, and it's frequently connected to cognitive biases like confirmation bias. (Chou, 2018)

On the other hand, disinformation is false information shared with the intent to mislead. It is often the result of meticulously crafted narratives or organized campaigns designed to manipulate media and public perception. Disinformation can deepen societal divides, propagate deceptive narratives, and have severe, tangible effects on the real world. It targets cognitive biases and sometimes is weaponized for various purposes. (Brennen, 2020)

This becomes even more important in today's digital age, where false information can be used for different purposes, like politics or business. Understanding these ideas means seeing how they are different. This distinction will be explored in further detail as this thesis progresses, examining the implications and applications within various domains like politics or warfare.

Cognitive Frameworks Behind Misinformation and Disinformation

Misinformation and Disinformation are distinct in their origins, however, share common ground in the cognitive mechanisms that facilitate their propagation. Uncovering cognitive underpinnings that drive both misinformation and information, leads to better understanding of their impacts and consequences related to formulation of social narratives.

Understanding cognitive biases like confirmation bias is key to recognizing societal challenges and fighting the spread of false information. Confirmation bias that stands for people's will to confirm their personal pre-existing beliefs and concerns, perhaps is most significant aspect of misinformation and disinformation reproduction. (Nickerson,1998) This means that people tend to believe information that aligns with their worldview, even though evidence is given and clearly explained. This bias plays a significant role in how individuals interpret information, often trapping them in an echo chamber of their own views.

In that case, people would prefer to stick with the group of individuals whose ideas and beliefs resonate with theirs. It gives a solid ground for misinformation and disinformation being spread within polarized environments, such as political debates or religious affiliation. (Nickerson, 1998)

Recognizing this natural inclination is vital for evaluating how people process information and the potential impact on their perception of reality. As we move through the thesis, there will be discussed the strategies to address the influence of cognitive biases on information consumption.

Term "Availability heuristic" is an official academic term which is widely recognized and started being exploited after Amos Tversky and Daniel Kahneman introduced this term in 1973. Which stands for how people perceive the likelihood of

certain events happening based on their emotional association with previous events. (Tversky, 1973)

It means that events that are easily remembered due to their frequency, ability to recall emotions, or repetition- have exaggerated perceived frequency or importance. (Tversky, 1973). Events that trigger emotions, such as fear, anger or sadness are easy to recall, rather than events without any emotional charge. They are saying that any information that carries strong emotions can gain traction quicker as people tend to unite into groups and recall similar events without assessment of information validity.

One, but not least important aspect of "Availability heuristic" concept is a repetition of information. Schwarz noted that excessive repletion of piece of information can make it feel truer, even if its reliability was not established. (Schwarz, 2007) Hence, the illusion of truth that occurs can be perceived as factual because it seems familiar.

In essence, availability heuristic underscores the importance of critical thinking and media literacy in preventing misinformation and disinformation propagation. If the information is easily recalled, it does not make it true.

3.2.2 Propaganda

Propaganda is a term that played a big role in organizing the ways to shape people's opinions and beliefs. Propagandists strategically select and sometimes distort facts to maximize their influence, differentiating propaganda from education, which aims to present various perspectives to encourage critical thinking and evidence evaluation. (Encyclopedia Britannica, 2023)

In ancient Egypt, Pharaohs utilized monumental architecture like pyramids to symbolize their divine status, reinforcing their absolute power through these structures. Similarly, in Ancient Greece, the sophists and Aristotle's rhetoric—emphasizing logic (logos), credibility (ethos), and emotional appeal (pathos)—shaped early forms of persuasion and public discourse. These historical practices underline the foundational role of architecture and rhetoric in the early development of propaganda and public persuasion (Spalinger, 1996) (Hariman, 1986).

Sociologist Jacques Ellul emphasized that propaganda has a persuasive nature, and mostly preferred in the environment of politics. (Ellul, 1972) World Wars in the beginning

of 20th centuries brought comprehensive evolution including the “art” of propaganda. With the advancement of mass media, occupying print, radio and cinematography, nations on both sides during World War 1 initiated departments that were dedicated to propaganda. One of the first such departments was British War Propaganda Bureau in 1914. The Bureau’s objective was twofold: strengthen morale on the home front and vilify enemies to consolidate international support. The emphasis during conflict was on emotional appeals such as duty, honor, and fear. (Knightley, 2000) (Bernays, 1928)

During Cold World, the strategic use of propaganda by global powers like the Soviet Union and the USA played a crucial role in influencing public opinion and securing international alliances. Radio broadcasts were highly productive in terms of propaganda as they were the main source of news and information in each home. Simultaneously, films and cartoons due to their perception and ability to impress were exploited as much as it is possible because they simplified messages to their most elemental form, often reflecting the ideologies of the creators or commissioners. (Acosta, 2019) Through propaganda, these nations aimed not only to increase domestic support but also to extend their ideological reach, shaping the perceptions and allegiances of people worldwide. This manipulation of information underscored the power of propaganda.

Propaganda is a mixture of persuasion, control and communication that adapts to the times. (Hariman, 1986) Whether through monumental ancient art, rhetoric, or modern media, its aimed consistently to guide people’s beliefs and actions.

However, today’s modern conjecture in terms of digitalization and globalization gives propaganda all attributes of “manipulation toolkit” and used push agendas not only in political context. (Manaev, 2010) Particularly during the COVID-19 pandemic, misinformation has been proven to significantly impact public behavior and attitudes. A study by Enders highlighted the various forms of COVID-19 misinformation, noting its association with political ideologies, distrust in scientists, and the influence on individuals' willingness to engage in preventive measures like vaccination. (Enders, 2020) In modern times, the complexities of propaganda are exacerbated by the widespread use of social media and a general trust in unauthorized sources. A study by Nicholls and Yitbarek in the context of the COVID-19 pandemic found that trust in social media, as opposed to more authoritative sources, is associated with lower risk perception of COVID-19 and reduced adoption of preventive behaviors, including vaccination uptake. (Nicholls, 2022) This

highlights the significant influence of social media on public opinion and behavior, demonstrating the challenges in managing misinformation and propaganda today. The internet on one hand provides people with the opportunity to challenge established narratives, but on other hand internet gifted corporations and governments more complex tools to control public opinions on an unprecedented scale. (Tufekci, 2017)

Computational propaganda

Computational propaganda is a term that refers to the application of artificial intelligence, algorithms, and human supervision to affect and manipulate public opinion. (Woolley, 2016) The phenomenon of computational propaganda is linked with the widespread implementation of the internet and subsequent rise of social media platforms. The digital space created a favorable environment for the propaganda of specific information both genuine and misleading. Primary, social media platforms served as a conductor of information from one user to another, however with the advent of platforms like Facebook, Twitter etc., were created new opportunities for information dissemination. (Bradshaw, 2018).

Social media platforms became segmented, providing opportunities for people to unite and stay in information bubbles that conserve their beliefs and concerns. A big role in this situation belongs to the expansion of data analytics. Digital advertising tools that can mine user data helped create a specific algorithm of delivering specific narratives to segmented demographics, leading to customized and more dangerous forms of propaganda. Platforms established the conditions that empowered public figures, authorities, or huge businesses with ability craft targeted messages. (Marwick, 2017)

Woolley posits that despite the segmentation that exists within platforms, people still require some time to handle information whether its false or true, they seek for like-minded individuals on web, along the way, encountering evidence or refutation of information. (Woolley, 2016) This process allows people to find evidence that supports their views or challenges them, with group support playing a key role in deciding what they believe.

The rise of automated accounts, or "bot armies," has simplified the propagation of propaganda. These digital forces reduce the need to manually find supporters, creating a

false sense of widespread agreement or majority opinion on certain topics. This artificial boosting created profound implications for discourses, creating challenges in distinguishing between genuine consensus and manufactured consent. (Wolley, 2016)

As previously mentioned, computational propaganda employs a range of tools and mechanisms designed to influence public opinion, manipulate narratives, and spread misinformation on a scale. This section will explore these aspects in detail:

The importance of media literacy has become increasingly critical in preventing the propagation of misinformation and disinformation, especially in the context of computational propaganda. This phenomenon leverages digital strategies and technological advancements to manipulate public discourse and shape opinions within the online realm.

Bots (Automated accounts participating in online conversations):

Bots or Automated accounts are software applications designed to perform tasks autonomously online. Diving into the context of computational propaganda, bots are capable of posting, sharing, and commenting on content. (Wolley, 2016) The main purpose of such mechanisms is to amplify specific message or perspective, influencing narrative online. (Zhang, 2020)

Algorithms (Exploitation of user's data for content promotion):

All social media platforms in the early 2010s focused on advertisement tools that include algorithms that can recommend content to users according to their preferences. (Marwick, 2017) Despite the fact that companies such as X (Twitter), Meta (Facebook) invest in cyber-security their algorithms can easily be exploited to strategically promote or publish content with potent propaganda. campaign. (his work "Social media and fake news in the 2016 election" highlights that it is not necessary to hack code of algorithm or use external software, but it is enough to understand that content garnering likes, shares can be promoted more, allowing to conduct „legit" propaganda campaign.(Allcott, 2016) Zhang suggests that one of the examples is online platform called Weibo, where recommendation algorithms were adjusted to promote content with pro-government narrative. (Zhang, 2020)

Deepfakes (Manipulating media content to deceive people):

Deepfakes is a term that refers to hyper realistic digital manipulations of media's content, mainly videos. Advanced artificial intelligence techniques, especially deep learning algorithms are used to create or modify content in the way that it is difficult to be detected. Key aspect is that this technology can imitate the facial features and voice of individuals to falsify the initial message. (Chesney, 2019)

These technologies: bots, algorithms, and deepfakes, while initially developed for enhancing user engagement and capital for companies, have also become potent tools for political propaganda. They can be used to facilitate the spread of tailored narratives, potentially influencing public opinion and democracy itself. The dual-use nature of these digital tools underscores the complexity of the digital age, where advancements can serve both commercial interests and political agendas. Which again highlights the need for digital literacy and regulatory measures to mitigate their manipulative impacts on society.

Emotional content in misinformation and disinformation plays a crucial role in their dissemination. As Sander van der Linden's research suggests, such information, whether emotionally charged intentionally or by misunderstanding, can provoke specific reactions and influence beliefs (van der Linden, 2015).

Emotional content, especially that one that brings fear and outrage, is more likely spread quickly and broadly. Vosoughi supports this idea in his work "The spread of true and false news online" where the statistics regarding content spreading on social media was revealed. He discovered that false news stories on platforms like Twitter (currently called X) are 70% more likely to be reshared than true stories. The findings indicate that false information reached 1500 people six times faster than the truthful one. Key point of their findings is that those falsehoods were primarily tied with predominant feelings of surprise and disgust. (Vosoughi, 2018)

More supporting ideas come from Pennycook and his research, where he found out that people with more probability would share false headlines that align with their personal beliefs. Noticeable moments that provoking headline with emotional engagement shared approximately 20% more than neutral one.

Brashier and Marsh found that strong emotions, whether good or bad, make people more confident about false information being true, even after being corrected. Research

showed that if content carries emotions, it feels 15% more accurate for people who are involved in reading and resharing. (Brashier, 2020)

The tendency for emotionally charged misinformation and disinformation to spread rapidly highlights a fundamental aspect of human nature: our emotional responses can be powerful and are often more easily manipulated than our rational thought processes. Understanding the human tendency towards emotion can inform strategies to mitigate the impact misinformation and disinformation.

The structure and dynamics of society has changed in favor of fast communications and immediate consumption of information. Now information spreads with enormous speed and the time for reaction to information also has changed.

The Principe of social proof, described by Cialdini underscores the human natural tendency to look for guidance, especially in uncertain situations when clear solutions are not visible. (Cialdini, 1984) These behavioral tendencies moved to digital environment. Phenomenon deeply ingrained in human behavior and became clearly visible in digital era due to ease of expressing opinions. In the digital age, the social proof principle suggests individuals are more likely to accept information as true if it appears to be supported by the majority. When a piece of information, such as news or data, is widely accepted or shared, its perceived trustworthiness can increase, often irrespective of its factual accuracy. In context of information consumption, if flow of information like news or data is widely accepted or shared, its perceived credibility increases regardless of its actual veracity. (Friggeri, 2014)

“Eco chamber” is a term used to describe virtual spaces where individuals mainly interact with like-minded individuals, where they reinforce their own pre-existing beliefs and minimize the expose of alternative views. Pariser in his work highlighted the malicious nature of these information bubbles, suggesting that such information space strengthen falsehoods leaving minimum space for truth to seep in. (Pariser, 2011) Bakshy’s study complements this idea and demonstrates on example of such platforms like Facebook, that individuals like to expose and engage with the information that aligns with their ideological beliefs. (Bakshy, 2015)

Additional credit to information’s truthiness can be added, if figures with authority or label of trusted sources are spreading the information. A study by Pennycook revealed

that misinformation and its iterations are more likely to be believed and shared if it is exposed by celebrity or well-known public figures like politicians or speakers. (Pennycook, 2020)

The spread of false information is influenced by social behaviors and digital platform algorithms. The phenomenon of social proof highlights the necessity of individuals to be guided in uncertain situations aligning with prevalent opinions. All this contributes to information traps and viral hoaxes across social media. (Friggeri, 2014). Simultaneously, Digital environments, shaped by algorithms, tend to keep information within like-minded groups. (Pariser, 2011) (Bakshy, 2015). Furthermore, trusted figures and their potential authority elevates the credibility of information, giving the audience less reasons to apply critical thinking and check the validity of information. (Pennycook, 2020). Collectively these mechanisms emphasize the factors influencing people's perception of information and their ability to critically assess it.

3.2.3 Mitigation strategies

After exploring the importance of media literacy and the critical need for regulatory measures to prevent manipulation and propaganda in society, it is worth shifting focus towards methods for addressing misinformation and disinformation.
Media Information Literacy (MIL) is a set of necessary competences, such as knowledge, skills, and attitudes, aimed to help people in recognizing and combating misinformation and disinformation. (UNESCO, 2021) According to UNESCO spreading of MIL is crucial for favoring critical thinking and active citizenship. The initiative dedicated to MIL is called "The Global Media and information Literacy Week" and serves as a platform for stakeholders such as educators, policymakers, usual members of society etc., to discuss and exchange knowledge that would help in promotion of MIL. (UNESCO, 2021)

Core Elements of MIL:

1. Understanding Media and Information Providers: This element involves recognition of media's role in providing information, specifically, understanding under what agendas they conduct activities, what operations are involved in collecting data and what is the framework behind their system of spreading information. (Hobbs, 2010)

2. Critical Evaluation of Information: This includes development of skills in assessing information's reliability, validity, and credibility. It requires differentiating facts form opinions and identification of biases behind propagation of certain information. (Grandido, 2013)
3. Production of Information and Self-expression: MIL focuses on enabling society members to produce accurate and balanced information. (Hobbs, 2010)
4. Ethics, Rights, Responsibilities: This component is accountable for recognizing privacy concerns, intellectual property rights, and the potential implications of sharing of information. (Grandido, 2013)

Media and Information Literacy helps individuals in acquiring skills that help sift through vast of information on digital platforms and distinct between genuine information and misinterpretations as well as shed light on what are agendas propagated on media platforms and what frameworks are behind them.

It is already clear that the digital era brings a concern of misinformation and disinformation being spread with enormous speed on digital platforms. (Vosoughi, 2018)

The fact-checking process transformed as well and became collaborative, meaning that in today's reality it is necessary counter measure in terms of fighting fast spread of falsehood, especially on social media platforms. (Pennycook, 2020) For instance, collaborative fact-checking amplifies its effectiveness due to encouragement of partnership of different between different institutes. It pools resources and expertise in the veracity of statements made on social media platforms. (Pennycook, 2020)

Wardle in her report highlights that many social media platforms recognize the problem and try to fortify their defenses against the spread of falsehoods. Platforms initiate collaboration with third parties that provide services of fast checking with further implementation of algorithms that automatically sign potential misinformation and disinformation. (Wardle, 2017)

fight against misinformation and disinformation is not just the responsibility of social medias and fast-checking companies, but user's as well, because the stay as the first line of defense, meaning they are potentially first consumers of information whether false or not. (Moreira, 2019)

In summary, combating misinformation and disinformation in the digital era demands a multifaceted approach, involving not only collaborative fact-checking initiatives across various organizations but also individual responsibility. The proactive involvement of social media platforms and the critical vigilance of users form the cornerstone of an effective defense mechanism against the rapid spread of false information. This collective effort underscores the importance of maintaining autonomy and responsibility to prevent biases, ensuring a trustworthy information ecosystem.

Public Awareness

Public consciousness and education are foundational in instilling and enforcing the fight against misinformation and disinformation. Wardle posits that governments, institutions and civil society have a significant role in imparting this knowledge. (Wardle, 2017) “Prebunking” is a method that is introduced by Cook and Lewandowsky, which means when giving small doses of falsehood to individual under supervision of credible institute, may nurture the resistance to misinformation and disinformation. (Cook, 2017).

What institutions can conduct prebunking:

1. Educational Institutions: schools and universities can play a significant role in raising critical thinking and media literacy of students. The common technique could look like incorporation of prebunking into curricula, especially in subjects that are related to media literacy and critical thinking. (Banerjee, 2015)
2. Media Outlets: Journalism has a huge information distribution and responsibilities for information quality. When reporters expect false stories, they can tackle and correct them ahead of time in their articles (Cook, 2017).
3. Governments and Non-Government Organizations: Both institutions can run public awareness companies implementing MIL in their programs and initiatives. (Roozenbeek, 2019)

In general, institutions that have resources and possibilities can run such companies. Especially, those whose activity is tied with distribution of information and education, their duty to help is directly proportional to the responsibilities for spreading information.

3.3 Kazakhstan's relations with Russia and Ukraine

Kazakhstan: Domestic Issues

In 2022 Kazakhstan experienced significant social mobilization in its modern history. Those protests that took place in January 2022 were caused by deep-rooted problems that were carried through Nursultan Nazarbayev period of governance. The economic inequality, corruption, and unfulfilled promises of the government were the main drivers of the protests that spread all over major cities. (Kudaibergenova, 2022)

The beginning of protests started from immediate issues such as rapid increase of price of a gas and dissatisfaction with working conditions at local industrial enterprises in the same way it was occurring in cities such as Zhanaozen, Karaganda.

The protests have acquired a wider range of grievances, and the social mobilization indeed highlighted the systematic inequalities and governance failures in accomplishing promises about prosperity and welfare. Such reflected the deep-seated desire of people for substantial changes. (Kudaibergenova, 2022)

The protests led to changes within government and activated the processes of policy adjustments aimed to reduce the unrest and answering demands of protestors. After the events of January 2022, Kazakhstan experienced shifts in public opinion about political activism. Such led to increased political discourse among citizens, indicating growing consciousness and willingness for changes. However, despite the government's efforts to implement meaningful reforms and enhance transparency, its actions were met with scepticism, showing existence of challenges on pollical landscape. (Kudaibergenova, 2022) (Bekmagambetov, 2018)

Despite the social and political fluctuations inside the country, Kazakhstan could save its balanced multi-vector foreign policy, managing complex relations with major powers like Russia, China, EU and the rest western countries. Roberts, 2015) (Kudaibergenova, 2022) (Bekmagambetov, 2018)

Understanding the political situation in Kazakhstan is crucial for analysing and identifying sentiment of its citizens regarding Russia-Ukraine conflict. The January protests shifted public opinion and made people be more involved into political discussions. However, it's a recent event and people still carry scepticism and mistrust to the government despite already initiated reforms.

Kazakstan - Russia relations.

Kazakhstan and Russia historically share common background because of which both countries developed significantly important relations. Such deep historical ties are characterized by mutual strategic interest, frequent economic and diplomatic interactions. (Shibutov, 2019) (Shlapentokh, 2021)

According to Shibutov's investigation of political relations between Russia and Kazakhstan, both countries seem to maintain cooperation, however with different degree of involvement. (Shibutov, 2019) Russia in general less focused on relations with Kazakhstan, seeing cooperation with Kazakhstan as a part of regional priorities within concerns of CIS countries. On other hand, Kazakhstan prioritizes its relations with Russia stating in "Agreement on Good Neighbourly Relations and Alliance in the 21st century", that "The Republic of Kazakhstan will continue to strengthen relations with the Russian Federation in all spheres of political, trade, economic, cultural and humanitarian cooperation on the basis of the Agreement on Good Neighbourly Relations and Alliance in the 21st century". (Shibutov, 2019).

In terms of diplomatic relation, both countries set up embassies in several major cities of each other. Because of common historic background both countries have ethnic diasporas, and this situation does not force countries to cooperate, but strengthen diplomatic relations through culture and social aspects. (Shibutov, 2019)

Throughout independency period, Kazakhstan gained economic power by attracting investments by promotion of its multi-vector foreign policy underscoring the will to negotiate diplomatically, as well as focusing on oil and gas export. However, Kazakhstan's economic power is significantly smaller than its neighbour's Russia. Kazakhstan exports to Russia almost three time less than Russia exports to Kazakhstan. (Ybraev,2020) Due to such economic situation Kazakhstan forced to balance not only between Russia but China as well, focusing on establishing diplomatic and economic relations. (Shibutov, 2019) (Roberts, 2015)

As for the 2023, although, Kazakhstan kept following its multi-vector foreign policy and increased interaction with other global players such as US, EU, Kazakhstan remains in diplomatic relation with Russia, manifesting mutual interests in regional stability and prosperity. Nevertheless the economic dependency on Russian import and the fact that Russia is key ally in the region, Kazakhstan avoids expressing clear support for

Russian proposals on the world stage, including situation in Ukraine, preferring to refer to the priority of diplomacy and international territory treaties. (Yuneman, 2023)

Kazakhstan – Ukraine relations

Despite the special relations between Kazakhstan and Russia, Ukraine still has significant role in Kazakhstan's history. Ukraine and Kazakhstan as a part of Russian Empire and USSR carried throughout the history common wounds and tragedies. The war in Ukraine that followed right after January protest shocked Kazakhstan's society, brought challenges to Kazakhstani people in terms of identity and perception of Russia as an ally. (Dumoilin, 2023)

Kazakhstan as it was mentioned has a multi-vector foreign policy that aimed to build relations in a pragmatic way, rather than ideological. Such applies to all partners of Kazakhstan, but priorly to post-soviet countries. (Roberts, 2015) Pragmatic approach may seem challenging, especially when it comes to Kazakhstan - Ukraine relations. Both countries established balanced and strong diplomatic relations and presidents of both countries have direct conversations covering different aspects: social, economic etc. Recent conversation between president Tokayev and president Zelensky, where president Tokayev underscored Kazakhstan's to commitment to diplomatic solution of the war, may indicate that Kazakhstan is rather not supportive of Russia nor Ukraine, but sees the importance of stability in the region as it directly affects Kazakhstan's wellbeing that is tied on its multi-vector foreign policy. (Dumoilin, 2023) (Yuneman, 2023)

In terms of economic situation, Kazakhstan, Ukraine, Russia are three major players in Asia in terms of gas and oil export to European countries. Kazakhstan, nevertheless, does not have much significant direct routes which would deliver oil and gas to Europe, but used Russia's logistics to transport oil and gas. As the war started and Ukraine closed the pipes, Kazakhstan experienced challenges in oil gas export, however avoiding any accusation of Russia and Ukraine, sticking to searching for alternatives relying as it was mentioned on pragmatic relations with other partners. (Libman, 2022)

In general, on global stage, Kazakhstan is seeking for balanced mutually beneficial relations with partners and stating its commitment to diplomatic regulation of any issue appeared in the world. Such balancing act appeals to both Ukraine and Russia. According to Kazakhstan's officials, country is committed to territorial integrity and always consults

with West Partners in terms of following the rules of applied sanctions on Russia. (Dumoulin, 2023) (Yuneman, 2023).

The understanding of Kazakhstan's position in context of Russia – Ukraine war is very important for constructing frames for further research of prevalent views and sentiments among Kazakhstani people. Kazakhstan experienced two shocking events, one for domestic policy, second for foreign policy. Such also reminds people of Ukraine and Kazakhstan about common past.

3.4 Russia-Ukraine War: Events Overview

The main aim of this study is to reveal prevalent sentiments towards war that are held by people of Kazakhstan and compare the with discourse of national leaders. However, as the main topic is dedicated to infodemics and how misinformation, disinformation affects shaping public opinion during crisis, it is necessary to establish context within which the research is going.

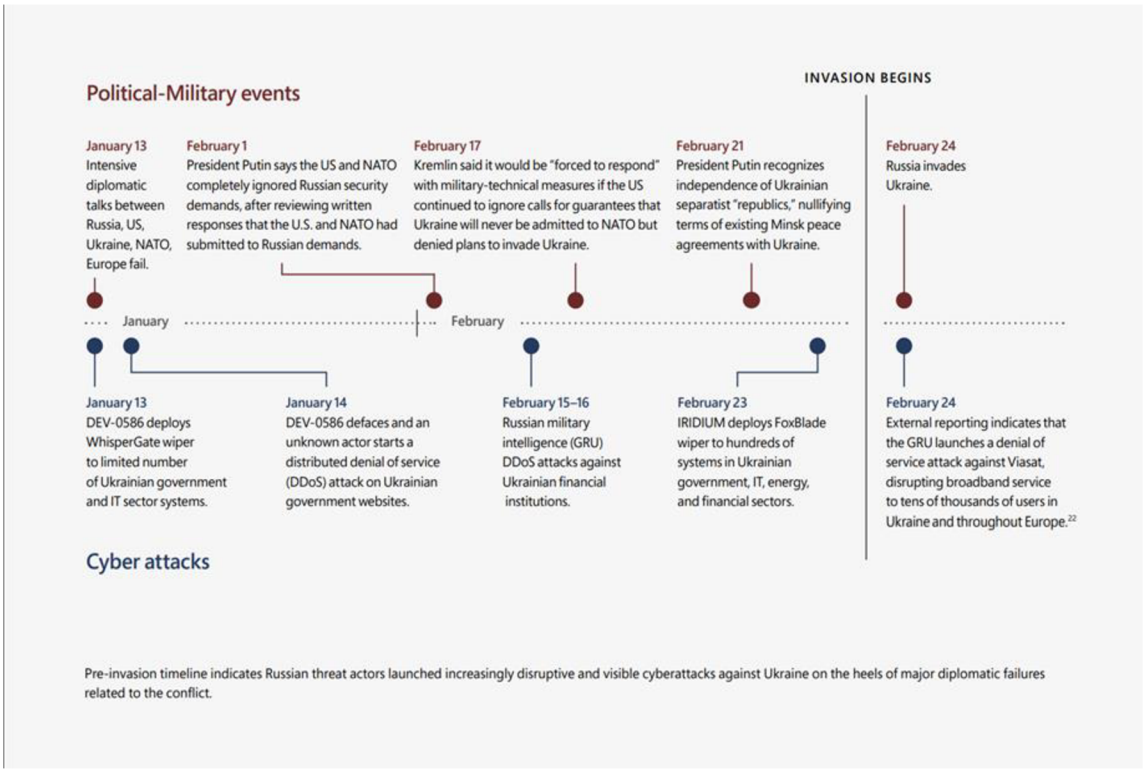
The Russia-Ukraine war is a modern conflict that has a hybrid nature. One side is the traditional operations on battlefield like infantry combat and bombing, another is information warfare, which is priorly aimed to disinform, destabilize the flow of information and call to emotions. The ongoing conflict evolved from crisis to the actual war. From 2014, Russia was noticed in conducting information warfare on different levels: damaging of critical information systems, weakening political and social structure, disinforming and manipulating public opinion. (Stanescu, 2022) (Oates. 2022)

In hindsight, the heightened utility of informational combat (in the Russo-Ukrainian context) in shaping public perception and influencing policymakers was made evident nearly a decade ago, during the conflict's very conception. 2014 was a critical year marked with a series of historical events whose impact and consequences reverberate within political talking points today. (Makhortykh, 2022).

On figure 1 and figure 2 are shown a detailed timeline of the significant events and cyberattacks that occurred during the escalation of the Russia-Ukraine conflict. Starting from January of 2022 and moving to April, there was an intensification in both cyber intrusions and military offensives. The first image outlines the political-military events, showing key moments where diplomatic talks failed, and information warfare tactics were

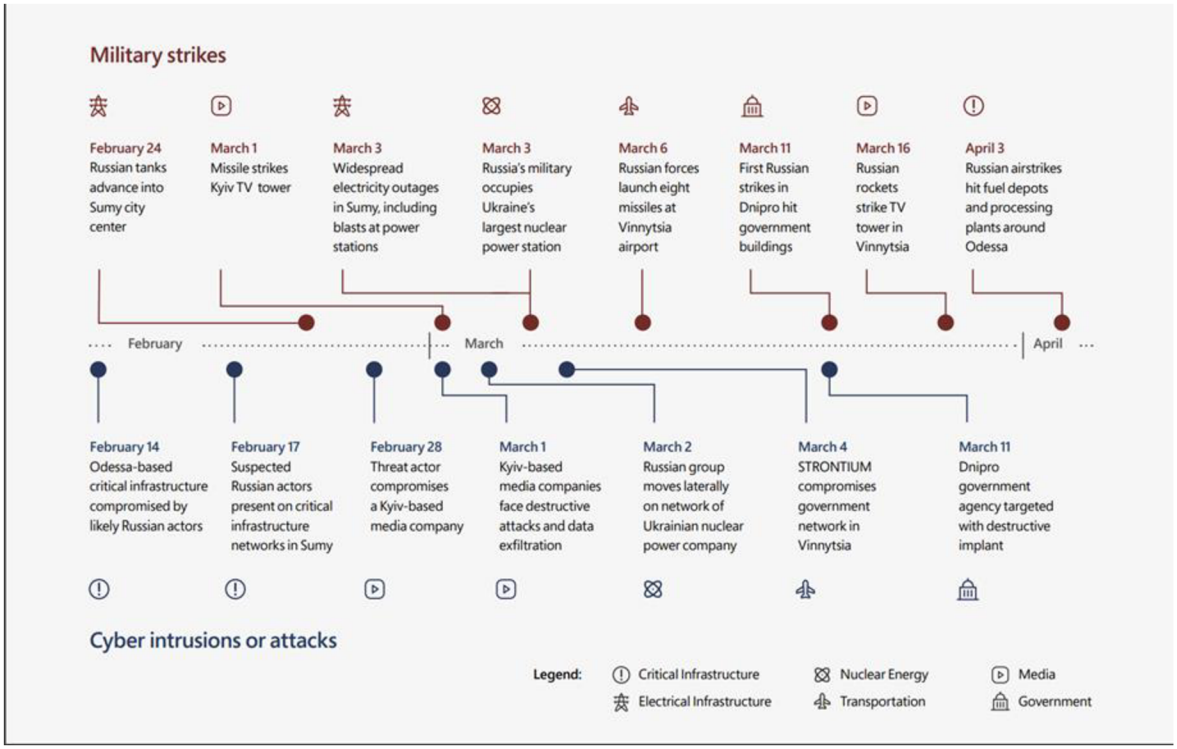
implemented. These cyberattacks targeted critical aspects of infrastructure and were timed around pivotal escalations in the conflict, such as the formal beginning of the invasion. The second image continues this narrative, pinpointing the strategic hits on critical infrastructure, electrical systems, and governmental networks. (Microsoft Digital Security Unit, 2022)

Figure 1 – Political – Military events in Ukraine.



Source: (Microsoft Digital Security Unit, 2022)

Figure 2 – Military strikes in Ukraine.



Source: (Microsoft Digital Security Unit, 2022)

In conclusion, these images illustrate a modern conflict where the interplay of cyber warfare and conventional military operations forms a new front line. This hybrid approach has not only become a defining feature of the Russia-Ukraine war but also a significant factor in shaping global discourse. The coordination and timing of cyberattacks with military strikes reveal a deliberate strategy to weaken the adversary both in the physical and information domains.

4. Practical Part

The practical part is aimed to provide comprehensive understanding of Kazakhstan's public opinion on the Russia-Ukraine war through structured surveys and sentiment analyses. The survey is designed and conducted by the author, aimed to thoroughly examine the collective perspectives of Kazakhstan's populace on the Russia-Ukraine conflict. It is also focused on uncovering dominant viewpoints and determining the key information sources used by citizens to stay updated on war events. Additionally, sentiment analysis is conducted to evaluate the tone and perspective of social media content. This method allows for a deeper understanding of the nuanced ways through which online interactions shape collective viewpoints regarding the war.

4.1 Survey

The survey was created by an author using Google Forms and took place between 15.10.2023 and 15.12.2023. The survey can be found in the appendix section of the thesis.

There are 4 categories of questions:

1. Demographic Information
2. Opinions on the Russia-Ukraine Conflict
3. Information Sources and Media Perception
4. Satisfaction with National Response

The questions were designed to be clear and straightforward to prevent any potential misinterpretation. Additionally, for some of the more general questions, detailed descriptions were provided to ensure respondents fully understood the intent of the question, eliminating any possibility of misunderstanding. In terms of answers, there were used three types of questions: multiple choice questions, Likert scale, dichotomous questions.

To enhance the quality and reliability of the data analysis, it is crucial to ensure that all participants are from Kazakhstan. Therefore, the author included a specific question, "Are you a citizen of Kazakhstan?" in the survey. Additionally, to confirm that participants are of legal age, a question regarding age is asked, excluding individuals under 18 or those from countries other than Kazakhstan. These measures are implemented to improve the overall quality and accuracy of the analysis.

The ethical aspects such as voluntary participation and confidentiality of respondents were considered and executed during the survey. The survey was done anonymously, and respondents were warned about the purpose of the research.

Limitations

During this research, several limitations have been identified and acknowledged by the author. The survey engaged 125 participants, a sample size that, while insightful, may not fully encapsulate the broad spectrum of public opinion across Kazakhstan, thus potentially limiting the generalizability of the findings. Because the survey was conducted online through Google Forms, it may have missed capturing a broader range of views from groups without internet access. The survey is focused on sensitive issues which can lead to participants giving answers they think are more acceptable to society instead of what they truly believe. Also, because the survey was done between October 15, 2023, and December 15, 2023, the results reflect the specific events and feelings of that time, which might not represent longer-lasting opinions.

Despite these limitations, the author and is aware of the limitations and has made an effort to decrease their impact as much as possible, aiming to provide a comprehensive and nuanced understanding of the public opinion in Kazakhstan regarding the Russia-Ukraine War.

4.2 Dataset

Figure 3 - Dataset from the survey.

	Are_you_a_citizen_of_Kazak...	Age	Sex	Occupation	sentiment_towards_the_Rus...	How_informed_are_about_the_war	s...	How_do_you_perceive_the_role_of_Kazakhstan_in_the_war	i...	What_source	Which_countries_cover_events_in_Ukraine_less_bias	c...	Are_you_satisfied_with_Kazakhstans_response
1	Yes	18-24	Male	Student	Supportive	Medium awareness	No	Neutral	Yes	Online news websites	Kazakhstan	Yes	High level of satisfaction
2	Yes	35-54	Male	Employed - Private Sector	Opposed	High awareness	Yes	Neutral	Yes	Social media	Abroad (USA, EU, Australia, etc.)	Yes	Medium level of satisfaction
3	Yes	35-54	Female	Self-Employed	Opposed	Low awareness	Yes	Supportive of Ukraine	No	Social media	Abroad (USA, EU, Australia, etc.)	No	High level of satisfaction
4	Yes	35-54	Male	Employed - Private Sector	Supportive	High awareness	Yes	Supportive of Russia	No	TV news channels	Ukraine	Yes	Low level of satisfaction
5	Yes	Above 55	Male	Employed - Private Sector	Opposed	Medium awareness	Yes	Neutral	No	Social media	Ukraine	Yes	High level of satisfaction
6	Yes	35-54	Male	Unemployed	Opposed	Medium awareness	No	Supportive of Ukraine	No	TV news channels	Russia	No	Medium level of satisfaction
7	Yes	18-24	Female	Student	Neutral	Low awareness	No	Neutral	No	Social media	Kazakhstan	Yes	Medium level of satisfaction
8	Yes	18-24	Male	Student	Opposed	High awareness	Yes	Supportive of Ukraine	No	Social media	Kazakhstan	No	High level of satisfaction
9	Yes	18-24	Male	Student	Neutral	High awareness	Yes	Neutral	Yes	Social media	Abroad (USA, EU, Australia, etc.)	Yes	High level of satisfaction
10	Yes	35-54	Male	Employed - Private Sector	Opposed	High awareness	Yes	Neutral	Yes	Online news websites	Abroad (USA, EU, Australia, etc.)	Yes	High level of satisfaction
11	Yes	25-34	Male	Self-Employed	Opposed	High awareness	Yes	Neutral	Yes	Social media	Abroad (USA, EU, Australia, etc.)	Yes	High level of satisfaction
12	Yes	Above 55	Male	Employed - Private Sector	Opposed	Medium awareness	Yes	Neutral	Yes	Online news websites	Ukraine	Yes	High level of satisfaction
13	Yes	18-24	Male	Student	Opposed	High awareness	No	Neutral	Yes	Social media	Ukraine	Yes	High level of satisfaction
14	Yes	25-34	Female	Employed - Private Sector	Opposed	Medium awareness	No	Neutral	Yes	Social media	Abroad (USA, EU, Australia, etc.)	Yes	High level of satisfaction
15	Yes	25-34	Female	Self-Employed	Opposed	Medium awareness	No	Supportive of Ukraine	Yes	Online news websites	Abroad (USA, EU, Australia, etc.)	Yes	Medium level of satisfaction
16	Yes	35-54	Male	Self-Employed	Neutral	High awareness	No	Supportive of Ukraine	Yes	Online news websites	Abroad (USA, EU, Australia, etc.)	Yes	High level of satisfaction
17	Yes	Above 55	Female	Retired	Neutral	Medium awareness	No	Supportive of Ukraine	Yes	Social media	Abroad (USA, EU, Australia, etc.)	Yes	Medium level of satisfaction
18	Yes	25-34	Female	Unemployed	Neutral	Medium awareness	No	Neutral	No	TV news channels	Abroad (USA, EU, Australia, etc.)	Yes	High level of satisfaction
19	Yes	25-34	Female	Self-Employed	Opposed	Low awareness	No	Neutral	No	Social media	Abroad (USA, EU, Australia, etc.)	No	High level of satisfaction
20	Yes	18-24	Female	Student	Neutral	High awareness	No	Neutral	No	Social media	Abroad (USA, EU, Australia, etc.)	Yes	High level of satisfaction
21	Yes	25-34	Male	Student	Opposed	Low awareness	Yes	Neutral	Yes	Social media	Kazakhstan	Yes	Medium level of satisfaction
22	Yes	35-54	Female	Self-Employed	Opposed	Medium awareness	No	Neutral	No	Online news websites	Kazakhstan	No	Medium level of satisfaction
23	Yes	35-54	Female	Unemployed	Neutral	Medium awareness	No	Neutral	No	TV news channels	Russia	No	Medium level of satisfaction
24	Yes	35-54	Male	Employed - Private Sector	Opposed	Low awareness	Yes	Neutral	Yes	Social media	Abroad (USA, EU, Australia, etc.)	Yes	Medium level of satisfaction
25	Yes	35-54	Female	Self-Employed	Opposed	Low awareness	No	Neutral	Yes	Social media	Abroad (USA, EU, Australia, etc.)	No	Medium level of satisfaction
26	Yes	25-34	Male	Employed - Private Sector	Supportive	High awareness	No	Supportive of Russia	Yes	TV news channels	Russia	No	High level of satisfaction
27	Yes	Above 55	Male	Retired	Supportive	High awareness	No	Supportive of Russia	No	TV news channels	Russia	Yes	Low level of satisfaction
28	Yes	35-54	Female	Self-Employed	Neutral	Low awareness	Yes	Neutral	No	Social media	Abroad (USA, EU, Australia, etc.)	Yes	High level of satisfaction
29	Yes	18-24	Female	Unemployed	Opposed	High awareness	Yes	Supportive of Ukraine	No	Social media	Abroad (USA, EU, Australia, etc.)	Yes	Low level of satisfaction
30	Yes	18-24	Male	Student	Supportive	High awareness	Yes	Supportive of Russia	No	Social media	Russia	Yes	Low level of satisfaction
31	Yes	25-34	Female	Employed - Public Sector	Neutral	Medium awareness	No	Neutral	Yes	Online news websites	Kazakhstan	No	High level of satisfaction
32	Yes	35-54	Male	Employed - Private Sector	Opposed	Low awareness	Yes	Neutral	Yes	Paper prints and magazines	Kazakhstan	No	Low level of satisfaction

Source: Own calculation

The dataset from the survey is shown in figure 1. After preparing the data, which included organizing and categorizing certain variables for better understanding, the study compiled a dataset with answers from 125 participants. This dataset features 13 distinct variables, each corresponding to a survey question, chosen to shed light on the research questions. For analyzing the survey data, SPSS Statistics will be used because it is excellent software for survey analysis, and it is also the software that the author had access to.

4.3 Preliminary analysis

For the preliminary analysis, examining the frequency table is suggested as it is effective in identifying the patterns and trends within the data, making it a strategic start for a deeper exploration into the sentiments and perspectives held by the respondents.

Several expectations have been established regarding the distribution of survey responses, detailed as follows:

1. Most respondents are likely to oppose the Russian justification for the invasion of Ukraine.

2. Participants are expected to be well-informed about the Russia-Ukraine War due to Kazakhstan's close relations with both countries.
3. A larger portion of the survey population may report the war has directly affected their lives.
4. Responses are anticipated to lean towards neutrality regarding Kazakhstan's role in the war.
5. Many respondents are likely to feel that their leaders' statements about the war align with the public opinion in Kazakhstan.
6. Social media is expected to emerge as the main source through which respondents stay informed about the war.
7. Respondents are likely to trust Kazakhstani media for unbiased and truthful coverage of the Ukraine events.
8. There is an expectation that respondents are aware of the significant role social networks have in influencing public opinion on the war.
9. Respondents are assumed to agree with Kazakhstan's response to the Russia-Ukraine war.

Table 1 - Frequency table - What is your overall sentiment towards Russian justification for invasion in Ukraine.

What is your overall sentiment towards the Russian justification for invasion to Ukraine?

		Frequency	Percent	Valid Percent
Valid	Neutral	38	30.4	30.4
	Opposed	71	56.8	56.8
	Supportive	16	12.8	12.8
	Total	125	100.0	100.0

Source: Own calculation

The table 1 presents survey data on people's sentiments regarding the Russian justification for the invasion of Ukraine. The sentiment in that case are the various justifications provided by President Putin, including a response to a request for help from Donetsk and Lugansk, allegations of genocide, and the stated goals of demilitarization and denazification in Ukraine.

- There are 38 people (30,4%) who feel neutral.

- 71 people (56,8%) are opposed to the justification.
- 16 people (12,8%) are supportive of it.

The survey findings show a strong opposition among respondents to Russia's reasons for invading Ukraine. This mirrors with a report by Reuters from 17.05.2023 indicating a predominant neutrality (nearly 60%) among Kazakhs toward the war, yet with a significant and growing portion opposing Russia's actions. (Reuters, 2023) According to this survey results, there is a noticeable rise in opposition, highlighting possible evolving public sentiment towards the conflict and Russia's justifications.

Table 2 - Frequency table - How well informed do you feel about the Russia-Ukraine War?

How well-informed do you feel about the Russia-Ukraine war?

		Frequency	Percent	Valid Percent
Valid	High awareness	66	52.8	52.8
	Low awareness	21	16.8	16.8
	Medium awareness	38	30.4	30.4
	Total	125	100.0	100.0

Source: Own calculation

Table 2 presents survey data on respondents' self-assessment of their knowledge about the Russia-Ukraine conflict. The levels of awareness are divided into three categories: "High awareness," "Low awareness," and "Medium awareness."

- 66 individuals (52,8%) believe they have a high awareness of the situation.
- A smaller group of 21 respondents (16,8%) acknowledge a low level of awareness.
- The remaining 38 participants, (30,4%), consider themselves to have medium awareness.

The data suggests that over half of the participants consider themselves well-informed on the subject, indicating a high level of interest and knowledge in the conflict among the respondents. Meanwhile, a smaller yet significant portion of the group feels less informed, with medium to low awareness.

Table 3 - Frequency table - Has the Russia-Ukraine war had a direct impact on your personal life?

Has the Russia-Ukraine war had a direct impact on your personal life?

		Frequency	Percent	Valid Percent
Valid	No	68	54.4	54.4
	Yes	57	45.6	45.6
	Total	125	100.0	100.0

Source: Own calculation

Table 3 displays survey responses to the question of whether the Russia-Ukraine war has had a direct impact on the respondents' personal lives. The responses are categorized as "Yes" or "No."

- Most of the respondents, 68 in number (54,4%), report that the war did not have a direct impact on their personal lives.
- The remaining 57 respondents (45,6%) state that the war has indeed had a direct impact on them.

This suggests that while a significant number of people do feel a direct impact, there is a slightly larger group that perceives the war as having no immediate effect on their day-to-day life.

Table 4 - Frequency table - How do you perceive the role of Kazakhstan in the Russian-Ukrainian war?

How do you perceive the role of Kazakhstan in the Russian-Ukrainian war?

		Frequency	Percent	Valid Percent
Valid	Neutral	68	54.4	54.4
	Supportive of Russia	24	19.2	19.2
	Supportive of Ukraine	33	26.4	26.4
	Total	125	100.0	100.0

Source: Own calculation

Table 4 presents results on how participants view Kazakhstan's role in the Russia-Ukraine war, with the responses categorized as "Neutral," "Supportive of Russia," and "Supportive of Ukraine."

- The largest group, 68 respondents (54,4%), perceive Kazakhstan's role as neutral.
- 24 respondents (19,2%) believe that Kazakhstan is supportive of Russia.
- 33 participants (26,4%) feel that Kazakhstan is supportive of Ukraine.

The survey data suggesting that a majority of respondents perceive Kazakhstan's role in the Russia-Ukraine conflict as neutral, with a notable portion leaning towards support for Ukraine, and a minority for Russia. That aligns with reported events in Kazakhstan, specifically instances of public protests the invasion of Ukraine occurring without governmental interference, which indicates a level of public discontent with Russia's actions. (Askar, 2022)

Table 5 - Frequency table - Do you think that the statements of the national leaders of Kazakhstan about the war reflect public opinion?

Do you believe the discourse of Kazakhstan's national leaders on the war reflects public opinion?

		Frequency	Percent	Valid Percent
Valid	No	53	42.4	42.4
	Yes	72	57.6	57.6
	Total	125	100.0	100.0

Source: Own calculation

Kazakhstan's leadership has taken a series of actions in response to the Russia-Ukraine war, including upholding territorial integrity and not recognizing breakaway regions, providing humanitarian aid to Ukraine, and making efforts to diversify economic ties and oil export routes to reduce reliance on Russia. (Zanini, 2022) Table 5 displays whether respondents believe that those actions align with public opinion. The results are as follows:

- 72 respondents (57,6%) believe it does reflect public opinion.

- 53 respondents (42,4%) do not believe that the national leaders' discourse on the war reflects public opinion.

This data could suggest that the leaders' public positions on the conflict are more in harmony with the sentiments held by the majority of the survey's participants.

Table 6 - Frequency table - In your opinion mass medias of which countries cover events in Ukraine less biasedly and more truthfully?

In your opinion mass medias of which countries cover events in Ukraine less biasedly and more truthfully?

	Frequency	Percent	Valid Percent
Abroad (USA, EU, Australia, etc.)	66	52.8	52.8
Kazakhstan	31	24.8	24.8
Russia	18	13.6	13.6
Ukraine	10	8.0	8.0
Total	125	100.0	100.0

Source: Own calculation

Understanding where individuals primarily get their information is crucial for catching the basis of their beliefs and the narratives they are exposed to, as the sources influence public understanding and opinion about the war. For instance, as detailed by the American University's School of International Service, the choice of what stories to cover and what photos or videos to show can significantly impact public perception about war. (Minges, 2023) the table 6 provides the information how do people trust more when it comes to covering the events in Ukraine:

- The majority, 66 respondents (52,8%), consider media from abroad (including the USA, EU, Australia, etc.) to be the least biased and most truthful in covering the events in Ukraine.
- Kazakhstani media is considered less biased and truthful coverage by 31 respondents (24,8%)
- 18 respondents (13,6%) view Russian media as less biased and more truthful.
- Ukrainian media are seen as less biased and more truthful only by 10 respondents (8,0%).

The survey indicates that people tend to trust international media more for coverage of global events, like the war in Ukraine. People might prefer news from other countries because they see it as fairer and more trustworthy. This view comes from the belief that these media sources are neutral and have a history of getting their facts right, making them seem more reliable (Pew Research Center, 2018). Or it could also be because people found that in the past, they have proven to be accurate and fair, thereby enhancing their reputation for reliability.

Table 7 - Frequency table - What source of information do you use to stay informed about the war?

What source of information do you use to stay informed about the war?

		Frequency	Percent	Valid Percent
Valid	Online news websites	27	21.6	21.6
	Paper prints and magazines	3	2.4	2.4
	Social media	71	56.8	56.8
	TV news channels	24	19.2	19.2
	Total	125	100.0	100.0

Source: Own calculation

The provided table 7 breaks down the preferred sources of information that individuals use to stay informed about war:

- Social media emerges as the most popular source, with 71 respondents (56,8%) using it.
- Online news websites are chosen by 27 individuals (21,6%) of the respondents.
- Television news channels are used as the information source by 24 respondents (19,2%).
- Traditional print media like newspapers and magazines are least utilized, with only 3 individuals (2.4%) turning to them.

The survey results highlight a strong preference for digital and social platforms, with social media being the most common source. Traditional print media is the least favored. The trend suggests that accessibility and real-time updates are key factors in media consumption during wartime events. It was found out that during times of conflict or crisis, people often turn to media platforms that can provide immediate and up-to-date

information. This is particularly true for younger audiences who tend to prefer online and social media over traditional media sources due to the quick and interactive nature of digital platforms. (Eddy, 2022).

Table 8 - Frequency table - Are you satisfied with Kazakhstan's national response to the Russia-Ukraine war?

Are you satisfied with Kazakhstan's national response to the Russia-Ukraine war?

		Frequency	Percent	Valid Percent
Valid	High level of satisfaction	76	60.8	60.8
	Low level of satisfaction	23	18.4	18.4
	Medium level of satisfaction	26	20.8	20.8
	Total	125	100.0	100.0

Source: Own calculation

The table 8 summarizes survey responses on satisfaction with Kazakhstan's national response to the Russia-Ukraine war:

- 76 respondents (60,8%) express a high level of satisfaction.
- 23 respondents (18,4%) report a low level of satisfaction.
- 26 respondents (20,8%) indicate a medium level of satisfaction.

Out of 125 participants, a clear majority is satisfied with Kazakhstan's response to the conflict. This might mean people support how the country is trying to handle things carefully. However, there is still a diversity of public sentiment regarding international affairs and national policy.

Table 9 - Frequency table - Do you think that social networks played a significant role in shaping public opinion in Kazakhstan about the Russian-Ukrainian war?

Do you think that social media played a significant role in shaping public opinion in Kazakhstan about the Russo-Ukrainian War?

		Frequency	Percent	Valid Percent
Valid	No	34	27.2	27.2
	Yes	91	72.8	72.8
	Total	125	100.0	100.0

Source: Own calculation

Table 9 shows the perceptions of individuals on whether social media was influenced the views public regarding the Russo-Ukrainian War.

- 34 respondents (27.2%) believe that social media did not play a significant role.
- A much larger number, 91 participants (72.8%), think that social media did play a significant role.

The findings that a majority view social media as a significant influencer of public opinion in Kazakhstan regarding the Russo-Ukrainian War align with research from Stanford University. It was highlighted that social media is not only documenting conflicts, but it also influences international public opinion. This underscores the dual role of social media platforms as not only news providers but also as potential shapers of public opinion.

In the begging of preliminary analysis, several expectations were determined. It was correctly predicted that a majority would oppose the Russian justification for invasion, that people view themselves as well-informed, and recognize social media as a primary information source. However, expectations regarding the direct impact of the war on respondents and the trust in Kazakhstani media were less accurate, revealing that people's feelings and how they get information are more complex than what was first expected.

This blend of expected and surprising findings underscores the nuanced understanding of public opinion within Kazakhstan, provide a foundational understanding of the current sentiments within Kazakhstan.

4.4 Fishers exact test

The information from the previous chapter lays a solid foundation for examining whether various factors are related to each other. This investigation is focused on examining if there is any correlation between variables that the author is interested in, for instance whether there is relation between the sources of information individuals use and their sentiments towards the Russo-Ukrainian War. To explore these relationships, the next step involves hypothesis testing, with Fisher's exact test due to the small dataset.

The table provided contains details on the tested hypotheses, the resulting p-values from the analysis, and conclusions about the presence or absence of significant relationships based on these p-values.

Table 10 – Hypothesis testing - Fishers exact test

Number	Hypothesis	p-value	Conclusion
1	Age and how well-informed people feel about war are related.	0,206	There is no significant relationship.
2	Sex and how informed people are about war are related.	0,09	There is no significant relationship.
3	Age and source of information are related.	<0,001	There is a significant relationship.
4	Sex and direct impact on personal life are related.	0,017	There is a significant relationship.
5	Sex and Source of information are related.	0,018	There is a significant relationship.
6	Source of information that people use, and sentiment held by people of Kazakhstan towards Russian justification of war are related.	<0,001	There is a significant relationship.

7	Source of information that people use and the satisfaction with Kazakhstan's response to war are related.	0,011	There is a significant relationship.
8	How informed people are about war and whether they are satisfied with Kazakhstan's response are related.	<0,001	There is a significant relationship.
9	Sentiment held by people of Kazakhstan towards Russian justification of war and whether they are satisfied with Kazakhstan's response are related.	<0,001	There is a significant relationship.

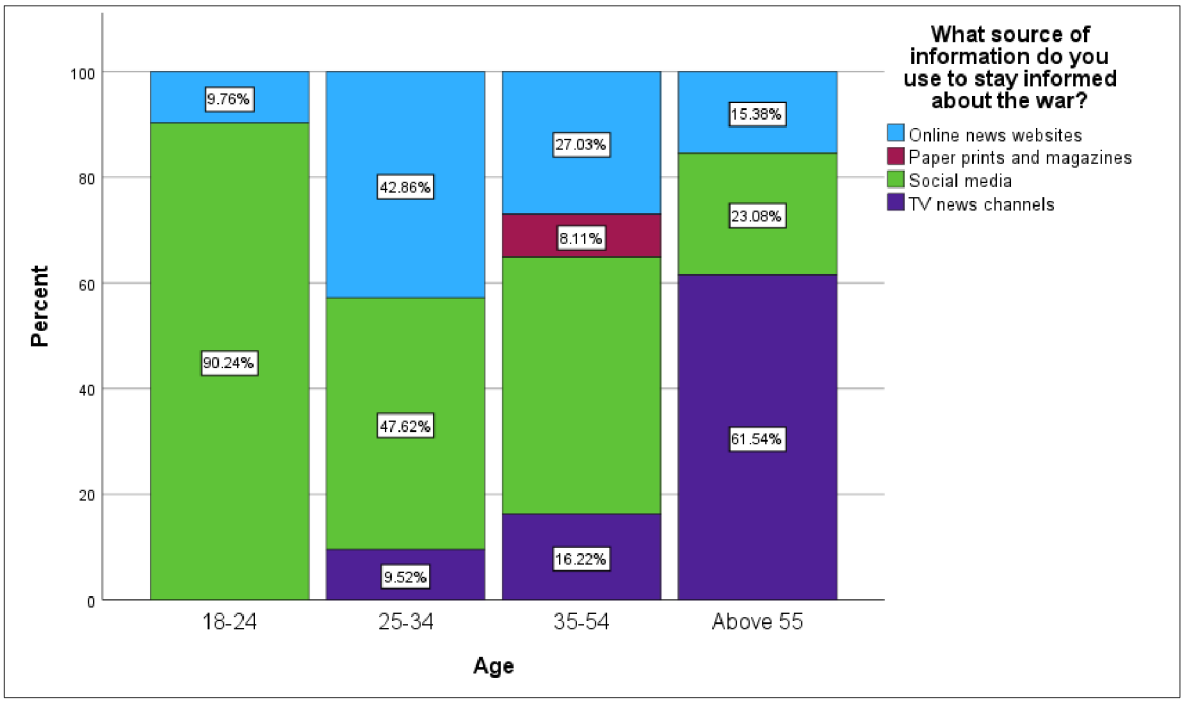
Source: Own calculation

The analysis revealed that certain variables are indeed related. Specifically, it was found that there is a relationship between: age and the source of information, gender and the direct impact on personal life, the source of information and sentiment towards the Russian justification of the war, the source of information and perception of Kazakhstan's role in the Russia-Ukraine conflict, the source of information and satisfaction with Kazakhstan's response to the war, and how informed individuals are about the war and their satisfaction with Kazakhstan's response.

Understanding these relationships is important as it informs further analysis of the proportions within the relationship. It is possible to dive deeper into how different demographics interact with information and how this affects the perceptions and attitudes towards the war. This next step in the analysis will examine these proportions in detail, uncover more specific insights and trends.

The relationship between Age and Source of information.

Bar chart 1 – Age X What source of information do you use to stay informed about the war?



Source: Own calculation

The previous chapter highlighted the dominance of social media as a source of information for the younger generation. However, it is equally important to understand the preferences of the older generation. Bar chart 1 provides this insight by showing that:

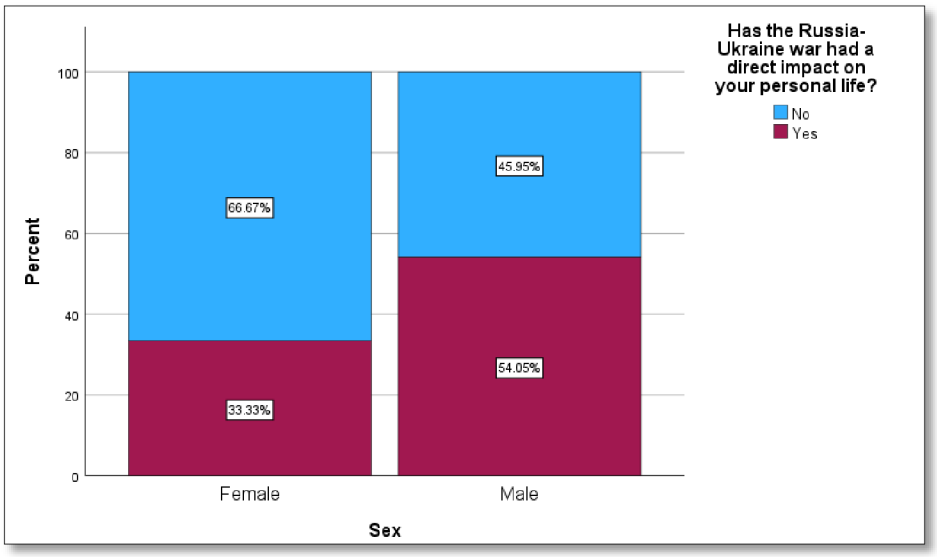
- The first group, 18-24-year-olds, predominantly use social media (90,24%) to stay informed, with a very small percentage relying on online news websites (9,76%).
- The 25-34 age group shows a more distributed media consumption, with social media still being the most used source (47,62%), followed by online news websites (42,86%), and smaller percentages for TV news channels and paper prints.
- Those aged 35-54 have an even distribution between social media (27,03%) and online news websites (27,03%), with a notable portion using TV news channels (16,22%) and a smaller percentage turning to paper prints and magazines (8,11%).
- The above 55 group differs significantly, with the majority getting their news from TV channels (61,54%). The use of social media is used less in this group (23,08%), with online news websites being used by an even smaller fraction (15,38%).

The data indicates that while social media is a commonly used source of news across all age groups, there is a distinct generational division in preference. The younger

demographic shows a heavy use of social media, while the older generation, despite their reliance on television channels, also incorporates social media into their news consumption, with almost a quarter of them engaging with these platforms. This blend of media usage highlights the persistence of traditional media, particularly television, among older age groups.

The relationship between Gender and Impact on personal life

Bar chart 2 – Sex X Has the Russia-Ukraine war had impact on your personal life?



Source: Own calculation

The bar chart 2 shows the percentage of individuals by gender who feel the Russia-Ukraine war had a direct impact on their personal lives:

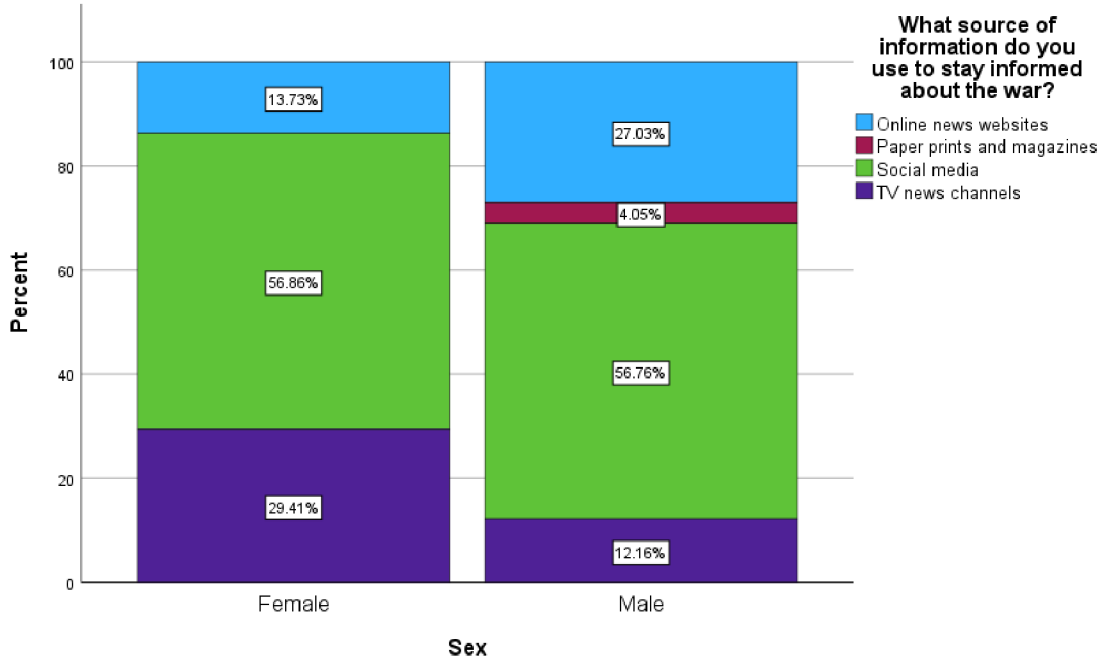
- Among females, a smaller portion, 33,33%, state that the war has directly affected their lives, while a larger group, 66,67%, report no direct impact.
- For males, over half, 54,05%, report a direct impact from the war, compared to 45,95% who do not.

Men may report a higher personal impact from the war for several reasons. They might be more involved in sectors like military service or jobs related to international relations. Social expectations can also play a part, with men often feeling they should be informed about political issues. Additionally, men and women might view the risks of war differently based on societal norms and personal experiences. The upcoming analysis will explore the media preferences of different genders, aiming to understand which sources

may influence the perception that the war impacts personal lives in Kazakhstan. This will help to potentially uncover why females may report a lesser personal impact from the war, offering insights into the role of media in shaping public sentiment towards the conflict.

The relationship between Sex and Source of information

Bar chart 3 – Sex X What source of information do you use to stay informed about the war.



Source: Own calculation

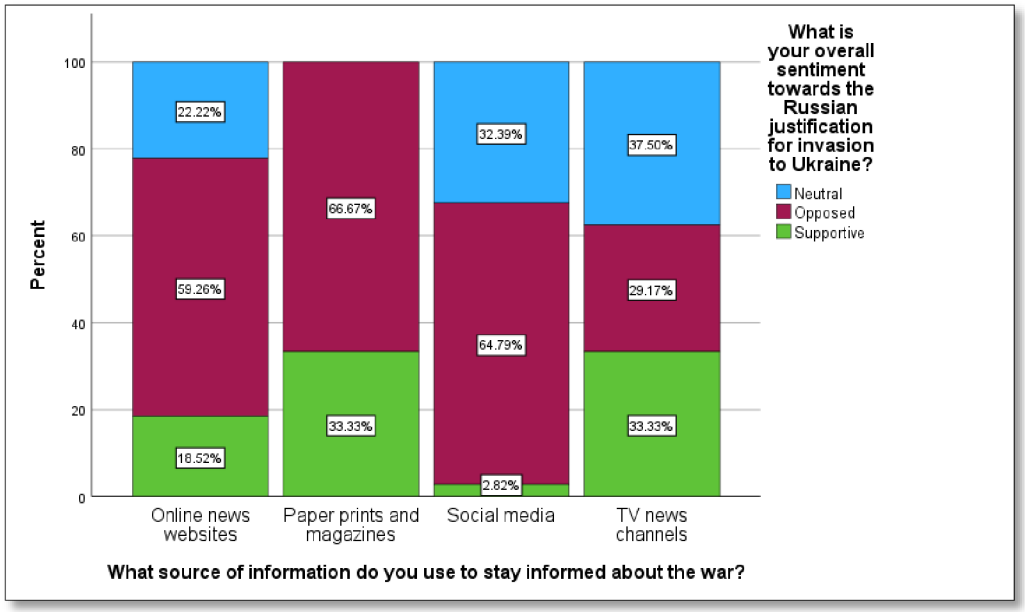
The bar chart 3 reflects the sources of information used by different genders to stay informed about the war, which can indeed support the findings from the previous analysis regarding the impact of the war on personal lives and the relationship with information sources.

- Among females, the largest portion, 56.86%, use social media to stay informed about the war. Online news websites are the next most common source at 29.41%, followed by TV news channels at (13,73%).
- For males, social media is also the most popular source (56,76%), but there's a higher percentage that relies on online news websites (27,03%) compared to females. TV news channels are used by a smaller fraction (12,16%), and paper prints and magazines are the least used source at (4,05%).

The predominance of social media as a primary news source across both genders aligns with the global trend of digital media consumption. However, is the preference for TV news among females, which could suggest that the format provides a sense of reliability or comfort, possibly influencing their perception of the war's impact as less direct. It could be that the controlled environment of TV broadcasting offers a buffer against the overwhelming nature of digital media, where news are more immediate and raw. Understanding these media choices and their emotional impacts can offer valuable insights into public sentiment and the communication of war-related news.

The relationship between Source of information and Sentiment held by people of Kazakhstan towards Russian justification of war.

Bar chart 4 - What source of information do you use to stay informed about the war? X What is your overall sentiment towards Russian justification for invasion in Ukraine?



Source: Own calculation

The bar chart 4 illustrates the sentiment towards Russian justification for the invasion of Ukraine based on different sources of information:

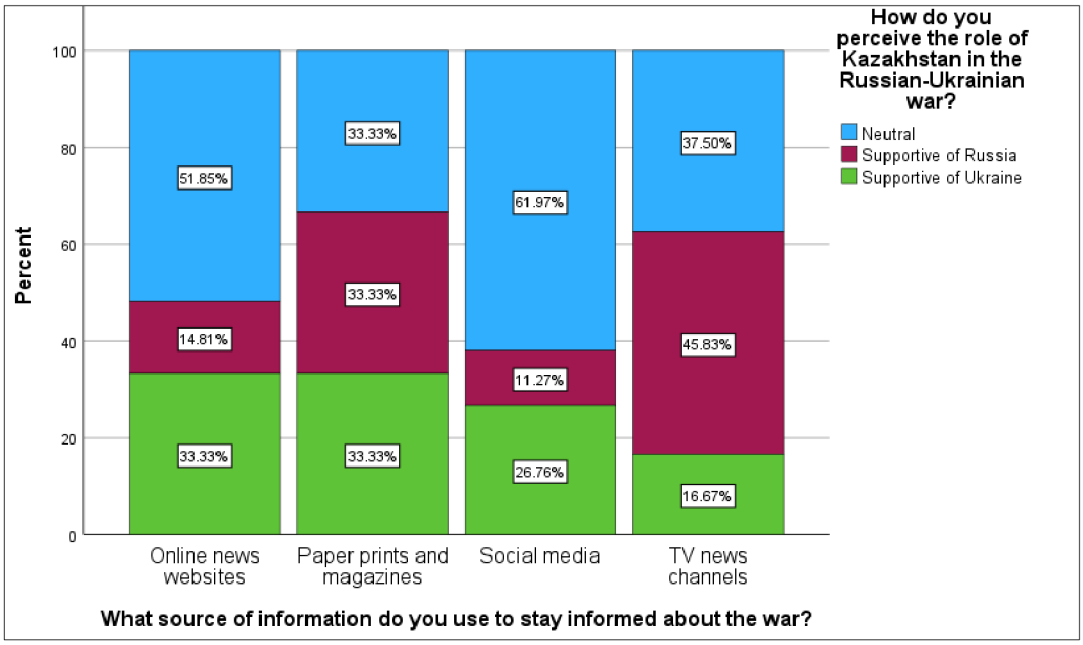
- Online news website users are mostly opposed (59,26%), with some supportive (18,52%) and fewer neutral (22,22%).

- Paper prints and magazines readers show a majority opposition (66,67%), minimal support (0%), and some neutrality (33,33%).
- Social media users are mainly opposed (64,79%), with a notable amount of support (29,17%) and very few neutral stances (2,82%).
- TV news channel viewers are the most supportive (37,50%), with equal percentages of opposition and neutrality (33,33%).

The bar chart indicates that individuals who read paper prints show the greatest opposition to the Russian justification for the invasion of Ukraine, while those who rely on TV news channels experience a higher level of support. This could imply that TV news, as previously discussed, might present information in a manner that could lead viewers to be more accepting or understanding of the Russian position in the conflict. Conversely, sources like online news may shape opinions towards supporting Ukraine.

The relationship between Source of information and How do perceive the role of Kazakhstan in the Russian-Ukrainian war

Bar chart 5 - What source of information do you use to stay informed about the war? X How do you perceive the role of Kazakhstan in the Russian-Ukrainian war?



Source: Own calculation

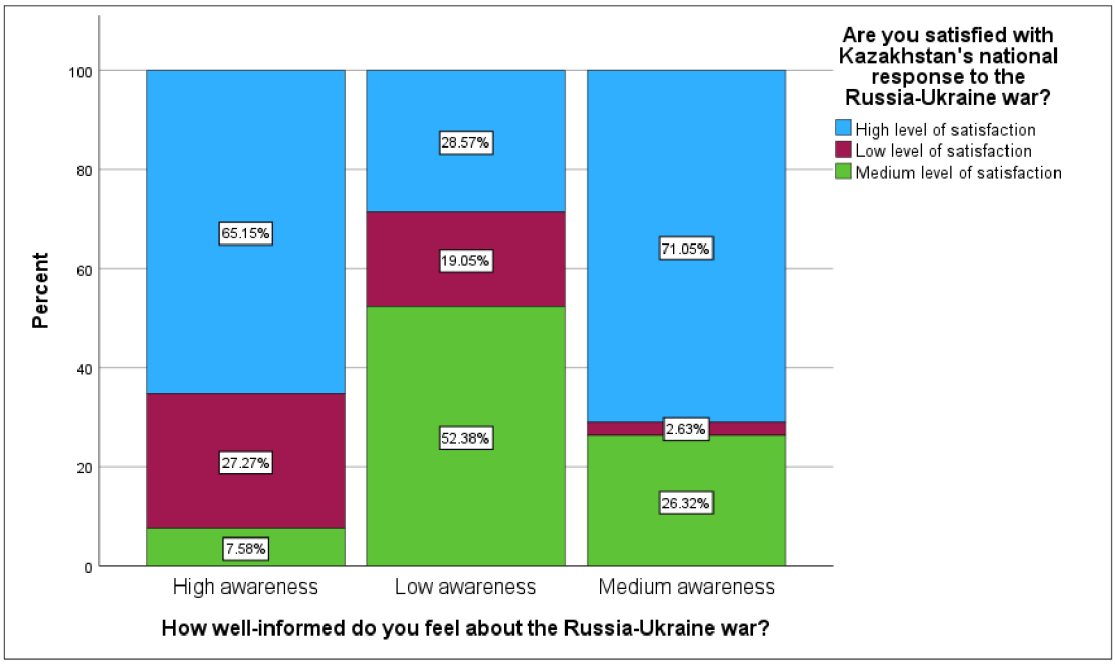
The bar chart 5 shows the link between where people get their news on the war and how they see Kazakhstan's role in it.

- Online news website users mostly see Kazakhstan as neutral (51,85%), with fewer supportive of Russia (14,81%) or Ukraine (33,33%).
- Paper print readers have an equal split between neutral and supportive of Ukraine (33,33% each), with supportive of Russia also represented (33,33%).
- Social media users predominantly view Kazakhstan as supportive of Ukraine (61,97%), with fewer neutrals (11,27%) and some supportive of Russia (26,76%).
- TV news watchers are divided, with a considerable number seeing Kazakhstan as supportive of Russia (45,83%), some neutral (37,50%), and fewer supportive of Ukraine (16,67%).

Users of online news sites mostly see Kazakhstan as neutral. Readers of print media are split evenly across views. Social media users mainly see Kazakhstan as backing Ukraine, while TV viewers are more likely to see the country as backing Russia. These trends might tell us how different media could shape public views on Kazakhstan's involvement in the war.

The relationship between How well-informed people feel about war and How well they are satisfied with national respond of Kazakhstan are related.

Bar chart 6 - How well informed do you feel about the Russia-Ukraine War? X Are you satisfied with Kazakhstan's national response to the Russia-Ukraine war?



Source: Own calculation

The bar chart 6 connects how informed people feel about the Russia-Ukraine war with their satisfaction regarding Kazakhstan's response:

- Those highly aware are mostly satisfied (65,15%), with some less satisfied (27,27%) and very few neutral (7,58%).
- Respondents with low awareness are mostly unsatisfied (52,38%), with some satisfied (28,57%) and fewer neutral (19,05%).
- With medium awareness, most are neutrally satisfied (71,05%), with fewer satisfied (2,63%) and unsatisfied (26,32%).

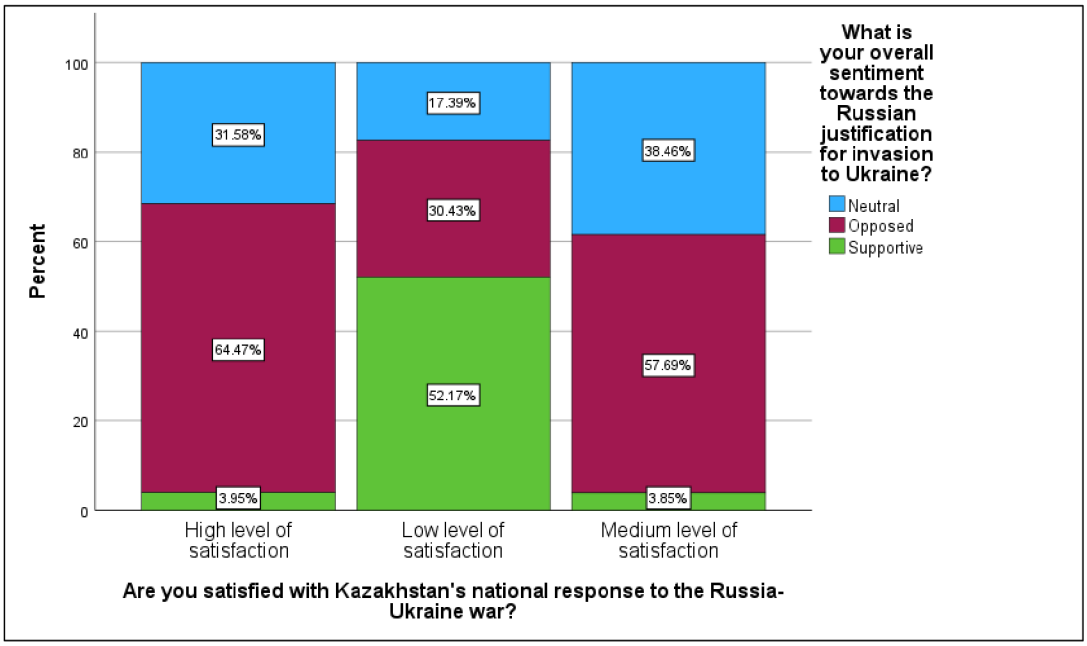
The survey responses might reflect public dissatisfaction due to Kazakhstan's neutral approach towards the Russia-Ukraine war. If people in Kazakhstan have strong opinions about the conflict, they might prefer to pick a side instead of staying in the middle Individuals who support Russia or Ukraine might expect Kazakhstan to take a clearer side in favor of their preferred side, leading to varying satisfaction levels with Kazakhstan's balanced decisions.

Or this could be due to the completely different reason as was mentioned before many people feel like the war had a direct impact on their life, they might not agree with how Kazakhstan is dealing with it. They might think their government should do more or

do things differently. But if they don't feel the war is changing their life, they might be okay with how things are. This shows what people go through in their private life can change what they think about their country's choices.

The relationship between Sentiment held by people of justification of war and How well they are satisfied with national response of Kazakhstan are related.

Bar chart 7 - Are you satisfied with Kazakhstan's national response to the Russia-Ukraine war? X What is your overall sentiment towards Russian justification for invasion in Ukraine?



Source: Own calculation

The 6 bar chart's results highlighted why some people are dissatisfied with Kazakhstan's response to the war. The bar chart 7 brings the insights on how individuals' overall sentiment towards Russia's justification for invading Ukraine with their satisfaction to response to the conflict:

- Those who are highly satisfied with Kazakhstan's response show a majority opposing Russia's justification (64,47%).
- Respondents with a low level of satisfaction mostly support Russia's justification (52,17%).

- Participants with a medium level of satisfaction are largely neutral towards Russia's justification (57,69%).

This could be view as supporting the theory that those who do not agree with Russia's actions are likely to be satisfied with Kazakhstan's diplomatic stance, as it aligns with their view against the invasion. Conversely, those who support Russia's justification might be less satisfied with Kazakhstan's response, possibly expecting stronger support for Russia's actions. The medium satisfaction group's neutrality might reflect uncertainty or mixed feelings about both Kazakhstan's response and the justification for the invasion.

The findings derived from Fisher's exact test and bar charts can be summarized as:

Younger individuals predominantly use social media, while older demographics show a higher reliance on television news.

Gender differences can influence the perceived personal impact of the war, with men more likely to report a direct effect on their lives than women.

Satisfaction with Kazakhstan's response to the war is closely linked to the information source, suggesting that media channels may have an impact on individuals.

The degree to which individuals feel informed about the war correlates with their satisfaction with Kazakhstan's national response, indicating that better-informed citizens are generally more satisfied.

The source of information plays almost shapes sentiments towards Russia's justification for the war. Those who rely on online news websites tend to oppose Russia's stance, whereas TV news viewers show more support.

4.5 Sentiment analysis

As it was found out with the help of the frequency analysis, social media is the most used source to get the news on the war events, that is why in crucial to find out the sentiment of social media content to get the understand the formation of narratives regarding Russia-Ukraine war in Kazakhstan. Sentiment analysis serves as a vital method for this purpose, as it is a computational technique employed to determine the emotional

tone behind and the attitudes in an online mention, social media post, or any piece of text. (Shivanandhan, 2020) The typical structure of a label map is divided into three categories: positive, neutral, and negative. (Haselmayer, 2017)

Despite, political shifts occurred in Kazakhstan due to January protests, Kazakhstan still tends to be considered autocratic state where presidents manage almost all aspects of politics and especially news media activities. As for 2013 Kazakhstan had 182nd place out of 196 other states in terms of press freedom, without significant shifts in 2024. (Beisembayeva, 2013) (Freedom House, 2024). That is why the author proceeded with a chosen telegram channels as scope of research and platform via which officials promote their discourse, even though those media state their independence and unbiasedness.

Sentiment analysis for the practical part was applied to evaluate social media post on Telegram related to key events such as the announcement of the Special Military Operation and the beginning of active invasion of Ukraine by Russia. That is the reason why the analysis is only focused on posts from the date 24.02.2022. The beginning of the invasion represents a critical moment with high emotional and political impact. Such may reveal the initial reactions, shifts in public opinion and how media frame narratives. It is especially useful for comparing public opinion with official narratives.

Limitations of the sentiment analysis.

Due to the sensitive nature of research's topic, it is crucial to establish limitations of the sentiment analysis as a qualitative approach, such as:

- Dynamic nature of language: The discourse and the ways opinions are reflected in social media evolve rapidly, which requires frequently updating NLP model.
- Sarcasm and Irony: NLP model may struggle in identifying both figures of speech and may lead to misclassification of sentiment.
- Lack of context: NLP model while used for sentiment analysis must be trained on specific data that aligns with the context of the research.
- Data privacy and protection: while conducting sentiment analysis, it is necessary to follow terms and conditions of social media, and not to violate the rights and privacy of users.

Mitigation strategy

Sentiment analysis requires a complex approach and consideration of many factors such as the choice of pre-trained NLP model, defining the scope of content that supposed to be analyzed, mitigation with limitations.

The choice felt on Telegram due to the following reasons:

- Telegram provides free overview of the channels via the official website tgstat.com.
- Telegram is positioned as the social media that prioritizes privacy and anonymity of users, therefore the chances to get the most unfiltered insights is higher.
- Typical way the news media structures their post in telegram are short texts and transcripts, which simplifies the process of sentiment analysis.
- Telegram to the simple and user-friendly UI allows quick manual navigation through posted content.

4.6 Sentiment analysis procedure

Here are the public channels on the Telegram and the reasons for selecting these specific channels:

1. @margulanseissembai is a public blog that is run by Margulan Seissembayev, a notable public figure and entrepreneur. He was included in the list of top 50 most influential businessmen of Kazakhstan according to the Forbes. His insights potentially offer a blend of business advice and opinion that could influence public sentiment regarding the war. Number of subscribers – 167773.
2. @tengrinews represents a well-established news media channel, that operates in Kazakhstan since 2010. Covers diverse news including social life, politics, and sport. Including this account in the analysis guarantees coverage of mainstream media viewpoints. Number of subscribers – 76495.
3. @zakonkz started as a platform for legal professionals and has since become a reputable source for diverse news, including significant political developments. Including this channel allows for an examination of the war's narrative from a more analytical and possibly critical standpoint. Number of subscribers – 144156.

4. @orda_kz – new news outlet media that operates from 2020. Covers diverse news including social life, politics, and sport. It captures the sentiment from newer media sources, which might have different editorial stances and influence among younger or more digitally connected audiences. Number of subscribers – 166,942

Selecting these Telegram channels is crucial also because they're known for being independent and regularly posting about current events. This approach is key for sentiment analysis, helping to highlight differences between what officials say and what the public thinks.

The choice of NLP model:

As the posts and content are in Russian language, therefore the NLP model that navigates within Russian language is needed. For conducting sentiment analysis was chosen 'blanchefort/rubert-base-cased-sentiment-rusentiment', was selected for its specific advantages, including training on the Russian language and optimized fine-tuning for sentiment analysis tasks. It recognizes emotional nuances through letter casing and is designed for the informal nature of social media text. Its availability on the Hugging Face Transformers library facilitates easy integration and further customization. ("blanchefort/rubert-base-cased-sentiment-rusentiment," n.d.)

The author manually gathered and sorted the content relevant to the topic, distinguishing between actual content, quotes, and transcripts. This process of selecting authentic posts allows to define prevailing sentiments in media coverage of specific events.

The Python programming language and Visual Studio Code were selected as the primary tools for constructing the model. This choice was made due to Python's widespread use in data analysis and machine learning, along with Visual Studio Code's versatile features for coding and friendly UI.

The model constructed with Python incorporates several libraries for various functions: *pandas* for data manipulation, *transformers* for accessing pre-trained NLP models, *torch* for tensor operations and as a requirement for *transformers, re* for text preprocessing using regular expressions, and *string* for managing string constants, also

used in text preprocessing. These libraries collectively facilitate the development and implementation of the model, emphasizing their roles in handling data, model operations, and preprocessing tasks.

Text data is preprocessed through the following steps:

- Lowercasing all text to standardize the input.
- Removing URLs and email addresses to clean the text.
- Stripping out punctuation using the string library's punctuation constant.
- Replacing multiple spaces with a single space.

The Python code for sentiment analysis within Visual Studio Code is outlined in the appendix part of the thesis. This code is structured to process and analyze text from selected Telegram channels, to understand the media and portray the Russia-Ukraine conflict. The results are merged into a table 11 highlighting authentic content derived from this analysis.

Table 11 - Telegram channels sentiment scoring table.

Post_№	channel_tag	Sentiment	Score
1	@margulanseissembai	NEGATIVE	0.905518532
2	@margulanseissembai	NEGATIVE	0.786785245
3	@margulanseissembai	NEUTRAL	0.946913183
4	@tengri news	NEUTRAL	0.504074693
5	@tengri news	NEUTRAL	0.995614886
6	@tengri news	NEGATIVE	0.620211065
7	@zakon kz	NEUTRAL	0.98959595
8	@zakon kz	NEUTRAL	0.995944202
9	@zakon kz	NEUTRAL	0.996701539
10	@zakon kz	NEUTRAL	0.925048172
11	@zakon kz	NEUTRAL	0.947798252
12	@orda_kz	NEUTRAL	0.996701539
13	@orda_kz	NEUTRAl	0.968740761

14	@orda_kz	NEUTRAL	0.983843148
15	@ztb_qaz	NEUTRAL	0.960367978
16	@ztb_qaz	NEUTRAL	0.648424149
17	@ztb_qaz	NEUTRAL	0.754833102
19	@newsnurkz	NEUTRAL	0.995544732
20	@newsnurkz	NEGATIVE	0.88149929

Source: Own calculation

On the table 11 the confidence score is referred to probability with which model predicts specific outcome in terms of sentiment. The closer confidence score is to 1, the more confident model about data or text containing one or another sentiment.

Table 10 indicates that the sentiment analysis predominantly identified the sentiments as neutral, with a few instances of negative sentiment. The absence of positive sentiment in the results could reflect the objective and impartial tone often adopted by news outlets, particularly on politically sensitive topics like the Russia-Ukraine conflict.

Some of the posts, such as post 2, post 6 and post 16 have confidence score less than 75%, which indicates low confidence in calculated sentiment. As it was mentioned above, that may occur to several limitations including dynamic nature of language, sarcastic expressions, irony, or lack of context.

The Python script designed for determining the predominant sentiment within each Telegram channel is detailed in the appendix section of the document. The process involved examining the collective sentiment scores from individual posts within each Telegram channel to establish the most common sentiment used by each channel.

Table 12 - Overall sentiment evaluation for the Telegram channels.

channel_tag	Sentiment	Average_Score
@margulanseissembai	NEGATIVE	0.846151888
@newsnurkz	NEGATIVE	0.88149929
@orda_kz	NEUTRAL	0.983095149
@tengri news	NEUTRAL	0.74984479

@zakon kz	NEUTRAL	0.964596644
@ztb_qaz	NEUTRAL	0.787875076

Source: Own calculation

The resulting table 12 organizes this data, showing the average sentiment score next to the corresponding channel, giving a clear indication of the overall sentiment tendency—whether it is neutral or negative. The sentiment analysis results, seem to align with the nature and content style of the channels analysed, notably:

- @margulanseissembai: negative sentiment could correlate with its role as a personal blog, platform for sharing thoughts of one individual, the sentiment is prevalently negative with score of 0,85 indicating very high confidence in calculated sentiment. Or maybe because the Margulan Seissembai was noticed in interaction with Ukraine journalists and activist, his attitude is supportive to Ukraine. (forbes.kz)
- @newsnurkz: sentiment is negative with a very high score of 0,88. Such a situation could occur due to the partial quotation of Vladimir Putin's speech that contained emotional phrases such as „Circumstances require us to take decisive and immediate action etc.
- @orda-kz and @zakon_kz –have the prevalent sentiment as neutral with confidence score of 0,98 and 0,96 respectively, aligning with what one would expect from independent news outlets. This neutral sentiment typically reflects an fact-based reporting, steering clear of emotive or biased language.
- @tengri_news and @ztb_q has prevalent sentiment as neutral however with lower score than previous two channels: 0,75 and 0,78 respectively. This could point to a mix of objective reporting and some degree of subjective expression in their coverage.

In summary, the results from the sentiment analysis suggest a significant inclination towards neutral sentiment across several Telegram channels, with instances of negative sentiment primarily associated with personal blog-style channels and those featuring emotionally charged political content.

5. Results and Discussion

The findings from the frequency analysis and exploration of bar charts offer profound insights into the dynamics of public sentiment regarding the Russia-Ukraine conflict among Kazakhstan's population. The frequency analysis reveals a significant majority of respondents strongly disagree with Russia's reasons for the invasion, reflecting a worldwide trend of questioning what Russian authorities say. This predominant opposition suggests an engagement with the conflict, which might be because of Kazakhstan's geopolitical position and its historical and socio-political ties with both Russia and Ukraine.

Diving into people's thoughts on Russia's reasons for the conflict and how satisfied they are with Kazakhstan's response, gives a deeper view of how well public opinions match up with government actions. People who don't agree with Russia's justifications tend to support the government's careful approach to not pick sides. It shows that they might see this neutrality as a wise move, keeping Kazakhstan in a balanced position diplomatically.

On the flip side, those who support or have neutral feelings for justification of show different levels of satisfaction with Kazakhstan's response. This reveals a complex picture of public expectations: while some people value the diplomatic balance, others might seek a more assertive position, reflecting a broader range of views and beliefs within the society about Kazakhstan's involvement in the conflict.

Furthermore, there's a clear correlation between how informed individuals feel about the war and their satisfaction levels with the national response. Those who consider themselves well-informed are more likely to express satisfaction, possibly reflecting confidence in understanding the nuanced stance Kazakhstan has taken. In contrast, those who admit to a lower understanding of the conflict often express dissatisfaction.

This underlines the need for open communication between the government and its citizens. It stresses the importance of making decision-making processes and communications transparent, aiming to make citizens feel their voices are heard and valued. Moreover, it shines a spotlight on the media's role not only in educating the public but also in fostering spaces for dialogue and contemplation on such vital matters. Engaging

with these diverse viewpoints can enrich the policymaking process, promoting more inclusive strategies that resonate with the public's varied perspectives and concerns.

The differences in how people feel based on where they get their news further enriches understanding how public opinions form during international conflicts. Specifically, individuals who relying on digital platforms digital platforms like social media and news websites show a strong disagreement with Russia’s actions. This strong disagreement comes from the diverse and unfiltered nature of information available on these platforms, which includes many different perspectives, viewpoints and challenges that question official statements. And it was also found out that the preference for digital platforms is among younger demographics, especially those aged 18-24, not only points to a generational shift in media habits but also suggests that the youth may be more opposed to Russia's justifications for the conflict.

As people age, there is a noticeable shift towards more traditional media sources such as television- a medium often criticized for being easily influenced by the government - usually show more support or neutral feelings towards Russia's reasons for its actions.

This difference in news consumption and the resulting differences in opinion highlight the crucial role media plays in shaping public opinion. The generational divide in media habits underscores that younger individuals are likely to be exposed to and influenced by a broader range of narratives and critical perspectives on international events.

Given the pivotal role of digital platforms as the primary source of information for many, especially among the youth, understanding the sentiment expressed by these platforms becomes crucial. The sentiment analysis revealed a prevalent neutral sentiment in public Telegram channels that belong to big media outlets in Kazakhstan, indicating that the content that covered events of beginning of the invasion was objective and contained factual language. The Kazakhstan’s social political landscape coped with Kazakhstan’s commitment to balanced multi-vector foreign policy, shows that state’s officials do not engage into contextual political discussions regarding ccorrectness or rightness of Russia-Ukraine war, instead, they refer to international treaties and territorial integrity, highlighting the importance of diplomacy.

Such observations once again emphasize the critical need for media literacy in contemporary society. As individuals navigate an increasingly complex information environment, being able to critically assess, analyze, and understand the nature of certain narratives is very important, as well as getting several perspectives on the specific event.

6. Conclusion

As the world witnesses the ongoing the Russia-Ukraine war, the insights from this research offer a valuable understanding of Kazakhstan's national reaction on both public and official level, simultaneously uncovering challenges of information flows in digital space. Kazakhstan's strategic diplomatic silence reflects a balancing act between old alliances and the need for regional stability. Rooted in a rich post-Soviet history and complex geopolitical loyalties, the people of Kazakhstan exhibit a nuanced engagement with the conflict, primarily driven by desires for a cautious approach towards international alliances and treaties. Public opinion, while aligned with the discourse of officials to some extent, there is a noticeable skepticism towards official narratives, indicating a desire among some citizen for Kazakhstan to take a more certain or oppositional ground.

The thesis also uncovered the significant influence of digital media, particularly social media in forming public opinions. Understanding the sentiment of social media channels is key to fully comprehending the reactions of the public towards any conflict. This underscores the necessity for media literacy, empowering individuals to discern information from misleading content. It is especially reliable in context of autocracies where media outlets transmit only point of view of state officials.

However, this research faces limitations such as time constraints, limited resources, and the scope of the study being tied to a bachelor's degree project. These factors mean the project has more of an illustrative purpose than offering a complete picture of Kazakhstan's sentiment towards the war. Responses from non-citizens and minors were excluded to better focus on the target demographic, although the ideal number of respondents was not reached due to these constraints.

The author emphasizes the importance of open dialogue between the government and its citizens, especially on critical issues like the Russia-Ukraine conflict. It highlights the potential of digital platforms as tools for facilitating communication, enabling the government to directly engage with public concerns and sentiments. It advised for further research to explore the nuances of public sentiment, and assessing the impact of governmental communication strategies, as they can provide valuable insights into how societies navigate complex geopolitical situations.

7. References

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8. Appendix

The Survey

The questions and answer options in the study were written in Russian and English in one Google form. The following questionnaire contains only English version of questions and answer options.

Name of the survey: "Kazakhstan's Perspective: Survey on the Russia-Ukraine Conflict."

Questions:

1) Are you citizen of Kazakhstan?
- Yes
- No

2) Age
- 0-17
- 18-24
- 25-34
- 35-54
- 55-above

3) Sex
- Male
- Female

4) Occupation
- Student
- Employed-Private sector
- Employed-Public/Government sector
- Self-Employed
- Retired

- Unemployed
- Other:___

5) What is your overall sentiment towards Russian justification (24.02.2022) for invasion in Ukraine?

- Supportive
- Neutral
- Opposed
- Other:___

Description:

Rationale for the request for help: Putin said the invasion was a response to a request from Donetsk and Lugansk for help against Ukrainian military activities.

Allegation of genocide: Putin argued that people in these regions needed protection from what he called humiliation and genocide at the hands of the Ukrainian government.

Statement on demilitarization and denazification: Putin stated that the goal was demilitarization and the elimination of alleged Nazi elements in Ukraine.

Putin, V. (2022, February 24). Announcement of special military operation in Ukraine. Retrieved from: http://kremlin.ru/events/president/news/67843/videos

6) How well informed do you feel about the Russia-Ukraine War?

(Likert's scale;1=Not informed, 5=Very well informed)

- 1
- 2
- 3
- 4
- 5

7) Has the Russia-Ukraine war had a direct impact on your personal life?

- Yes
- No
- Other:___

8) How do you perceive the role of Kazakhstan in the Russian-Ukrainian war?

- Neutral
- Supportive of Russia
- Supportive of Ukraine
- Other___

9) Do you think that the statements of the national leaders of Kazakhstan (Example: Speech of the President at SPIEF-2022, Statement of the Prime Minister on the diversification of oil exports bypassing Russia, etc.) about the war reflect public opinion?

- Yes
- No
- Other:___

10) What source of information do you use to stay informed about the war?

- Social Media
- Online news websites
- TV news channels
- Paper prints and magazines
- Other:___

11) In your opinion mass medias of which countries cover events in Ukraine less biasedly and more truthfully?

- Kazakhstan
- Russia
- Ukraine
- Abroad (USA, EU, UK, Australia etc)
- Other:___

12) Do you think that social networks played a significant role in shaping public opinion in Kazakhstan about the Russian-Ukrainian war (Example: spreading fakes, misinforming the population, countering disinformation, etc.)?

(Likert's scale;1=No influence at all, 5=Extremely influemtial)

- 1
- 2

- 3
- 4
- 5

13) Are you satisfied with Kazakhstan's national response to the Russia-Ukraine war?

(Likert's scale; 1=Completely dissatisfied, 5=Completely satisfied)

- 1
- 2
- 3
- 4
- 5

Description:

Non-recognition of Donetsk/Lugansk: Supports the principle of territorial integrity, does not recognize breakaway regions. Tokaev, K, SPIEF-2022.

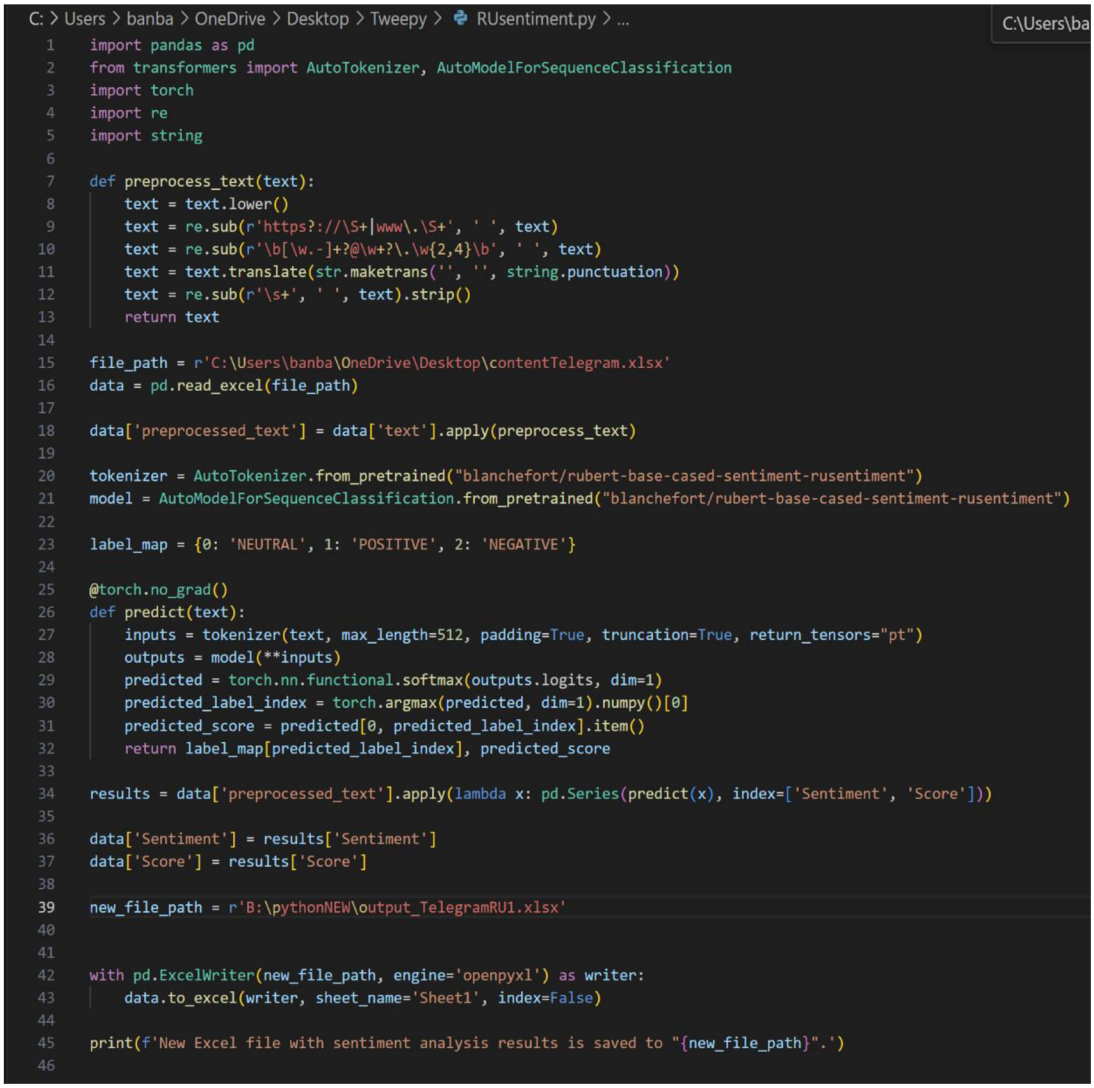
Humanitarian assistance: Assistance provided to Ukraine. The Astana Times (2022) "Kazakhstan Sends First Humanitarian Aid Plane to Ukraine Through Poland". https://astanatimes.com/2022/03/kazakhstan-sends-first-humanitarian-aid-plane-to-ukraine-through-poland/

UN vote: Kazakhstan abstained from adopting UN resolutions condemning the Russian invasion. United Nations. (2022). General Assembly: Votes on resolutions regarding the situation in Ukraine.

Economic Diversification Efforts: Seeks to reduce dependence on Russia by diversifying oil export routes.

Oil export strategy: There are plans to increase oil exports to the west, across the Caspian Sea.

Python programming setup within Visual Studio Code, tailored to analyze sentiment in messages gathered from the chosen Telegram channels.



Python code in Visual Code Studio for establishing prevalent sentiment in each channel.

C: > Users > banba > OneDrive > Desktop > Tweepy > telegramRUprevalent.py > ...

```python
import pandas as pd
from transformers import AutoTokenizer, AutoModelForSequenceClassification
import torch
import re
import string

def preprocess_text(text):
    text = text.lower()
    text = re.sub(r'https?://\S+|www\.\S+', ' ', text)
    text = re.sub(r'\b[\w.-]+?@\w+?\.\w{2,4}\b', ' ', text)
    text = text.translate(str.maketrans('', '', string.punctuation))
    text = re.sub(r'\s+', ' ', text).strip()
    return text


file_path = r'C:\Users\banba\OneDrive\Desktop\contentTelegram.xlsx'
data = pd.read_excel(file_path)

data['preprocessed_text'] = data['text'].apply(preprocess_text)

tokenizer = AutoTokenizer.from_pretrained("blanchefort/rubert-base-cased-sentiment-rusentiment")
model = AutoModelForSequenceClassification.from_pretrained("blanchefort/rubert-base-cased-sentiment-rusentiment")

label_map = {0: 'NEUTRAL', 1: 'POSITIVE', 2: 'NEGATIVE'}

@torch.no_grad()
def predict(text):
    inputs = tokenizer(text, max_length=512, padding=True, truncation=True, return_tensors="pt")
    outputs = model(**inputs)
    predicted = torch.nn.functional.softmax(outputs.logits, dim=1)
    predicted_label_index = torch.argmax(predicted, dim=1).numpy()[0]
    predicted_score = predicted[0, predicted_label_index].item()
    return label_map[predicted_label_index], predicted_score

results = data['preprocessed_text'].apply(lambda x: pd.Series(predict(x), index=['Sentiment', 'Score']))
data['Sentiment'] = results['Sentiment']
data['Score'] = results['Score']


prevalent_sentiment = data.groupby('channel_tag')['Sentiment'].agg(lambda x: x.mode()[0]).reset_index()


def calculate_avg_score(row):
    channel = row['channel_tag']
    sentiment = row['Sentiment']
    filtered_rows = data[(data['channel_tag'] == channel) & (data['Sentiment'] == sentiment)]
    return filtered_rows['Score'].mean()


prevalent_sentiment['Average_Score'] = prevalent_sentiment.apply(calculate_avg_score, axis=1)


new_file_path = r'B:\pythonNEW\output_prevalent_sentimentTelegramOneRU.xlsx'
prevalent_sentiment.to_excel(new_file_path, index=False)

print(f'New Excel file with prevalent sentiment and average score for each channel is saved to "{new_file_path}".')

```