

Computational Analysis of Belarusian State-Owned Media

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Abstract

Nowadays, the influence of the state-owned media in authoritarian countries is drastic. Hence, it is important to recognise government manipulation to effectively resist it. In this research, we analyse sovereign Belarusian pro-governmental media - "SB. Belarus' Segodnya". As a result, we present a new corpus of texts, 8 years of political news (20K articles). Also, we do unsupervised topic modelling to analyse differences in narratives before and after disputed presidential elections in August 2020.

1 Introduction

Media control is one of the most important tasks for authoritarian regimes. Overt techniques include fake news, falsified information, and censorship, which in combination with agenda-setting (choosing *what* to cover) and framing (choosing *how* to cover) can shape public opinion in the desired way. Whereas a lot of research is devoted to the analysis of Russian (Herpen 2015; Field et al. 2018) and Chinese (King et al., 2017) government manipulations, we decided to focus on describing Lukashenka's regime in Belarus. Despite the small influence of Belarusian state media narratives in shaping the global information environment, we find it valuable to research which myths and ideas were developed by Belarusian authorities. Also, we would like to measure computationally how pro-governmental media react to major political events like rigged elections in 2020.

To do this, we will analyse the main printed newspaper in the country - "SB. Belarus' Segodnya" ("SB. Belarus Today"). It is owned by the Administration of the President and is widely known for propagating pro-governmental agenda. Employees of this media are constantly targeted by EU and US sanctions starting from the 2006 unfair presi-

dential elections. Motivation statements for sanctions include accusations in support and justification of the repression of the democratic opposition and civil society. To conclude, this printed press is an illustrative example of the pro-government media in Belarus.

Contributions of this work are manifold. First, we give an overview of the Belarusian political situation, and highlight the roles of pro-governmental and independent media in shaping public opinion. Secondly, we present a new corpus of political news from the web version of 'SB. Belarus' Segodnya'. This collection includes almost 20k articles from 2014 till 2022. Finally, we analyse this data using both simple count-based methods and more complex topic modelling techniques (LDA). All code and data are available on GitHub (<https://github.com/tsimafeip/SB-belarus-yesterday>).

2 Background Review

Here we would like to give an overview of existing research about political narratives of the sovereign Belarusian regime, the role of the propaganda in it, and the shift in topic coverage after the presidential campaign in 2020.

2.1 The house that Lukashenka built

Belarusian sovereign regime developed several stable narratives and myths (Shraibman, 2018; Shaput-ska, 2016). They actively use Soviet ideas ('NATO threat', 'Great Patriotic War', 'Union of Belarus and Russia'), nevertheless, there are plenty of new ones. For instance, promoting Lukashenka's personality, social stability, sovereignty, and 'everything but no war'. However, it is rather flexible. They adapt to transformations in the political and socio-economic fields. Additionally, Belarusian ruling elites react to changes in a country's foreign policy qualitatively and quantitatively. In the

following subsections, we will describe the main ideas.

2.1.1 Stability and sovereignty, 'no war' and enemies

Current Belarusian state officials justify any social unfairness or low level of life (Belarus is one of the poorest European countries) by high costs of maintaining stability and resisting external enemies. According to their public speeches, the sovereign Belarusian state is following a unique path between East and West and it can explain any deprivations that Belarusian people are experiencing now. This narrative is also helping to protect the regime from the threat of protests. They employ propaganda to discredit the idea of protesting itself, as well to exploit a historical fear of social upheaval among Belarusians. This technique is a common characteristic of authoritarian regimes: they claim they are not violating human rights or constraining the opposition but merely protecting the people and domestic stability.

2.1.2 Lukashenka personality - 'father of the nation'

The main public actor of the political mythogenesis is the Belarusian president, Aliaksandr Lukashenka. Other actors are auxiliary. Propaganda cultivates an image of Lukashenko as an experienced, reliable leader who brought the country out of the chaos of the 1990s. The resulting cult of personality is rather functional than a pure cult of the leader. There are no streets and cities named after Lukashenka, no statues or large museums devoted to his life. On the other side, state-owned media are trying to unite country, government, and Lukashenka in public perception.

2.1.3 Soviet heritage

Belarus is commonly recognized as one of the most Soviet-influenced states. There are a lot of streets named after communists (Satsukevich, 2021), Lukashenka treats USSR dissolution as a global political catastrophe and calls himself a 'soviet man'. Hence, there is no surprise that Belarusian officials and state-owned media use the following narratives:

- treating collective West and NATO as threats;
- cultivating Soviet myth of Great Patriotic War;
- highlighting the importance of the Union of Belarus and Russia to resist external enemies.

2.2 Media in Belarus

In this chapter, we would like to describe the media landscape in Belarus. We can distinguish two big blocks: state-owned and independent (including bloggers) media.

2.2.1 State-owned media

State-owned media are mostly represented by TV channels and the printed media¹. According to the official web page of the President of Belarus, the largest national mass media outlets are Belarusian TV and Radio Company, the Second National TV Channel (ONT), ZAO Stolichnoye Televideniye (STV). ONT is largely relying on Russian First Channel programs. The printed press is represented by the publishing house Belarus Segodnya and the publishing house Zvyazda. The Belarusian government also owns the news agency - Belarusian Telegraph Agency (BelTA). All these media are forcibly spread among budget organisations.

2.2.2 Independent media

On the other hand, there are plenty of independent media. The most popular ones are represented on the Internet because printed media and TV channels are heavily controlled by the government. We see the following categories of independent media: 1) Large media with Belarusian origin and financing: TuT.by (now Zerkalo.io, considered as the most popular media in Belarus), Onliner.by, Nasha Niva. 2) Media financed by US and EU: Belsat, Radio Svaboda. 3) Bloggers (Telegram, YouTube): Motolko, Tsiknauoski, NEXTA.

In highly controlled states Internet-based initiatives and bloggers are traditionally gain popularity. Belarus is not an exception (Herasimenka, 2016). Besides numerous blogging initiatives, the main media outlet in Belarus was an exclusively web project. TuT.by² was considered to be one of the most popular web-pages in Belarus before its crack-down by government in May 2021. According to the Gemius service, in April 2021, the portal covered 63% of the Belarusian internet audience. 3.3 million people or every third resident of Belarus visited TUT.BY. TUT.BY website traffic was 16 times higher than website traffic of the largest Belarusian state news agency belta.by and is comparable to traffic of popular Polish and Russian publications – Gazeta.pl and Komsomolskaya Pravda in Russia.

¹<https://president.gov.by/en/belarus/society/mass-media>

²<https://savetutby.info/en>

TUT.by still owns a YouTube channel with 1.45 million subscribers (March 2022).

Hence, we can conclude that despite the tight state regulation, Belarusians are active Internet users and they almost ignore state propaganda thanks to the alternative sources of information.

2.3 Presidential campaign in 2020

The presidential campaign in 2020 was the major political event in the recent history of Belarus. The low influence of traditional state-owned media and high level of Internet usage among Belarusians allowed people to organise themselves effectively to resist the authoritarian government. Officials used their traditional methods to intimidate civic society and stop the spread of information. Popular bloggers Tsikhanouski and Losik were detained several months before the actual election date, licenses for foreign media were revoked and their journalists were arrested for short sentences. However, all efforts of ruling elites were not able to stop Belarusians from active protesting in August 2020. Several hundred thousand people gathered in Minsk on 16 August, a week after the election date. Later, Lukashenka's regime was able to crack-down a protest using massive support of Russia, including a media one. Specialists from Russia Today were sent to Belarus in August 2020 to build a media narrative and hide the effect of massive strikes amongst former pro-government journalists (Viačorka, 2021). In the next subsections, we will describe major challenges for state-owned media after the revolution.

2.3.1 Explain the revolution

One of the main tasks for government officials and state-owned media was to explain how mass protests were possible at all. Following their narratives, Lukashenka has enormous support in Belarus. According to official election results, he obtained more than 80% of votes in 2020. Hence, ruling elites started to promote a myth of enemies, accusing the collective West (EU and US) of financing protests. Speaking with BBC journalist in 2021³, Lukashenka claimed that they are destroying all non-government and non-profit organisations, because West was financing revolution through them. To sum up, a general myth of foreign enemies, having roots in the Soviet Union, got a new life.

³<https://www.bbc.com/news/world-europe-59343815>

2.3.2 Diminish protesters

The second main aim was to diminish protesters themselves. The task was to show that only marginalised persons are supporting the revolution. For this goal, state-owned media used several main narratives.

First, they claimed that the white-red-white flag, that extensively used by protesters, is tied with Nazi collaborators during Second World War. Also, state-owned media and officials started to promote another political myth actively: historical memory of the Great Patriotic War. They were trying to convince people that they are fighting not with civic society, but with neo-fascists.

Second, state-owned media used directed hate speech⁴. For example, one of the well-known propagandists, Ryhor Azaronak, calls activists of the anti-regime movement “inhuman”, “parasites and idlers”, “rats”. Dehumanization is often accompanied by death threats. Andrey Mukovozchik, another widely recognised propagandist, writes: “We will definitely find you ... and we will hang you, side-by-side,” about two UK dissidents of Belarusian origin.

Third, Lukashenka's regime uses state media in a tight combination with security forces. For example, Lyudmila Hladkaya, journalist of 'SB. Belarus' Segodnya', conducts interrogations of detained people⁵, has exclusive access to the closed trials and even joined Belarusian army troops in Kazakhstan in January 2022.

2.3.3 Hide repressions

The last but not least challenge for Lukashenka's regime in Belarus was to hide brutal repressions and their real scale.

Firstly, they use state-owned media to falsify information. Akrestina, a notorious detention center in Minsk, is known as a place where thousands of people were tortured in August 2020 and later. Trying to deny this information, Ryhor Azaronak filmed a video, picturing Akrestina as a safe and clean place.

Secondly, the regime destroys major independent media, which continue honestly describing the situation. TUT.BY web-page was blocked in May 2021, and 15 employees were imprisoned. Yavor Martynovich, editor-in-chief of the oldest

⁴<https://euvdisinfo.eu/disinformation-fuels-hate-on-belarusian-tv/>

⁵<https://mediazona.by/article/2021/03/29/gladkaya>

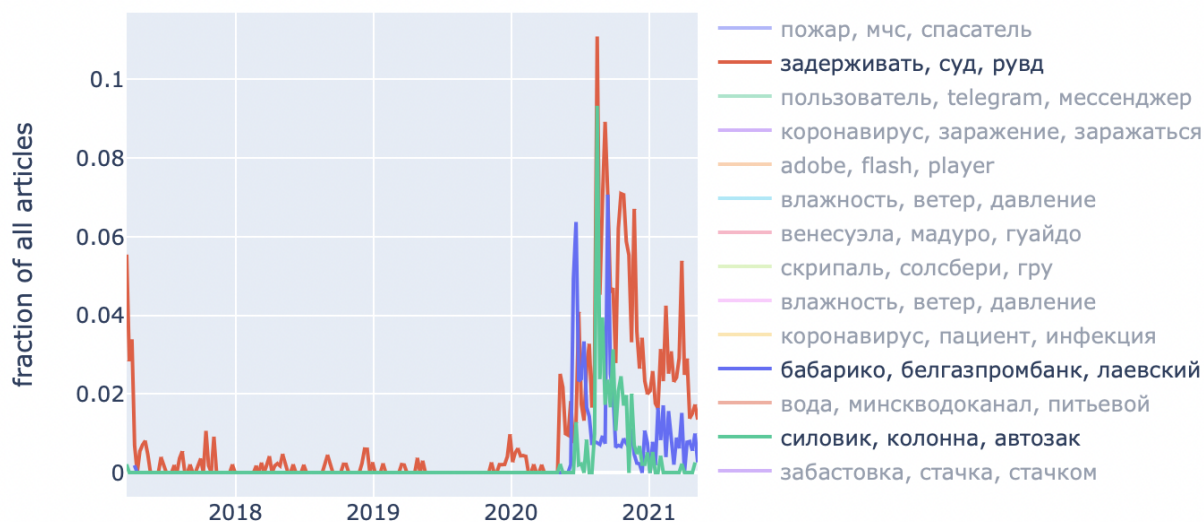


Figure 1: Topic coverage in the independent media

Belarusian newspaper - Nasha Niva - was detained in July 2021.

2.3.4 Results

We see several shifts in state-owned media in Belarus after the political crisis in 2020.

First, state-owned media narratives became more violent and hateful. The most well-known propagandists are included in the recent EU sanctions lists.

Second, several political myths obtained a new life. Anti-West rhetoric is meant to solidify society in the face of the enemy. In addition, state-owned media actively promote the idea of Great Patriotic War and describe protesters as nazis.

Third, Belarusians still obtain information from independent media represented in Telegram or YouTube. New media also emerge. For example, former TUT.BY employees founded Zerkalo.io. State-owned media started to promote their Internet accounts, however, their coverage remains low.

3 Corpus Creation

To analyse pro-governmental media computationally, we have decided to create a corpus of political articles by "SB. Belarus' Segodnya" from 2014 till 2022. It is the largest newspaper in Belarus, owned by the Administration of the President. The weekly circulation is about 190k of exemplars. The main source of the data was the web version (<https://www.sb.by>) of the newspaper.

3.1 Data Scraping

We have decided to collect exclusively political articles to focus on agenda-setting and framing analysis later, following the techniques described in Field et al. (2018). Online articles are available from 2014 until the present time. The algorithm was the following:

1) We started from the generic seed url and iterated by aggregation pages simply changing page numbers from the oldest to newest. On each aggregation page, we scraped around 20 links to the articles.

2) To store data we created a local SQLite database (<https://www.sqlite.org>). This data organisation method allows usage of SQL queries for interactive analysis (current document count, finding duplicates, selecting articles from date range and with specific words). Articles are stored with the following structure:

- document_id - non-empty unique identifier of the document
- title - primary document title
- title_h1 - secondary document title
- tags - list of tags selected by the author
- similar_documents - links to similar articles
- author - name of the author
- body - main text of the article
- hyperlink - original url of the article

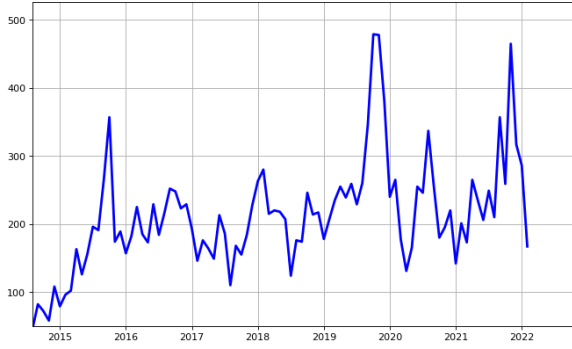


Figure 2: Number of articles per month

There were several issues during parsing. Some of them were technical: http/https references to the same pages; varying data organisation inside pages. Other problems were content-related: old documents do not contain tags and references to similar documents; some pages are not articles, but special pdf editions of the paper or links to external sources.

Finally, we created a corpus of 19334 documents.

3.2 Initial Data Analysis

In this chapter, we do an initial analysis of the collected corpus. Even simple methods, based on substring matching, can reveal intrinsic media manipulation strategies like agenda-setting. For instance, the leader of the Belarusian democratic movement, Sviatlana Tsikhanouskaya, mentioned only 78 times from the beginning of the election campaign in 2020. Other popular independent candidates Viktor Babaryka and Valery Tsapkala were mentioned around 15 times, whereas Aliaksandr Lukashenka has 2063 mentions. It is relevant to compare it with independent media coverage for the same period. Sinyavski (2021) provides topic models build on tut.by and naviny.online articles (Figure 1)⁶. There are around 300 articles mentioning popular opposition candidate Viktor Babaryka and around 400 articles about protests and the detention of activists. We see a peak of a blue topic ('Babaryka'; 'Belgazprombank') in June 2020 following the detention of the candidate. Also, there are clear peaks for green ('security officer'; 'paddy wagon') and red topics ('to detain'; 'court'; 'police department') in August 2020 when mass protests were violently suppressed. On the other side, there are only 2 mentions of the word 'avtozak' ('paddy

⁶<https://share.streamlit.io/sinytim/topics>

Full Corpus	'Before'	'After'
Lukashenko	Lukashenko	Lukashenko
Belarus	President	Belarus
President	elections	MID
MID	USA	Russia
Russia	Russia	Makey
USA	MID	opinion
elections	Ukraine	ODKB
Makey	Belarus	Poland
Ukraine	Makey	refugees
Putin	Trump	USA

Table 1: Tags Analysis.

wagon') in the corpus of "SB. Belarus' Segodnya". Hence, there is a clear intent to hide or at least downplay the scale of protests.

In the following subsections, we describe other aspects of preliminary corpus analysis.

3.2.1 Tags Analysis

Almost every published article from 2016 has special tags, selected by the author. Count-based analysis can help to identify the most popular topics. We provide full lists of top-10 popular tags in Table 1. Speaking about the full corpus, the most popular tag is 'Lukashenko' (3432), the second place takes 'Belarus' (1020), the third one is 'President' (832). Other popular tags include 'Russia', 'USA', 'Ukraine', 'elections'. We see that after unfair elections they stopped active use of the tag 'President'. Instead, the usage of the tag 'Belarus' increased. Also, the paper introduced the 'opinion' tag to mark a new type of article with the personal opinion of pro-governmental propagandists.

3.2.2 Articles per month

The second direction of preliminary analysis is a graph depicting a number of articles per month (Figure 2). The mean value of publications per month is 212.5, but there are several peaks (above 300 articles) allowing detection of important political events in Belarus. For example, the highest peak is detected at the end of 2019. This period included parliamentary elections, pressure from Russia about closer integration, and the following oil supply crisis. Also, there are peaks corresponding to presidential elections (October 2015, August 2020) and migrant crisis (November 2021). Presidential elections in 2015 and parliamentary elections in 2019 were covered more than a very active political campaign in summer 2020. In our opin-

Topic Name	Words
Lukashenko	Lukashenko, president, tell, know, want, understand
Europe	geopolitical, European, dialogue, threat, West, confrontation
Soviet history	GDR, monument, Czechoslovakia, Stalin, Gorbachev, socialism
Union with Russia	union, Belarusian-Russian, eurasian, Putin, integration
Migrant Crisis	refugee, Polish, migrant, Lithuania, police
Military	ODKB, drills, Zas', defence, Afganistan, army
Internal European Politics	Macron, Catalonia, Merkel, Brexit, Scotland, eurosceptic
Economy	market, budget, export, bank, financial, ruble
Belarusian Elections	candidate, voting, elections, Ermoshina, observer

Table 2: Full Corpus.

ion, it can be explained by intended agenda-setting. The task here was to create an illusion of the high importance of several events. However, in 2020 Belarusian state officials were disappointed by the scale of protests and, hence, were unable to formulate their point of view explaining the situation.

3.2.3 Count-based word analysis

To perform word analysis we did the preprocessing including the following steps: lowercasing, tokenization, lemmatization, excluding stopwords and punctuation signs. Lemmatization was performed using the MyStem tool (Segalovich, 2003). After preprocessing we have 4,764,694 (111,786 unique) tokens in the corpus. The last step is a count-based analysis of the most popular tokens. For the full corpus, the most frequent tokens are 'Belarus', 'president', and 'country'. The set of most popular tokens before the presidential campaign in 2020 resembles the tokens set of the full corpus, whereas after the campaign we observe a different picture. 'Belarus' is still the most popular token, but now 'country', 'our', 'state' occupy positions in the top-4 leaving 'president' token only at 5th place. To identify and classify framing issue in words from the new top, we refer to 'The Policy Frames Cookbook'. Boydstun et al. (2014) present 15 cross-cutting framing dimensions, such as economics, morality, and politics. This research was informed by the framing literature and developed to be general enough to be applied to any policy issue. To be specific, 'Cultural identity' frame includes traditions, customs, or values of a social group in relation to a policy issue. We see that words from the new top ('country', 'our', 'state') are perfectly fitting to this frame.

4 Topic Modelling

Starting with simple count-based methods we proceed to more complex analysis. We used Latent Dirichlet Allocation (Blei et al., 2003) to do topic modelling. It is a generative statistical model that allows sets of observations to be explained by unobserved groups. We followed a tutorial by Darling (2011) to implement our version of LDA algorithm. We run it with the following set of hyperparameters: 300 iterations, 20 topics, 0.02 alpha, and 0.1 beta. To analyse and interpret results, we used the LDAvis library by Sievert and Shirley (2014). The relevance parameter was set to 0.2 to filter out the most frequent words. Topic names in the further analysis were inferred from the selected set of words, so this analysis is subjective to some extent.

4.1 Full Corpus

First, we analyse a full corpus. Details are provided in Table 2. Belarusian, Polish, and other foreign words (English and Spanish) were distinguished into three separate topics.

The first and the biggest topic is devoted to Lukashenko's personality and his actions ('tell', 'know', 'want', 'understand'). In our opinion, it accentuates the key importance of the president and his actions in Belarus.

Soviet history, especially the part about large influence in Europe (GDR, Czech Republic) is confirmed as an important aspect of Belarusian sovereign political mythology.

We see a separate topic describing Union with Russia, thereby confirming a salience of this myth. LDA also discovered a set of words describing military operations. The most representative words here are 'ODKB' (Collective Security Threat Organisation, Russia-headed military union), 'de-

Topic Name	Words
Religion, Sport and History	olympic, memory, church, deed, monument
Ukraine Crisis	Poroshenko, Zelenskij, Donbass, contact, Kyiv, Normandy
Migrant Crisis	migrant, refugee, Hungary, Czechia, Germany, Polish

Table 3: 'Before' Corpus.

Topic Name	Words
Western Sanctions	sanction, West, pressure, action, interference
Fascism and Church	memory, nazism, heroic, orthodox, patriotic, upbringing
China Partnership	China, industrial, partnership, strategic, accomplishment, global
Parliament and Laws	assembly, house, parliamentary, commission, deputy, legal
Protests	police, demonstrator, protest, hurt, investigator, detainee

Table 4: 'After' Corpus.

fence', 'drills'. Afghanistan is mentioned as a potential source of the conflict, where ODKB should potentially react and protect its member state, Tajikistan.

Affairs with Europe are described with contradictory terms like 'conflict' and 'dialogue', although negative sentiment is prevalent ('threat', 'confrontation'). Balancing between Russia and other allies is one of the main characteristics of Belarusian foreign politics. Nevertheless, we can conclude that Russia is considered as the main ally and the West as an enemy.

Topic, that we called 'Internal European Politics', includes several eurosceptic processes like Brexit or referendums in Scotland and Catalonia. To our mind, extensive promotion of this narrative serves a goal of showing European weakness.

Speaking about temporary topics, we see the one devoted solely to the migrant crisis. This topic is mostly about the recent conflict on Polish and Lithuanian borders in November 2021. Hence, we see the support of evidence that this small topic was covered extensively since it is distinguishable even in full corpus with articles from 2014 till 2022.

Finally, we observe some neutral topics like the economy or Belarusian elections.

4.2 Before Presidential Campaign 2020

Details are provided in Table 3. Here we will focus on topics that are not present in the full corpus because it is obvious that the 'before' corpus has a large presence in the full version of data.

There is a topic 'Religion, Sport and History', which combines very different sub-topics. In our opinion, it can be described as the ideological basis of the sovereign Belarusian regime.

We also observe some topics, that can be described as adaptive or temporary. For instance, "SB. Belarus' Segodnya" actively covers the crisis in Ukraine for mostly two purposes: show the value of stability in Belarus and emphasise the peace-making role of Minsk in this process. Additionally, there is a clear topic describing the migrant crisis in Europe in 2015.

4.3 After Presidential Campaign 2020

Details are provided in Table 4. As we expected, there is a clear anti-West topic. However, it is not about protests financing, but mostly about sanctions, pressure, and interference to sovereign Belarusian affairs.

We also see the topic mixing words from two sup-topics: fascism and church. Journalists of "SB. Belarus' Segodnya" are trying to link protesters with nazis, enemies of Belarus during the Great Patriotic War. They appeal to historic memory, heroic deeds, and promoting unity to resist enemies. The role of the Orthodox Church here is to support a government in a patriotic upbringing of the citizens.

Strategic partnership with China is heavily highlighted. This country is depicted as a global leader, who actively supports Belarus. It is worth mentioning, that partnership with China was described in "SB. Belarus' Segodnya" earlier, but it was mixed with other countries.

For the first time, there is a single topic about parliament and laws. Previously, it was mixed with the judiciary. To our mind, it can be explained by the increased role of parliament in passing various anti-protest legal acts. Also, interviewing members of both parts of the Belarusian parliament can cre-

ate a feeling of mass support of the government actions, since deputies are supposed to be elected by people.

Finally, we found a topic about protests and police repressions. We decided to analyse this topic closer using SQL query looking for 'demonstrator' sub-string in documents body. This analysis revealed that journalists of "SB. Belarus' Segodnya" mostly write about upheavals in Kazakhstan, Kyrgyzstan, or covid-related protests in the EU and US. In our opinion, it proves that the topic of Belarusian protests is intentionally hidden.

5 Future work

We see the following directions for future work.

First, we are thinking about utilizing other topic modelling techniques. For example, top2Vec (Angelov, 2020) uses word embeddings, does not require a predefined number of topics and extensive pre-processing.

Second, we are going to create a corpus of materials written by recognised propagandists, like Andrey Mukovozchik. Further analysis of this data can include hate speech detection and shift in narratives after presidential elections in Belarus in 2020.

6 Conclusion

In this paper, we analysed political myths created by Lukashenka's regime in Belarus and the role of propaganda in it. Also, we reviewed in detail the shift in narratives of state-owned media news coverage after rigged presidential elections in 2020 and the following protests. Later, we crafted a corpus of 20k political articles from the main pro-governmental printed press in Belarus - 'SB. Belarus' Segodnya'. We performed both count-based and statistical documents analysis. This allowed us to computationally confirm the existence of certain strong narratives in the selected media. Additionally, we revealed cases of agenda-setting and framing by comparing this corpus with Belarusian independent media describing the same period.

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