



Infodemics, a snap election, and a (lukewarm) Western welcome: North Macedonia's identity at stake on Twitter

Study II – Content of Disinformation

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January 2021



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**Published by the Prague Security Studies Institute,
January 2021, Prague**

The publication is written within the framework of the project
**“Western Balkans at the Crossroads: Ways Forward in Analyzing
External Actors Influence”** led by the Prague Security Studies
Institute with the support of the National Endowment for Democracy.

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Executive summary

Disinformation campaigns often base their activity around social media posts or statements from political leaders whose messages are amplified or used for facilitating political attacks on opponents. This was also the case for the network identified in [Study I](#) of this research project – a network developed for the purpose of the 2020 election in North Macedonia, which focused its activity on amplifying posts from the centre-right Internal Macedonian Revolutionary Organization – Democratic Party for Macedonian National Unity (VMRO-DPMNE) and Levica [‘The Left’], while also vilifying officials from the centre-left Social Democratic Union of Macedonia (SDSM). However, not all disinformation campaigns rely on the activity of organized, centrally controlled networks. Rather, many disinformation campaigns are the result of content published and shared by news outlets with dubious agendas, unclear ownership and a lack of transparent editorial policies. This content is then disseminated among organic groups of social media users susceptible to the views promoted by these outlets.

This study presents the second part of a research project analyzing the presence of foreign computational disinformation in North Macedonia in the period surrounding the 2020 election. The electoral period and the study are situated amidst several significant developments in North Macedonian foreign politics, including NATO membership and the expected start of EU membership negotiations – developments which challenge the goals of foreign actors opposed to the Euro-Atlantic integration of Western Balkan countries, most notably Russia. To conduct the analysis, we regularly collected the 100 most popular tweets aggregated by North Macedonia’s most visited news domain *Time.mk*. These tweets were collected every two hours of every day between early February and early

August of 2020 – a total of 138,983 unique tweets shared by 5,604 unique users. We use this data to determine the most shared domains (specifically news outlets) in this period, as well as to determine which hashtags fueled discussions surrounding the election. We additionally link our findings to the outcomes of Study I of this research project, where we identified a large network of accounts created in the run-up to the 2020 election for the purpose of increasing the visibility of VMRO-DPMNE and Levica officials, largely as a means of amplifying content in opposition to the country’s Euro-Atlantic integration, while also vilifying SDSM officials. Firstly, we show that posts from the accounts of VMRO-DPMNE leader Hristijan Mickoski, as well as those from Levica leader Dimitar Apasiev, frequently made it among the top daily tweets in this period, despite their relatively low numbers of follower on Twitter. This finding suggests that the network identified in Study I of this research project was effective in promoting the tweets of these actors among organic Twitter communities in North Macedonia. Additionally, we show that outlets such as *Infomax*, an outlet with at least indirect links to Russian state-funded news, as well as outlets such as *Freeglobe*, *DokazMakedonija* and *Kolozeg*, all of which support VMRO-DPMNE and promote conspiratorial views based on global and domestic right-wing content, shaped the discussions of Twitter users in North Macedonia in this period. Finally, we demonstrate that the most popular, politically substantive hashtags in this period promote opposition to North Macedonia’s name-change as well as to the country’s Euro-Atlantic integration. While the study did not identify direct foreign influence, the findings show that computational disinformation methods were used to shape public discussions primarily with content aligned with the geopolitical goals of foreign actors opposed to the country’s progress on its Euro-Atlantic integration path.

Introduction

Disinformation campaigns based on computational propaganda methods, defined as “the use of algorithms, automation, and human curation to purposefully distribute misleading information over social media networks”, play an increasingly important role in the formation of public opinion regarding key issues and events (Woolley and Howard 2016, 3; Keller et al. 2019; Harris 2014). Often, these campaigns base their activity around social media posts or statements from political leaders whose messages are amplified or used for facilitating political attacks of opponents. In other cases, such as that of the *Sputnik*-linked group shut down by Facebook in 2019 for spreading anti-NATO propaganda, state-funded outlets serve as the primary source of content disseminated by automated networks of accounts on social media (Waterson 2019).

However, not all disinformation campaigns rely on the activity of organized, controlled networks. Rather, disinformation campaigns can also thrive through the spread of unverified content published and shared by news outlets with dubious agendas, unclear ownership and a lack of transparent editorial policies – content then spread among organic networks of social media users susceptible to the views promoted by these outlets. For instance, recent research regarding the spread of conspiracy theories about the coronavirus pandemic, shows how for-profit news outlets such as *InfoWars* played a major role in the spread of conspiracy theories about 5G networks among Twitter users in the UK (Ahmed et al. 2020).

As elsewhere, state-funded, for-profit and ad-hoc outlets also play an increasingly meaningful role in the shaping of public opinion in Western Balkans countries. Most notably, in recent years, Russian state-funded outlets such as *Russia Beyond the Headlines* and *Sputnik* have begun infiltrating the media sectors in Serbia, North Macedonia and other Western Balkan countries (Klepo 2017). Research shows that an increasing number of sympathetic or for-profit local outlets have made use of this presence and either actively republish content from Russian outlets or base their own reporting on this content (Stronski and Himes 2019).

Building on the assumption that there would be an increase of content sourced from foreign state-funded outlets during North Macedonia's 2020 election, this study presents the second part of a research project analyzing the presence and use of computational propaganda and foreign influence in North Macedonia in the period surrounding

the July 2020 election. In [Study I](#) of this research project, we focused on the activity of instruments of disinformation campaigns, as we described the activity of a network of purpose-built accounts focused on vilifying officials from SDSM and Western institutions, while contesting the name-change and amplifying the messages of VMRO-DPMNE and Levica. While no direct link could be identified between this network and foreign influence, much of the content shared by the network was characterized by sentiments which play into the agenda of foreign actors opposed to the Euro-Atlantic integration of North Macedonia and its neighbours.

However, Study I exclusively focused on users which interact with the accounts of 26 political figures and media outlets (selected to obtain a representative sample of the political landscape within the country) and thus worked with a data set not representative of North Macedonian Twitter as a whole. As such, the study could not provide sufficient indication of what the broader userbase of Twitter in North Macedonia discussed in the period surrounding the election, as well as what topics and news outlets shaped public discussions in this period – two potential avenues for detecting (foreign) disinformation campaigns.

In the current study, we extend the analysis to an additional data set, namely data from *Time.mk*'s Twitter aggregator (North Macedonia's most visited news domain), which generates a list of the most popular tweets in North Macedonia on any given day (Alexa 2020). We focus on two aspects of this data: the most shared domains on Twitter (with a particular focus on news domains) and the most popular, politically substantive hashtags, which can provide an indication of the dominant themes which shaped discussions during this time. We use this data to answer the following research questions: a) which domains (news outlets) and hashtags shaped discussions on North Macedonian Twitter in the period surrounding the 2020 election and b) can this content be linked to foreign influence or the network identified in Study I? The electoral period and the study are situated amidst several significant developments in North Macedonian foreign politics, including NATO membership and the anticipated beginning of EU membership negotiations – developments which challenge the goals of foreign actors opposed to the Euro-Atlantic integration of Western Balkan countries, most notably Russia.

Foreign disinformation and its consequences in the WB

– the penetration of Russian narratives as aided by local political elites

News articles shared on social media often act as the primary source for the spreading of narratives from disinformation campaigns – narratives usually disseminated as part of a broader set of articles from outlets with state-funding or dubious ownership structures. For instance, disinformation campaigns from Russia have extensively relied on the content shared by state-funded outlets such as *Russia Today (RT)*, *Sputnik* and *Russia Beyond the Headlines*, all of which boast content in numerous languages. The agendas of these outlets have been publicly discussed. In several interviews, RT's editor-in-chief Margarita Simonyan discussed RT's role in the "information war" against the "whole Western world", noting how "information weapon[s]" and audiences should be used in "critical time[s]" (as cited in Nimmo 2018). In practice, this goal has frequently resulted in the production and spread of news articles based on false and misleading information presented with highly charged language.

With this approach, Russian outlets have also successfully entered the media market in the Western Balkans, especially so in Serbia. Notably, both *Sputnik* and *Russia Beyond the Headlines* have Serbian-language versions, while *Russia Beyond the Headlines* also has a Macedonian-language version. The success of these outlets in Western Balkan countries has been aided by the free-for-all policy of Russian outlets, which do not charge a fee for republishing their content – an ideal condition for the region's largely underfunded media sector (Stronski and Himes 2019; Klepo 2017).

As a result, an increasing number of sympathetic, underfunded or for-profit local outlets have made use of this possibility and either actively republish content from Russian outlets or base their own reporting on this content, including outlets such as *Vostok Vesti* and *Srbija Danas* ['Serbia Today'] in Serbia (Stronski and Himes 2019; Denkovski and Trilling 2020). One study suggested that in 2016, one-third of outlets in Serbia published articles about international actors without noting sources or authors, many of which based on pro-Russian and anti-Western attitudes similar to those promoted by Russian state-funded

outlets (CRTA 2018). While there is less evidence to suggest that Russian outlets have had the same levels of success in North Macedonia, the increasing relevance of these outlets in Serbia, as well as the comparable media systems of the two countries, suggest that Russian state-funded outlets may well become increasingly influential in North Macedonia.

The potential increasing influence of Russian state-funded outlets is supported by the actions of domestic political elites which build on and amplify the narratives of these outlets for the purpose of achieving political goals, often by exploiting notions of pre-existing identity ties or shared, conservative values (Naunov 2019; Metodieva 2019). For instance, in 2015, during North Macedonia's major wiretapping scandal, former PM Gruevski of VMRO-DPMNE began calling for the 'desoroization' of North Macedonia – a narrative originally developed in Russia and Central Eastern European countries, regarding the (cultural) influence of billionaire philanthropist George Soros and left-wing organizations funded by the Open Society Foundations (Stronski and Himes 2019). Around the same time, Russia's Ministry of Foreign Affairs and Russian state-funded outlets further incited tensions in the country, by peddling accusations towards the EU and NATO of conspiring to divide North Macedonia between Bulgaria and an 'Albanian Platform' (Novinite 2015; Noack 2017). VMRO-DPMNE officials both amplified these narratives and produced new ones in an attempt to remain in power, substantially radicalizing their supporters as a result (Ceka 2018; Blanusa et al. forthcoming).

After Gruevski stepped down from party leadership as a result of the 2015 wiretapping scandal, VMRO-DPMNE, led by Hristijan Mickoski, continued to maintain a party platform based on conservative views and identity-related issues, ultimately resulting in explicit opposition to the country's name-change referendum – a vital step for the country's progress on its Euro-Atlantic integration path. As a result, between 2014 and 2019, support for EU membership among VMRO-DPMNE supporters dropped from 77% to 49%, with identity and value-based concerns



cited as dominant predictors of Euroscepticism at the time (Damjanovski et al. 2020; Naunov 2020). In the meantime, new actors emerged in the country's political scene, including Levica, a nominally socialist party led by Dimitar Apasiev, which is opposed to the name-change, as well as to North Macedonia's NATO membership.¹

With this context in mind, we expect that if foreign state-sponsored content influenced discussions in North Macedonia in the period surrounding the July 2020

election, that this content would be sourced from Russian state-funded outlets and designed to appeal to the voter base of VMRO-DPMNE, Levica and citizens generally opposed to North Macedonia's Euro-Atlantic integration. If such content was present and influential, we also expect it to have also influenced the dominant hashtags in this period, which for the purpose of this study are considered indicative of the most prominent and relevant topics for voters in the period surrounding the election.

Data collection and analysis

To examine the most influential news domains and hashtags in the period surrounding the election, we collected the 100 most popular tweets aggregated by the website *Time.mk* every two hours of every day between early February and early August of 2020 – a total of 138,983 unique tweets shared by 5,604 unique users.² This source of data is useful for two reasons. Firstly, this content can be considered a representative sample of the overall Twitter discussions in the country in this period. Secondly, the tweets analyzed are also viewed by visitors of *Time.mk*'s Twitter stream, many of whom are not Twitter users, for which reason the examined content can also be considered influential for non-Twitter users in the country.

For the analysis of domains and news outlets shared, we firstly identify all tweets containing links. To do so, we apply a regex search pattern, a form of text search which allows for querying patterns of text rather than literal search strings (e.g. the regex pattern `\d` can be used to match all digits in a string of text) to identify and extract all 77,000 tweets with links. We then apply a Python script which extracts and stores the original domain name of all links shared. We then filter out all internal links (links leading to other Twitter posts), as we are only interested in external (news) domains and not links leading to posts from other

Twitter users. The domains identified in the remaining 6,056 links are ranked based on their occurrence in the data set.

In the next step, we analyze the content of some of the most frequently shared domains (including Facebook and YouTube links), while also linking our analysis to the findings from Study I from this research project. The news domains identified as relevant for the study are further analyzed in terms of content produced, transparency regarding editorial practices, as well as advertising practices.

Thereafter, and so as to complement the analysis of news domains, we examine the most popular, politically substantive hashtags shared in this period. To do so, we firstly identify all tweets which contained hashtags, after which we strip down all other text content from the tweets except the hashtags. These hashtags are then compiled into a list which we use to rank the occurrence of each hashtag and to identify the users which shared these hashtags. We use this information to determine which topics were most prominent in political discussions among North Macedonia's Twitter users, as well as which users contributed to the popularity of these topics.

¹ For more information on the political context in North Macedonia, please refer to Study I of this research project

² *Time.mk* does not provide extensive information regarding its Twitter aggregator, for which reason the validity of the data set cannot be confirmed.



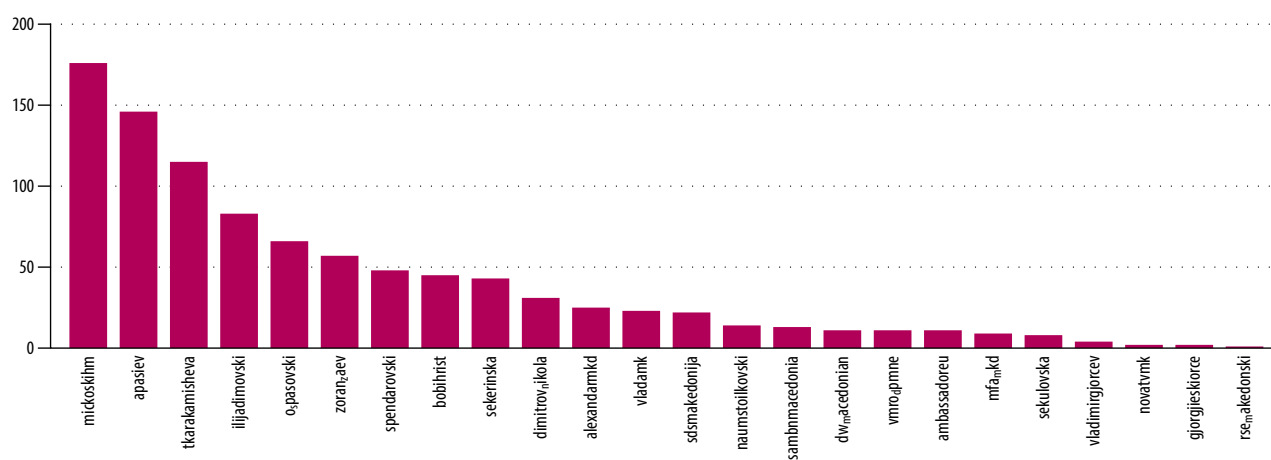
Where do the identified links go?

We begin with the analysis of all external links shared, a total of 6,056 links. As a majority of these links lead to Facebook and YouTube, we firstly examine these links in an attempt to identify video or Facebook content that can be linked to computational disinformation. For the analysis of YouTube links, we extracted the title of each video and the channel of the account that posted the video. A manual review of the findings revealed minimal presence of political content, as almost all videos were either music videos or miscellaneous content. Therefore, we conclude that no (foreign) disinformation was shared through YouTube videos in the period surrounding the election.

We then manually review the links leading to Facebook posts. While this part of the analysis did not lead to relevant findings about influential domains, the analysis showed that tweets from VMRO-DPMNE leader Hristijan Mickoski which contain links to his Facebook profile made

it among the top tweets of the day 23 times. No other user in the data set managed to include a tweet redirecting to Facebook among the top daily tweets this many times – a finding which we consider indicative of high engagement from the network of automated and semi-automated accounts identified in Study I, which focused on amplifying the activity of VMRO-DPMNE and Levica officials through extensively interacting with and retweeting their posts. Based on this finding, we also examine how many times a tweet posted by one of the 26 politicians and media outlets which formed the basis for Study I made it among the overall data set of top daily tweets. The accounts examined in Study I were selected so as to obtain a near-representative sample of the country's political landscape, taking into account their activity rates and the size of their follower networks. Figure 1 shows the number of times that a tweet posted by one of these accounts made it among the top daily tweets.

Figure 1. Number of times that an account of a politician or media outlet from Study I made it among the top daily tweets



The figure shows that as in the case of tweets redirecting to Facebook posts, Hristijan Mickoski (mickoskihm) is also the most prevalent political figure in the entire data set of top daily tweets, closely followed by Levica leader Dimitar Apasiev (apasiev), vocal VMRO-DPMNE proponent Tanja Karakamiseva (tkarakamiseva) and former VMRO-DPMNE spokesperson Ilija Dimovski (ilijadimovski). This is a disproportionately high presence in the top daily tweets for these figures, as their Twitter accounts have substantially less followers (Hristijan Mickoski has 5,765 followers, Dimitar Apasiev 8,662 and Tanja Karakamiseva 4,957) than the 21,000 followers of PM Zoran Zaev (zoran_zaev) or the 16,000 followers of the Minister of Foreign Affairs Nikola

Dimitrov (ndimitrov), whose tweets made it among the top daily tweets far fewer times, ranking sixth and tenth in this list, respectively. This finding suggests that posts from the accounts of VMRO-DPMNE and Levica officials were liked and retweeted by a network of followers capable of creating high levels of engagement, sufficient to include their posts among the top daily tweets a disproportionate amount of times when considering the size of their follower networks. It is likely that a large part of this engagement can be traced back to the activity of the network identified in Study I of this project, as this network accounted for a majority of interactions with the accounts of VMRO-DPMNE and Levica officials.

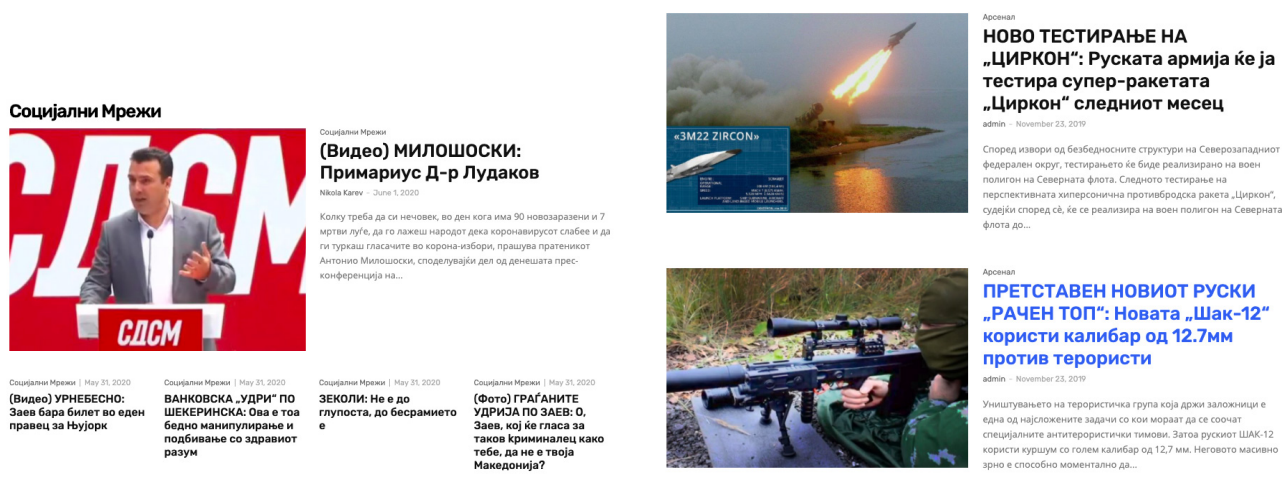
Having examined the relevant YouTube and Facebook links, we examine the remaining domains shared. Firstly, we automatically extract the top-level domains of all links (e.g. .com, .org, .mk, .ru, etc.) to determine whether there was substantial presence of content from foreign outlets. We found that few international links made it among the most popular tweets. However, Serbian *Sputnik* and *Srbija Danas* ['Serbia Today'], a right-wing outlet from Serbia named after *Russia Today* which sources parts of its content from Russian state-funded outlets, were shared on a few occasions. Both of these sites, like other Russian and pro-Russian outlets in Serbia, have an "Arsenal" news category which consists of coverage about Russian military advancements (e.g. new weapons or missile testing), a finding that is relevant further in the analysis.

A ranking of the most frequently occurring domains shows that the most shared news domain in this period is *Infomax*, an outlet focused on promoting the activity of VMRO-DPMNE, while vilifying SDSM officials (primarily PM Zaev) and contesting North Macedonia's name-change – content closely related to the views promoted by the network of automated and semi-automated accounts identified in Study I. This outlet made it among the top daily tweets 132 times, and was preceded only by links leading to Etsy, Facebook and YouTube. This is unexpected, as *Infomax* is not a popular, mainstream news outlet in the country (it is ranked as the 67th most visited domain in North Macedonia) (Alexa 2020). *Infomax* predominantly made its way to the top tweets of the day through its own

account @infomaxmk, which has since been suspended for violating Twitter's Terms and Conditions (sometime around July 2020). This was likely due to spamming behavior through excessive posting, which introduces security risks for Twitter users (Twitter Help Center n.d.). When articles from *Infomax* were shared by other users, this was mostly done by accounts belonging to the network identified in Study I, including @Mini59150498, @zoki79889487, @fohwyjufbyxsahy and @Mince6298498, suggesting that this network not only increased the visibility and engagement of the accounts of political actors, but also played a part in increasing the visibility of content from *Infomax*, suggesting potential cooperation between outlets like *Infomax* and those managing the identified network.

All of the articles on *Infomax* are written by four authors, each of which contributes well over 10 articles per day, which suggests that most of the content on the website is likely republished from other sources. One of the frequent authors is named Nikola Karev, likely a fake name alluding to a revolutionary hero from the 19th century, while other articles are written by an author named 'admin'. Moreover, the website offers no information about its ownership structure or editorial policy – practices which are not aligned with the expectations of public-service journalism and which introduce challenges for holding those behind *Infomax* accountable for the disseminated content, while also raising concerns about the credibility of this content. Image 1 shows examples of the type of content shared by *Infomax*.

Image 1. Infomax articles attacking PM Zaev (on the left) and promoting Russian weaponry under the 'Arsenal' section (on the right, showing an article about a new Russian gun and Russian missile testing)



Additionally, we found that *Infomax*, like the Serbian outlets noted above, also has an "Arsenal" category

focused on reporting about Russian military and weaponry advancements. Such a category is not common among



outlets in North Macedonia (with the exception of North Macedonia's *Russia Beyond the Headlines*) and many of the articles within this category on *Infomax* are sourced from Serbian *Sputnik* and translated into Macedonian, suggesting at least indirect links between *Infomax* and Russian state-funded outlets in the region. This finding suggests that like in Serbia, outlets in North Macedonia may begin to source their content from the freely available content provided by Russian state-funded outlets, raising concerns about the continued increasing influence of these outlets in the region.

The second most shared domain after *Infomax* was *Frontline* (88 times). On the surface, *Frontline* appears to be an ideological counterpart to *Infomax*, with content largely in favor of North Macedonia's Euro-Atlantic integration and in support of SDSM policies. Like *Infomax*, this outlet predominantly found its way among the top tweets of the day through its own account @frontlinemk. As with *Infomax*, the high presence of *Frontline* among the most shared domains is surprising, since the outlet is not among the most popular news outlets in the country. However, unlike *Infomax*, *Frontline* does provide information regarding its editor, as well as authorship information for a majority of its published articles.

When content from *Frontline* was shared by Twitter users, this was done by a group of users entirely distinct from those sharing *Infomax*, and a manual review of these accounts suggests that most represent real Twitter users. Regardless, it is questionable whether the high presence of this outlet among the top daily tweets can be explained by organic engagement from real users. This finding suggests that a network of users may have also contributed to the increased visibility of content favorable to SDSM and North Macedonia's Euro-Atlantic integration, however beyond the high presence of *Frontline* among the top daily tweets, the current research project has not uncovered additional evidence in support of this conclusion.

Outlets like *Freeglobe*, *Kolozeg* and *DokazMakedonija* ['EvidenceMacedonia'] did not make it among the most popular tweets often. However, the content that they share and their operational practices are relevant for the current

study. Namely, all of these outlets publish conspiratorial content, while providing minimal information about the funding, editorial policy or authors of articles. Most of the articles shared by these outlets are based on conspiratorial narratives about George Soros, Bill Gates and vaccines, as well as domestic political content mixed with right-wing narratives and pro-Russian content. Similarly to *Infomax*, all articles published on *Freeglobe* are written by an author named 'admin' and no information is available regarding the ownership or editorial policy of the website. The outlet *Kolozeg* also does not provide information regarding the ownership or editorial structure of the website, while all articles are attributed to an author identified solely as 'Kolozeg'. Both of these sites service numerous ads that lead to dubious merchandise websites, largely related to health products, leading to questions about the funding sources which support the activity of the site. The website *Dokazmakedonija* ['EvidenceMacedonia'] also does not list its owners or authors, while most of the advertising banners on the website are fake advertising banners from real products which cannot be interacted with, suggesting that they were used to create a false sense of credibility about the outlet's reporting (see Image 3). These outlets are primarily relevant for the current analysis as they perfectly represent the profile of outlets that can contribute to the success of disinformation campaigns based on extreme narratives. All of these outlets are not transparent about their owners, authors or sources of funding, making it impossible to hold anyone accountable for the consequences of the content they publish and thus allowing for the publishing of unverified reporting based on sensationalist and conspiratorial premises, potentially including content linked to sponsored disinformation campaigns.

It is additionally relevant to consider that during the period surrounding the election, the outlets noted above, as well as *Infomax*, all serviced a banner promoting the campaign *KupuvajteMakedonskiProizvodi*['BuyMacedonianProducts'] – a VMRO-DPMNE campaign developed in response to the covid-19 pandemic. This finding, combined with the lack of real advertising banners, suggests that the activity of these outlets may have been funded and supported by domestic political actors sympathetic to VMRO-DPMNE.

Image 2. Freeglobe.mk landing page serving conspiratorial right-wing content

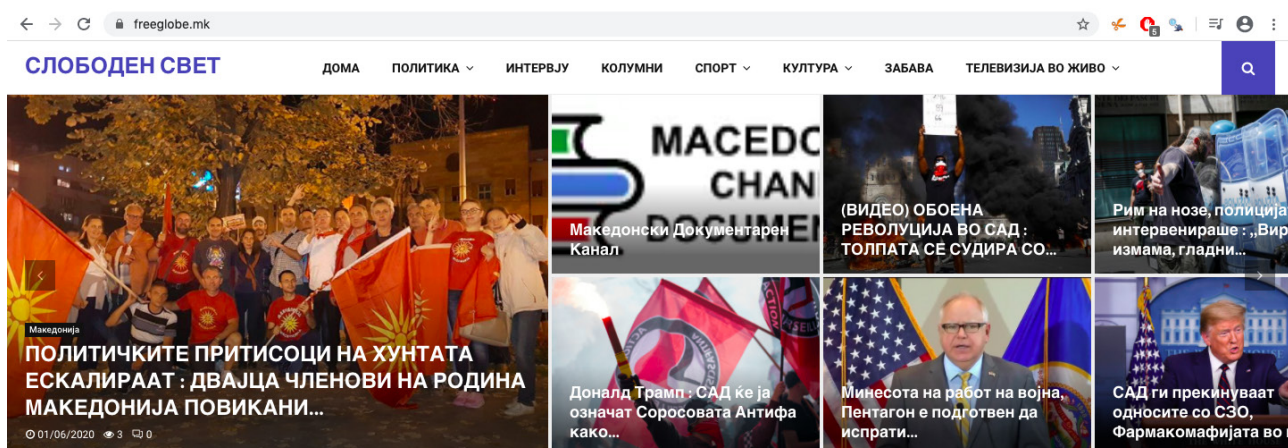
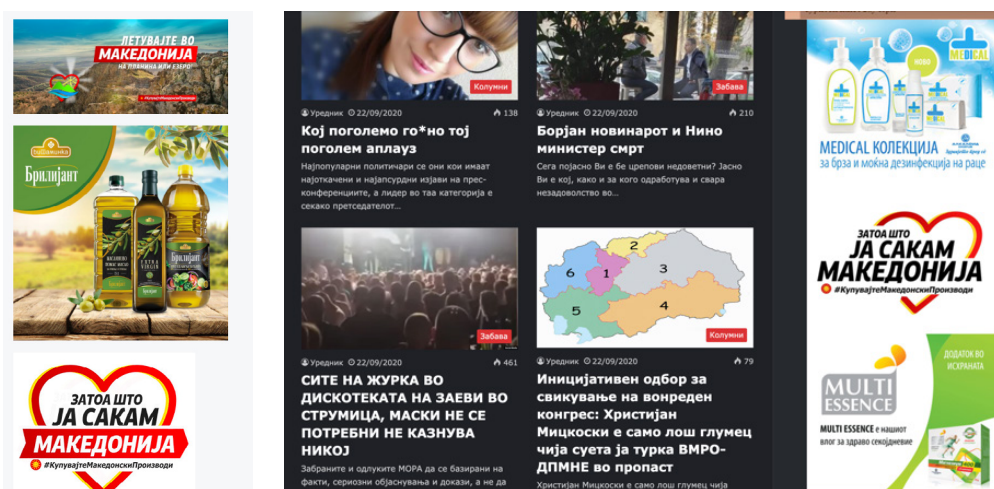


Image 3. Fake ad banners on dokazmakedonija.mk, including the VMRO-DPMNE campaign #KupuvajteMakedonskiProizvodi[‘Buy Macedonian Products’]



The analysis of content from the top daily tweets shows that the visibility of VMRO-DPMNE officials, as well as Levica leader Dimitar Apasiev, was inflated by a network likely connected to the one identified in Study I of this research project. The engagement with posts from these actors by the network ultimately resulted in an inflated representation of the popularity of these actors and their views – a common goal of computational disinformation campaigns. Further, the analysis of domains shared showed that no disinformation campaigns were orchestrated through video content, as all YouTube links examined were music videos or miscellaneous content. The analysis of news domains shared showed that Russian state-funded outlets, as well as Serbian outlets which base their reporting on Russian state-funded news, did occasionally influence discussions in this period. More relevantly, the findings show that *Infomax*, a relatively obscure outlet which is ideologically affiliated with VMRO-DPMNE and opposed to North Macedonia's name-change, was the most shared

news domain in this period. This outlet, with its unique 'Arsenal' category based on content sourced from Serbian *Sputnik*, has at least indirect links to Russian state-funded outlets, suggesting that content from Russian state-funded outlets may become increasingly influential in North Macedonia, as it has in neighboring Serbia. The shutdown of the official Twitter account of *Infomax* shows that the account breached Twitter's Terms and Conditions, likely due to foul play in the dissemination of its content, most likely through spamming behavior, resulting in above average activity rates. The presence of the VMRO-DPMNE election campaign 'Buy Macedonian Products' on *Infomax*, *Kolozeg*, *Freeglobe* and *DokazMakedonija*['EvidenceMacedonia'] – outlets sympathetic to VMRO-DPMNE and pro-Russian narratives, which also offer almost no information about their operational practices – suggests that these outlets were likely involved in promoting the views of political actors which fund their activity.



Hashtag analysis

In the next step, and so as to complement the analysis of the domains shared by examining the key topics in this period, we examine the most shared hashtags in the data set. As described above, we firstly applied a regex search string to identify all tweets which contain hashtags, after which we stripped all text from these tweets except the hashtags. Thereafter, we compiled all hashtags in a list and ranked their occurrence. In the next stage, we manually reviewed the 300 most frequently occurring hashtags in this period and selected all hashtags that were politically substantive. A hashtag was considered politically substantive if it explicitly related to North Macedonian domestic politics (i.e. by mentioning SDSM, VMRO-DPMNE, Levica or their representatives), or if it explicitly mentioned North Macedonia's foreign policy, primarily its Euro-Atlantic integration process (e.g. by mentioning the EU or NATO).

A manual review of the 300 most frequently occurring hashtags revealed the presence of numerous normal hashtags, such as #dobroutro [#goodmorning] and #tretasmena [#nightshift]. Within these, we identified 40 common, politically substantive hashtags related to issues of identity or North Macedonia's foreign policy, each of which appeared at least 10 times in the period studied. These hashtags largely revolve around three themes, namely: personal attacks towards PM Zaev or SDSM officials (#komunjaro [#communists], #prikazniodzaevistan[#storiesfromzaevistan]), support for the 'bojkotiram' movement (#dvizenjebojkotiram[#I am boycotting], #apsaana,) and opposition to the name-change (#nevernorthernalwaysmacedonia, #severdzeni[#northerners]). These hashtags were mostly shared by users which match the repetitive naming patterns prevalent in the network of accounts identified in Study I of this research project, including @mpp2mLJTRMmAZ3V, @uJHyOw0SgfDI4Pv and @Mini59150498. Some of these users, such as @ivo62294418, @marko19954785, @bruno2101978 and @dean06618857 have since been deleted, potentially suggesting temporary accounts created for the purpose of promoting these hashtags and similar content in the period surrounding the election. Almost none of the most common, politically substantive hashtags were designed to express support for the name-change and North Macedonia's Euro-Atlantic integration.

Personal attacks towards PM Zaev, as exemplified by the first group of hashtags noted, played a central role in the activity of the network identified in Study I of this project,

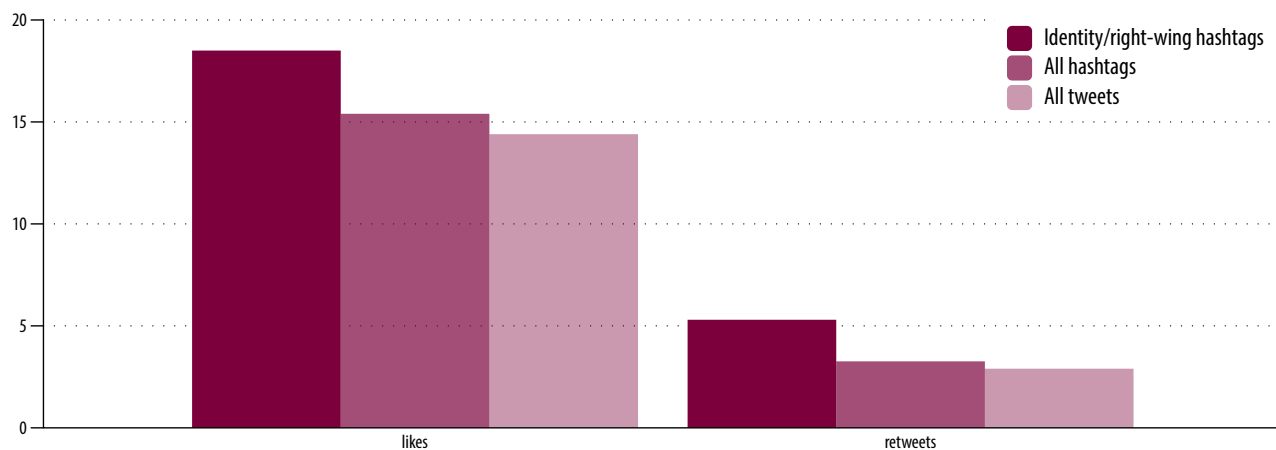
as many of the accounts examined almost exclusively focused on generating hateful discourse in response to his online activity or that of other SDSM officials. This engagement, as well as the hashtags noted here, generally focus on the political failures of SDSM officials, the socialist background of the party (#komunjaro[#communists]) and meme-based personal attacks towards party officials (#prikazniodzaevistan[#storiesfromzaevistan]). Given the outcome of the 2020 election and the continuation of the SDSM-led ruling coalition, this type of content is likely to continue playing an essential role in computational propaganda approaches within the country in the future.

The hashtag #apsaana (best understood as an equivalent of the 'lock her up' campaign against Hillary Clinton in reference to SDSM officials), has played an important role in shaping political discussion on mainstream Twitter as part of the continued activity of the #bojkotiram ['I am boycotting'] name-change opposition movement, significantly contributing to the popularity of numerous news items and memes in opposition to SDSM, the name-change and the country's Euro-Atlantic integration. The continued popularity and relevance of this hashtag, as well as that of the hashtags directly based on opposition to the name-change (e.g. #nevernorthernalwaysmacedonia) suggest that such issues will continue to play a pivotal role in future political discussions, demonstrating the continued cleavages in public debates within the country, particularly so in the context of discussions about the Euro-Atlantic future of the country. As such, it is likely that hashtags and content based on this topic will continue to represent a viable entry point for computational propaganda campaigns in North Macedonia in the foreseeable future.

Finally, we compared the engagement levels of these hashtags to other tweets in our data set in Figure 2. The figure shows that tweets containing one of these 40 hashtags generated more engagement (both retweets and likes) than all other tweets in the entire data set of top daily tweets. Given that these hashtags were mostly shared by users identified in Study I of this research project, it is safe to assume that their dominance among hashtags in the top daily tweets is a direct result of inflated engagement rates by automated accounts. These findings are aligned with the findings from the analysis of influential domains, the inflated presence of VMRO-DPMNE and Levica officials among the top daily tweets, as well as with the findings from Study I, suggesting that mainstream discussions in

the period surrounding the election were largely shaped by right-wing networks opposed to North Macedonia's Euro-Atlantic integration and sympathetic to VMRO-DPMNE and Levica.

Figure 2. *Engagement rates of tweets with identity/right-wing hashtags compared to engagement rates of other tweets*



Conclusion

As in Study I of this research project, the analysis shows that computational propaganda methods shaped online political discussions in North Macedonia in the period surrounding the 2020 election. Firstly, the analysis of (news) domains shared showed that a network of users aided the high presence of the outlet *Infomax*, a relatively obscure outlet in North Macedonia. The banning of the official account of *Infomax* on Twitter further points to the possibility that the high presence of this outlet was achieved through foul play, presumably based on excessive posting of content via illicit approaches, which violated Twitter's Terms and Conditions. *Infomax*, and other outlets identified in this analysis, including *Kolozeg*, *Freeglobe* and *DokazMakedonija* provide almost minimal information regarding their ownership structure or authors and likely republish content from other sources, including Russian state-funded outlets. The presence of the VMRO-DPMNE campaign banner 'Buy Macedonian Products' on these outlets, as well as the lack of real advertisements serviced by these websites, points to the possibility that these outlets are supported and funded by VMRO-DPMNE or individuals sympathetic to their cause. The potential involvement of domestic political actors in the dissemination of content from these outlets is further supported by the inflated presence of tweets from VMRO-DPMNE leader Hristijan Mickoski and Levica leader Dimitar Apasiev among the top daily tweets, despite their relatively low follower rates when compared to other high-profile political figures in the country. It is likely that this high presence was made possible through contributions from accounts associated with the network identified in Study I of this research project. Finally, the hashtag analysis demonstrated that a majority of the popular, politically substantive hashtags on North Macedonian Twitter focused on right-wing, identity-related issues. Many of these hashtags were shared by a group of users belonging to the network identified in Study I, while other accounts contributing to these hashtags have since been deleted, suggesting the use of temporary accounts designed to promote these hashtags in the period surrounding the election. In contrast, almost no hashtags were found in support of North Macedonia's Euro-Atlantic integration, a representation of public opinion not aligned with extensive research which shows that North Macedonian citizens are largely in favor of this process, suggesting that the overwhelming popularity of these hashtags is unlikely to be the result of organic activity.

While the current findings cannot conclusively point to foreign influence in the period surrounding the 2020

election, it is clear that foreign actors interested in developing disinformation campaigns in North Macedonia can easily cooperate with existing local outlets with questionable financing and agendas, some of which already adopt content from Russian state-funded outlets. The spreading of this content would then be ensured by the large number of accounts designed to be sympathetic to such narratives. Foreign actors interested in further inciting opposition to North Macedonia's Euro-Atlantic integration process need only to tap into the already robust resources available, and some may have already done so. Provided continued uncertainty on the Euro-Atlantic integration path of Western Balkan countries and the continued existence of the network of automated accounts identified in Study I of this research project, it is likely that computational propaganda approaches focused on opposition to the Euro-Atlantic integration of North Macedonia will remain a credible threat in the country.

Researchers examining the influence of (foreign) disinformation campaigns in the region are encouraged to follow the approach suggested in the current study for the analysis of the most popular and influential domains. In particular, we encourage future researchers to take note of the transparency of information provided by outlets flagged as suspicious, as well as to examine the advertising practices of these outlets. Despite the lack of substantive findings from the analysis of YouTube videos shared in this study, we encourage future researchers to further examine the potential spread of (foreign) disinformation campaigns through video content – an increasingly relevant avenue for the dissemination of such campaigns. Moreover, we encourage researchers to examine the prevalence and engagement rates of posts from various political leaders, so as to identify potentially inflated visibility levels of specific political actors as a means for identifying networks that contributed to this presence. Finally, our findings suggest that an analysis of popular hashtags during an electoral period can have substantial merit for the identification of the dominant topics in a given period. An overwhelming presence of ideologically uniform hashtags (such as the right-wing, identity-based hashtags identified in the current study), would suggest artificial promotion of these hashtags, especially if these are not aligned with findings public opinion research – an additional potential approach for detecting networks of users designed for increasing the popularity of these topics.



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About the author

Ognjan Denkovski is a lecturer in methods, statistics and computational social science at the University of Amsterdam, where he obtained his MSc in Communication Science. He is also a Research Associate at the Global Disinformation Index. His primary work is based on computational social science, with emphasis on the use of text-as-data methods, online data and machine learning for analyzing political rhetoric and fringe narratives. He has contributed towards a publication examining the links between organized crime and terrorism in Croatia and Slovenia, party strategy debates for the Friedrich

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About the project

“Western Balkans at the Crossroads: Ways Forward in Analyzing External Actors’ Influence” is a follow-up project that aims to build upon a knowledge base established in the preceding project “Western Balkans at the Crossroads: Assessing Non-Democratic External Influence Activities,” which mapped, analyzed and publicized Russian, Chinese, Turkish, and Gulf States’ influence activities in the region. The innovative project focuses on in-depth socially rooted research and investigative journalism. Its design reflects the aim to go beyond conventional analytical frameworks, overcoming ideologically constructed stereotypes and methodological nationalism while combining a variety of methodological approaches from security studies to visual anthropology.

Project outputs consist of fifteen analytical studies and fifteen journalistic articles drawing on their findings. Major observations on external actors’ influence gathered throughout the work on the project will be summarized in a final reflection paper.

Project duration: 10/2019 – 03/2021

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PSSI is a non-profit, non-governmental organization established in early 2002 to advance the building of a just, secure, democratic, free-market society in the Czech Republic and other post-communist states. PSSI’s mission

is to build an ever-growing group of informed and security-minded policy practitioners dedicated to the development of democratic institutions and values in Central and South-East Europe.

