Killed by Division:
Sentiment Analysis Towards Juan Guaido by Venezuelan Opposition Factions Between 2019-2021

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Abstract

Using python, I collected 316,141 tweets from 90 political leaders of the Venezuelan opposition to illustrate the changing sentiment towards Guaido and the interim government in Venezuela among different political factions in the 2019-2021 period. The project illustrates Guaido's popularity over time using retweet count and sentiment analysis since he was sworn as interim president in January 2019 and the division of the Venezuelan opposition as well. As shown in sentiment analysis, not only does the overall sentiment towards Guaido among interim government officials decrease over time, but also many of his peaks correspond with increased expectations of political change that would not materialize and generate valleys in sentiment as a result.

Introduction

The 2018 presidential elections in Venezuela occurred amidst an environment of decreased political support for the regime and increased political repression and persecution. After thousands of politically-motivated detentions and murders, a full-fledged humanitarian crisis, and a disruption of the political institutions and electoral processes, the 2018 presidential elections were deemed "undemocratic" by the Organization of American States and several international observers. The Venezuelan opposition, in control of Venezuela's legislative body, interpreted articles 233 and 350 of the Venezuelan constitution and declared a vacancy in the executive, ruling that the president of the opposition-controlled National Assembly, Juan Guaido, was in his right to assume the executive power as interim president until new presidential elections could be conducted. The opposition movement–supported by nationwide protests against the regime–gained the recognition of over sixty governments as Venezuela's legitimate government and was quickly able to control diplomatic representations and assets abroad. However, while foreign recognition and internal protests gave legitimacy to the figure of interim government, Guaido saw a steep decline in his popularity as the international movement to remove Maduro failed to achieve its objectives in the long term. By negotiating with the regime, failing to bring about a military movement that could topple Maduro, and assuming an ambivalent attitude toward foreign intervention, Juan Guaido's support declined over time. The division in the Venezuelan opposition has created three different factions that each have their own respective strategies to achieve a change in the government: a) the pro-interim government faction (advocates for the use of international sanctions, the recognition of a parallel government and negotiations with the regime), b) the electoralist opposition (advocates for the opposition's participation in elections with Maduro in power regardless of the Executive's abuses), c) the right-wing (encompasses moderate figures who advocate for harsher sanctions and support the figure of the interim government as well as others who advocate for the abolishment of the interim government and the sabotage of any negotiation with the regime or election while Maduro holds office). As the interim government's strategy and the participation of the opposition in regional elections have failed to generate a change in government, the right-wing opposition has gained greater support in the Twitter-sphere.

Twitter is a widely used social media platform in Venezuela that has become a public forum for political debates and engagement among different sides of both the government and the opposition. In this project, we extracted tweets from opposition leaders from three different factions to measure sentiment towards Juan Guaido over time using Vader sentiment analysis. Guaido remains a central figure of the Venezuelan opposition, but his support has decreased over time, especially following two major defeats in 2021: the regime's abandonment of negotiations and the defeat of the Venezuelan opposition in the November regional elections. Following the regional elections, Maria Corina Machado, a leader of the right-wing opposition, has seen an increase in popularity, as measured by retweets on Twitter, while Juan Guaido's popularity has declined.
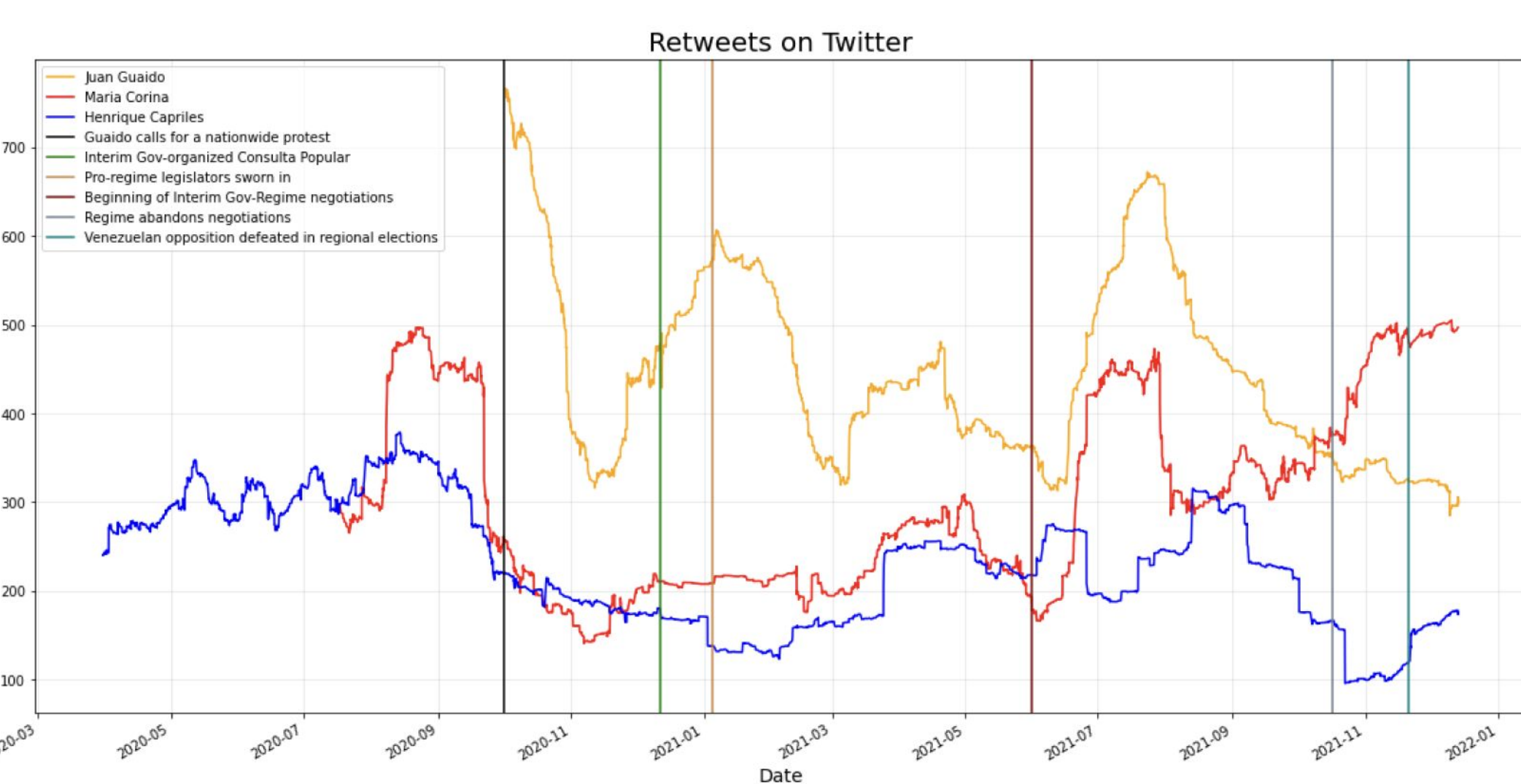
In the time-series above, the retweet count is plotted for three leaders of the Venezuelan opposition: Juan Guaido, Maria Corina Machado, and Henrique Capriles from the three most recent data (between 3236-3249 tweets per user), with significant events plotted as colored lines on the X-axis described in the legend. Two significant moments are the sharp decrease in retweet count of Juan Guaido's tweets following a failed call for a nationwide protest in 2020-10 and the decrease of Guaido's retweets while Maria Corina Machado's retweet count grew following the 2021-11 regional elections.

Materials

Google Colaboratory, Python, Twitter Database, tweepy library, Vader Sentiment Analysis, Google Translate API, Tableau, Excel.

Methodology

Alongside Bloomberg reporter Tony Frangie and Economist and Political Scientist from American University, Daniel Acosta Rivas, I compiled a list of 90 political leaders of the Venezuelan opposition and divided the political leaders in three broad categories:

a) Interim Government Officials or early supporters (despite potential changes in allegiance over time)
b) Electoralist opposition (members of the G4 that were not government officials in the interim government)
c) Right-wing

After dividing the opposition leaders into these categories, we subsequently used Tweepy to extract between 3236 and 3249 tweets (each) for Juan Guaido, Henrique Capriles, and Maria Corina Machado, the main political leaders for each respective faction of the opposition. Then, I selected the retweet count and tweet created date, transformed the tweet created date into a datetime object, plotted the retweet count in a time-series, and added a legend. Afterward, I researched relevant events throughout the 2020-2021 time period to annotate the time-series and explain significant changes.

Subsequently, tweets for all the users in the groups were extracted using tweepy. Since Guaido was sworn in as interim president in January 2019, our initial intent was to carry out a time-series with sentiment analysis that covered the entire period of interest. Out of the 90-user data-set, we extracted 316,141 tweets (approximately 3,513 tweets per user). Although we initially planned to extract 6,000 tweets per user to cover the entire time range, we ran into limits established by the Twitter API that prevented us from extracting a larger sample per user.

However, the limitations on tweet extraction prevented us from reaching the entire period of interest for all users. We were able to extract tweets from 64% of the accounts for the 2019-2020 period as shown in the Tableau visualization below.

Tweets Collected by User
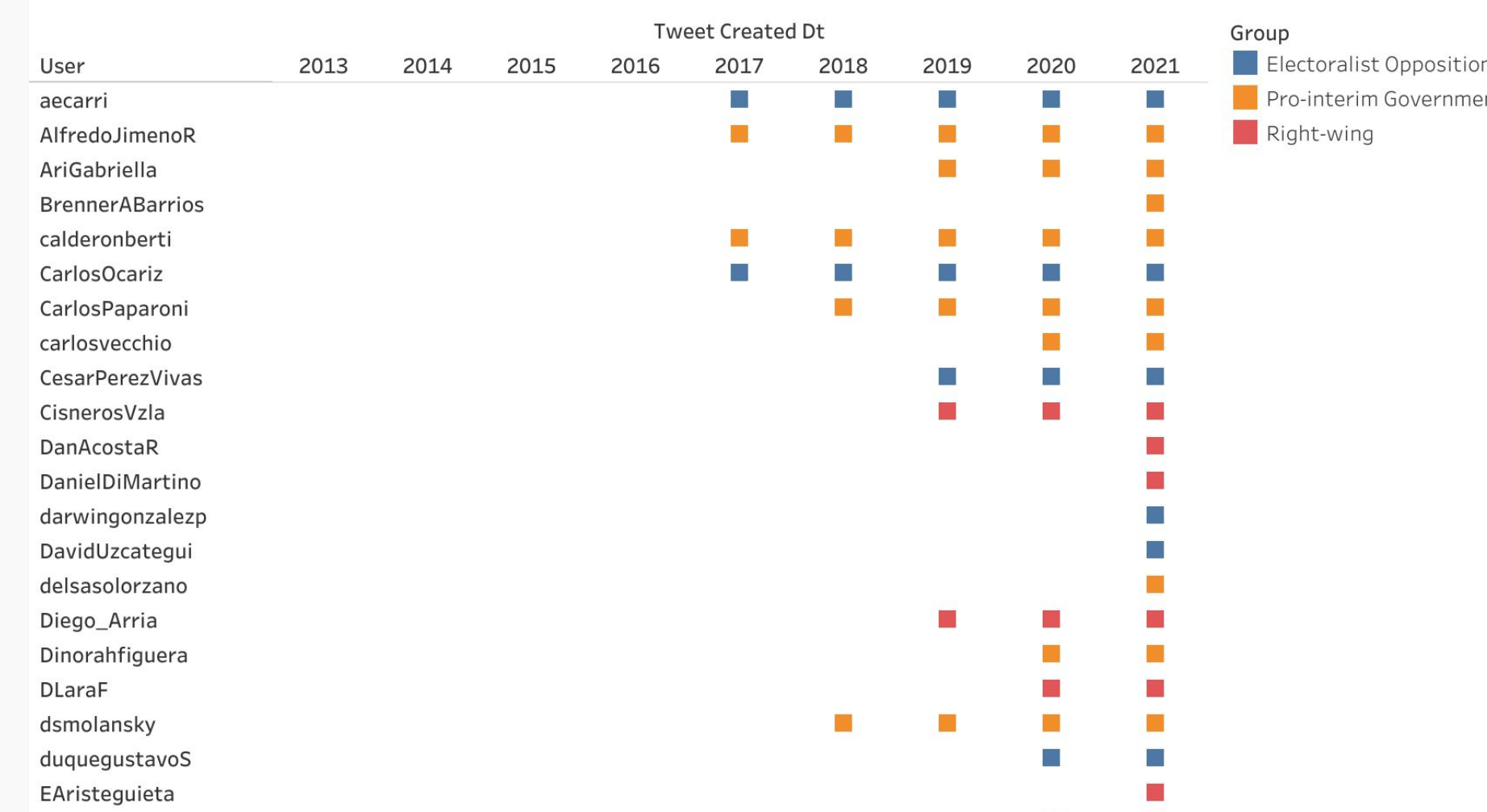
In the visualization above the data for which years there were tweets for each one of the twitter accounts that were scraped (full visualization available at https://public.tableau.com/app/profile/raul.romero/viz/TweetsCollectedbyUser/Sheet1)

After visualizing the length of the data for each user, the tweets were sorted by date and two data frames were created with two different sets of interest: 2019-2020 and 2021, respectively. Then, the str.contains function was used in both time-periods, using the append method to iterate through the following terms of interest that mentioned either Guaido or the Interim Government: 'jguaido' (Guaido's user), 'Guaido', 'guaido', 'interino' (interim), and 'interinato' (a negative, politically-charged term used to refer to the interim government). By sorting by date and then by the identified terms, the tweet count for the 2019-2020 period was reduced to 7,425 and in the 2021 period to 4,935 tweets of interest.

Since the Vader sentiment analysis tools are optimized for the English language, the Tweets in both periods (2019-2020 and 2021) were translated from Spanish to English using the translator.translate method from the Google Translate API. Then, the translations were cleaned after loading preprocessing from texthero and using the clean_tweet method.

Then, the Vader sentiment analysis polarity score was calculated for each user for each time period and displayed in three different visualizations grouped by users. Afterward, the mean aggregate sentiment score was calculated for each group and displayed in a bar plot.

Lastly, the score over time was plotted in a time series for both periods for each group of the Venezuelan opposition.

Results

After calculating sentiment analysis towards Guaido and the Venezuelan Interim Government for each Twitter user in 2019-2020 and 2021, we proceeded to plot the mean sentiment score for each faction.
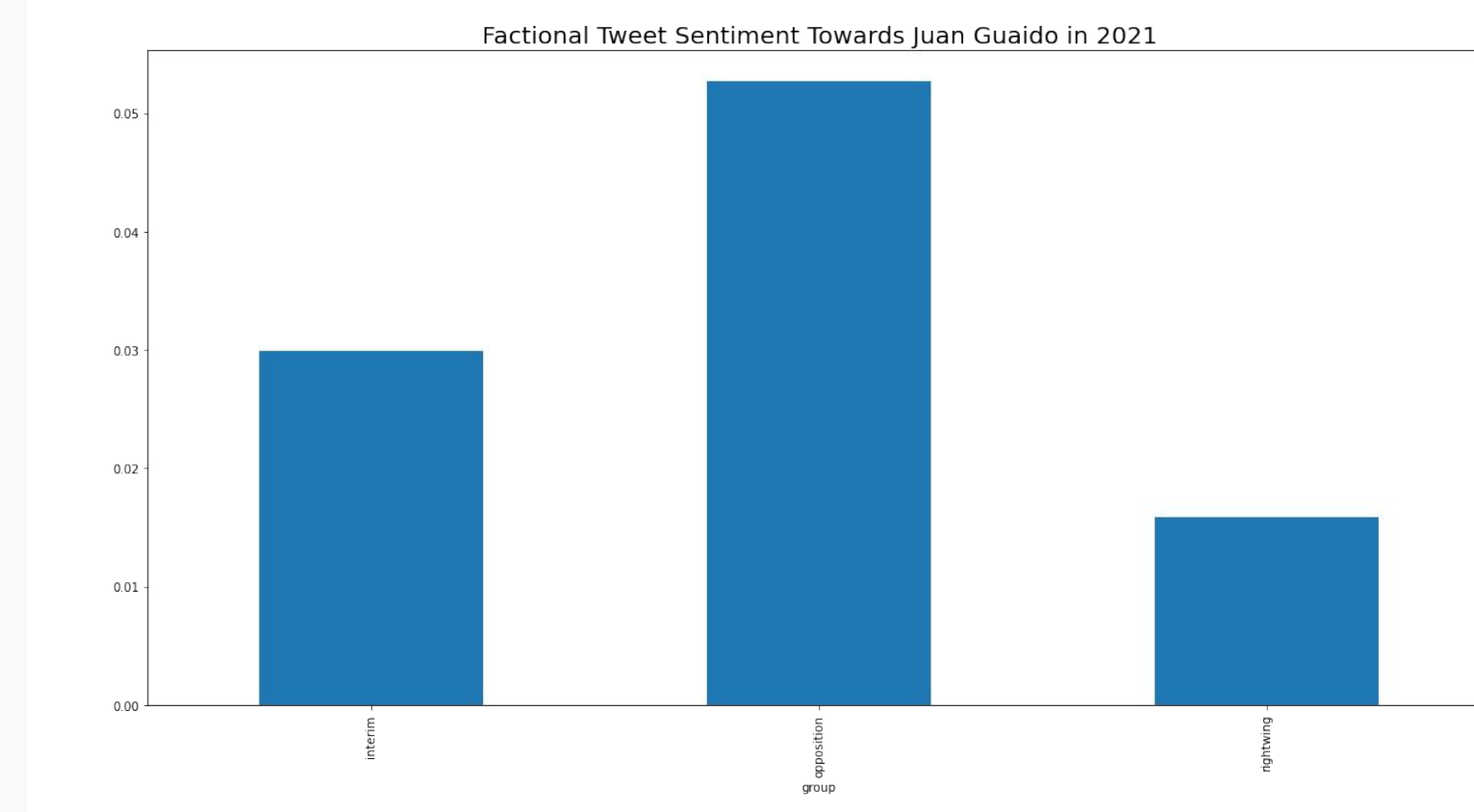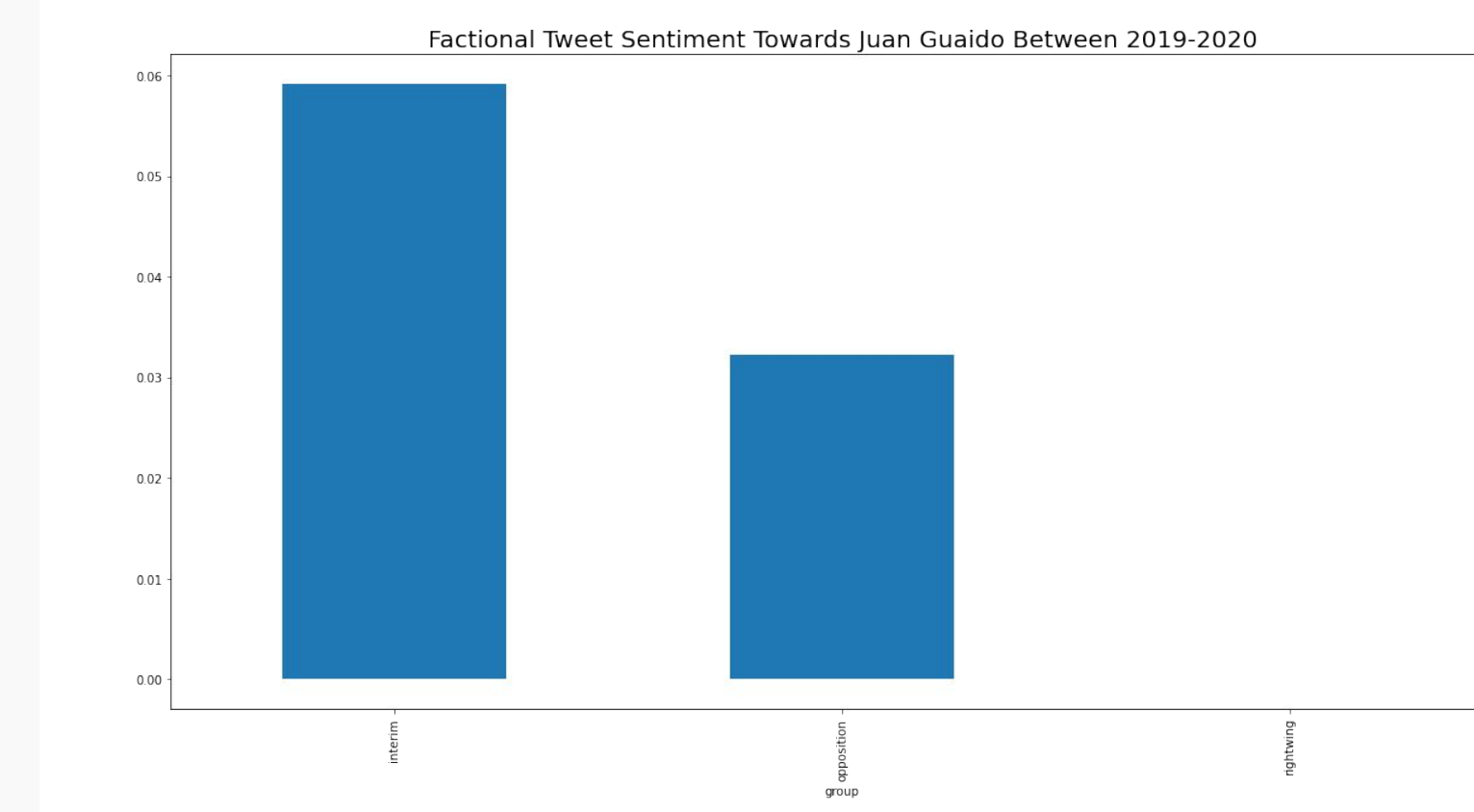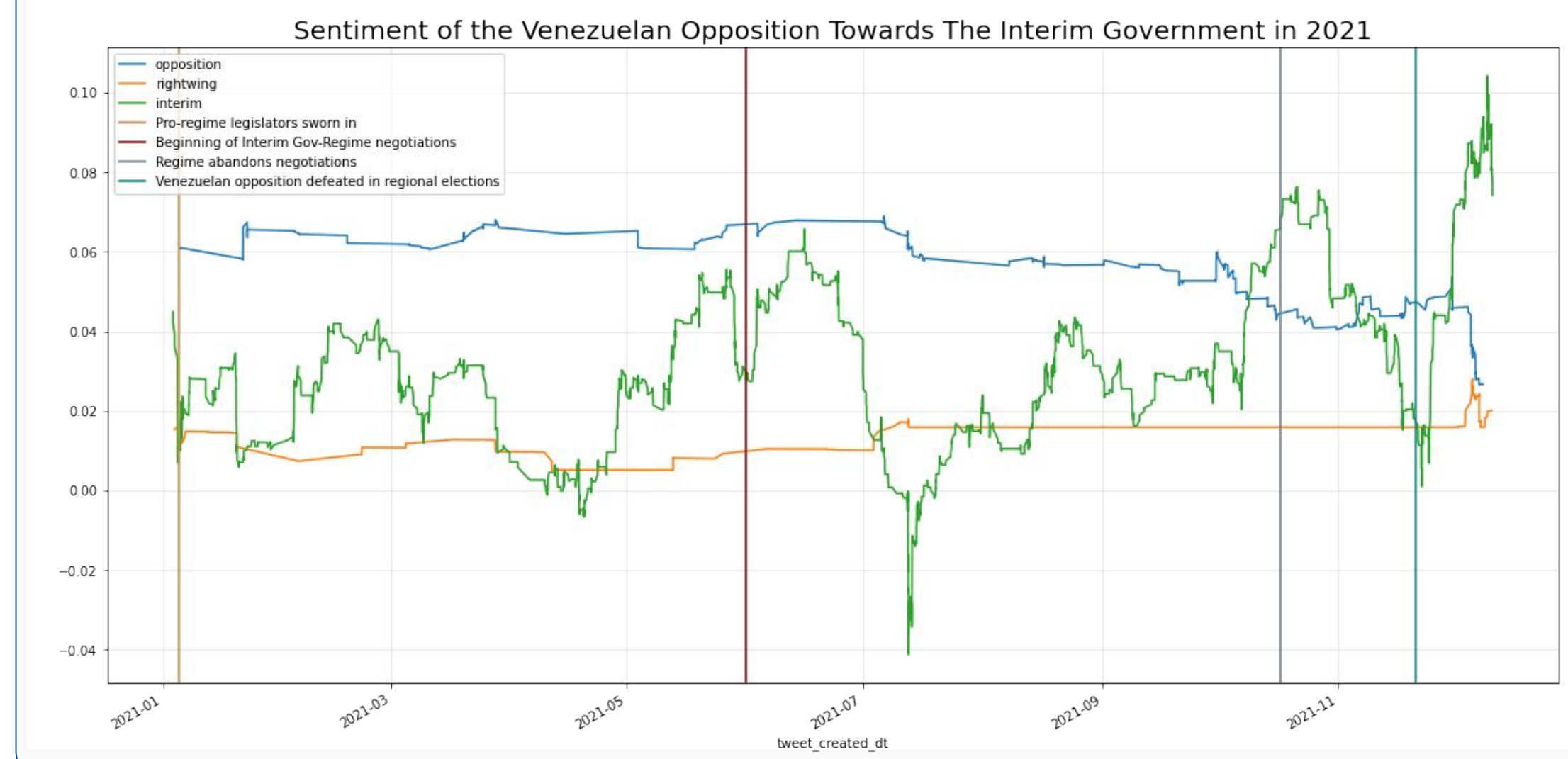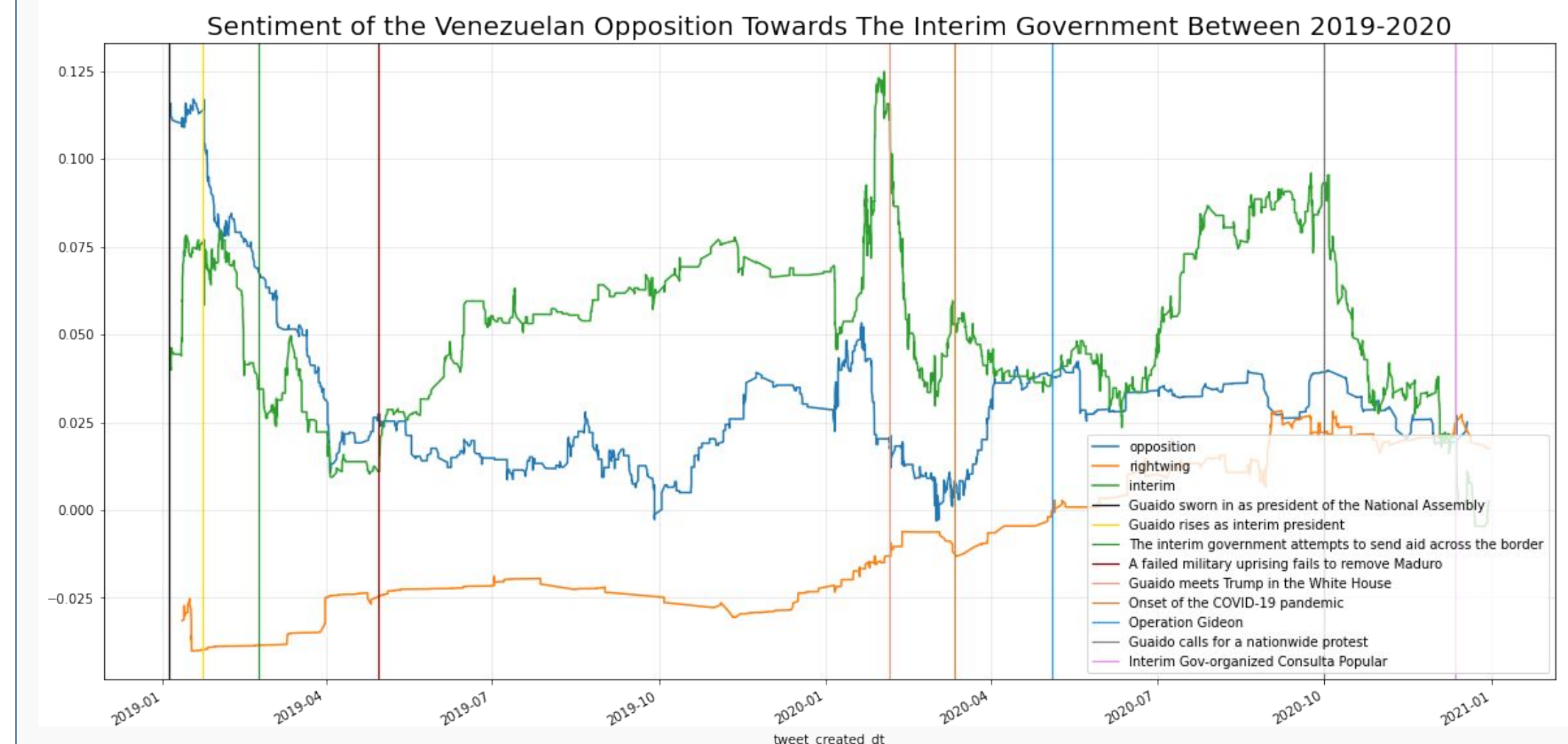

As expected, in the 2019-2020 period the interim government officials were highly supportive of Guaido (with a 0.06 mean sentiment score), whereas the electoralist opposition was moderately supportive, and the right-wing faction was slightly negative (-5.108557e-07). In 2021, the support from members of the interim government decreased as several high-profile administration officials resigned after profound strategic disagreements and corruption scandals. The increase observed in the electoralist opposition is likely to be the result of the electoralist opposition's support for the Acuerdo de Salvación Nacional, a platform for negotiations between the regime and the interim government. Vader was a very accurate tool as a tool to measure sentiment even at an individual level.
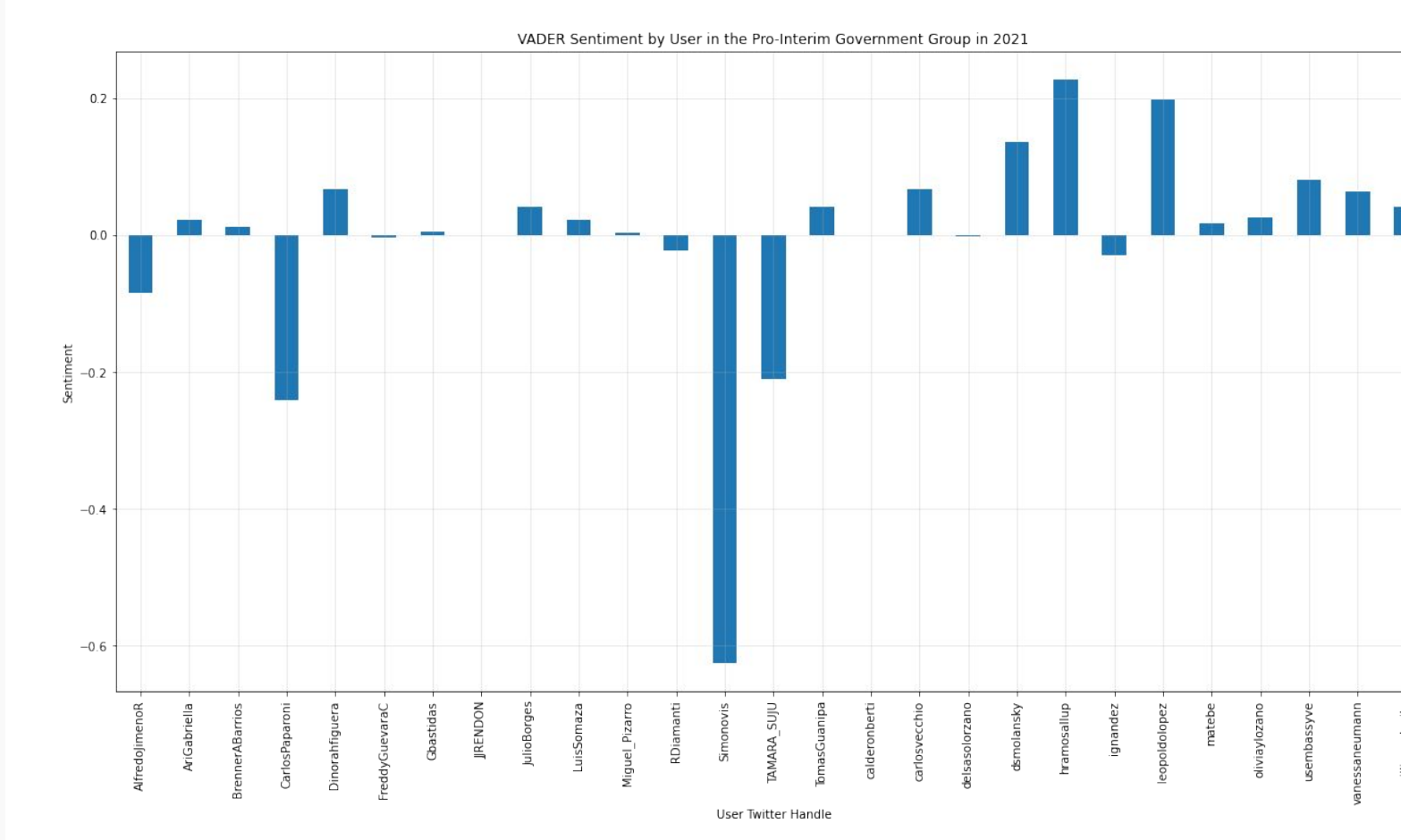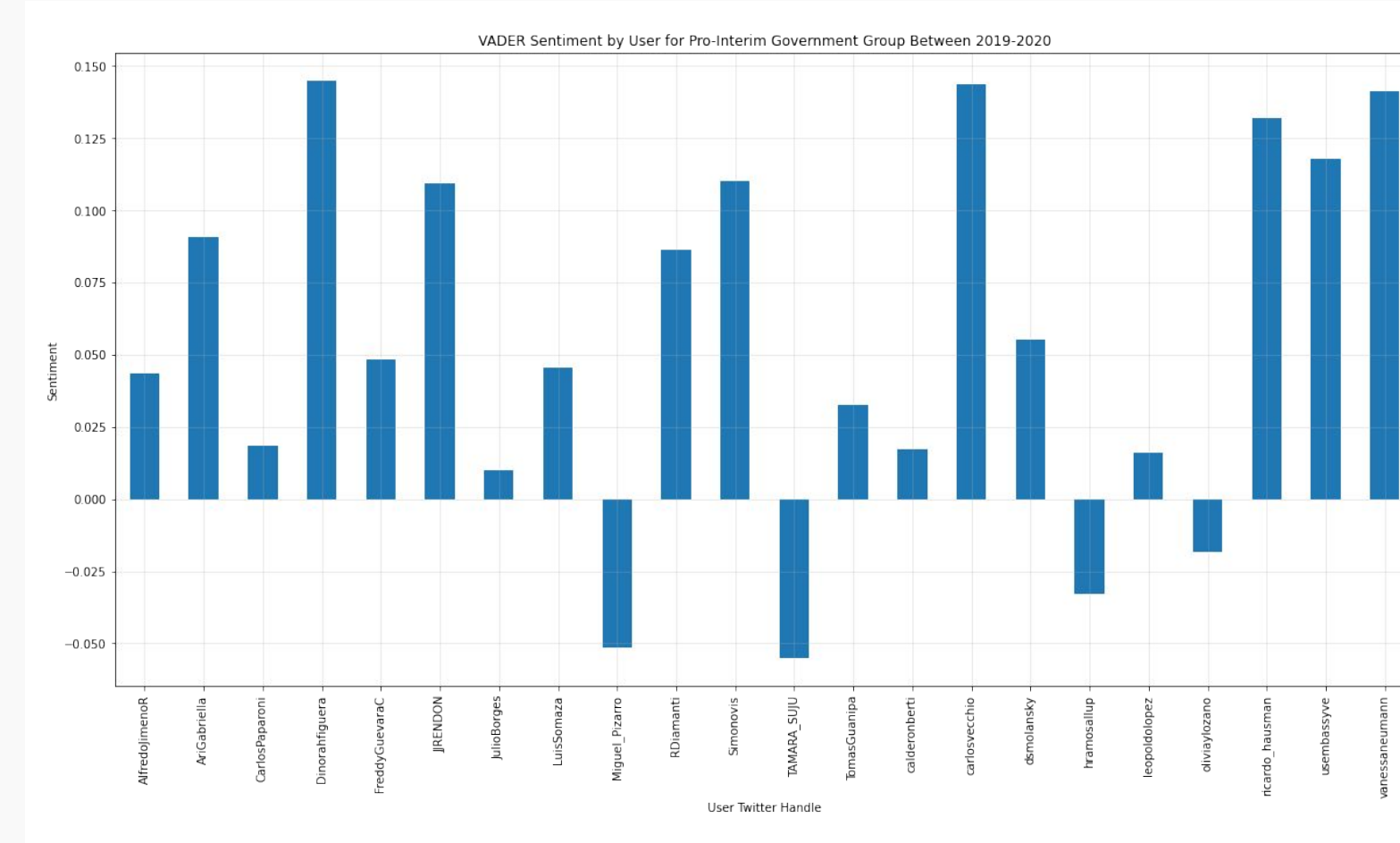
The visualizations of mean sentiment for the Pro-interim government faction show the variations in sentiment over time, especially those who resigned to protest the direction and strategy of the interim government. The change in sentiment is especially evident among two strong leaders of the interim government: former Venezuelan Ambassador in the UK Vanessa Neumann (0.14 in 2019-2020 to 0.04 in 2021) and Ivan Simonovis, former Special Commissioner of Security and Intelligence of the Interim Government (from 0.1125 to -0.64).

Results (cont'd)

Discussion

There are three peaks of positive sentiment in the 2019-2020 period. The three peaks correspond to 1) the swearing in of Guaido as president of the National Assembly and as interim president in January 2019 2) Guaido's meeting with US president Donald Trump in February, 2020, and 3) Guaido's call for popular protests on October 2020. In 2021, there are two important events that see changes in sentiment: 1) the beginning and end of negotiations between Guaido and the regime, and the November regional elections.

We see an overall division among the different factions of the Venezuelan opposition and drastic changes in the popularity of Guaido, especially among former members of the interim government who defected and began to criticize Guaido's leadership and strategy. In 2019-2020 the group-based Vader sentiment analysis showed an interesting trend that seemed to correspond the analysis of political scientists and analysts of Latin American politics Guaido's high popularity among circles of the interim government, moderate support among the electoralist opposition and neutrality from the right wing of the opposition.

Although Vader was a very interesting tool to analyze sentiment, tweets sometimes expressed solidarity with Guaido and strongly condemned the regime, which resulted in a negative score, presenting some challenges that could be addressed by splitting tweets by sentence and creating scores per sentence rather than per tweet.

Recommendations

The research carried out could be further improved by drawing a greater dataset using a Twitter paid plan that would grant researchers the ability to draw a bigger tweet sample so that all the political and opinion leaders could be plotted in a 2019-2021 time-series. Another factor that could help illustrate sentiment in a more comprehensive manner is a bigger sample size of political and opinion leaders, which could lead to an even more accurate sentiment score for each group of the Venezuelan opposition.

Acknowledgements

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