Spread of Conspiracies under Uncertainty: COVID-19 Pandemic in Turkey as a Case

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COVID-19 pandemic saw a recent surge in belief in conspiracies. Headlines were filled with global conspiracies, protest against those and overall increase of distrust against mainstream media all around the world, and Turkey was no exception. As to be seen in the tweet counts, the conspiracies scoured Turkish media with many claims about the alleged "true" nature of pandemic. Conspiracies themselves have long been associated with insecurity which might stem from personality (i.e. high neuroticism), demographic disposition (Goertzel, 1994) and most importantly situations where information is limited and conditions are uncertain (Van Prooijen and Jostmann, 2013). Most of these result from one's epistemic (will to know one's environment), existential (feeling safe and in control) and/or social (having a positive image of self and group) (Douglas et al., 2017) Yet, these can be limited in the times of urgency where larger entities that the individuals have to put in their presence and restrict their freedom against a threat. Therefore, searching for an alternative explanation and a relief from reality becomes a new option for many to mitigate their loss of control in their life. My final project aims to test this claim in the pandemic conditions and to test whether a loss of control in one's life causes higher spread of conspiracies. I tested my hypothesis through, the relation between the quantity of tweets about conspiracies in Turkish Twitter and the strictness of government measures, which I expect to have causal mechanism in positive direction.

In order to measure those, I collected COVID-19 tweets through Twint between March 11th 2020 (declaration of COVID-19 disease as a pandemic and Turkish announcement of the first case) and May 15^{th,} 2021 (the end of Ramadan restrictions in Turkey). I aimed to check six different types of conspiracies that were quite popular: 5G being the cause of COVID-19 symptoms or being related to vaccine research, Bill Gates as a perpetuator of the pandemic and secretly putting tracking chips inside the vaccines, anti-mask movements,

COVID-19 as a pandemic to usher a great reset of humanity (derived from World Economic Forum's founder Klaus Schwab and French economist Thierry Malleret's book (Schwab and Malleret, 2020)) , COVID-19 as a planned pandemic (also known as plandemic) and finally COVID-19 as a biological weapon[1]. As a measure of government strictness, I used Stringency Index of Hale et al. (2021) and picked related dates. Additionally, I also tested Government Response Index (Model 2) in the same dataset, which includes not only lockdown measures (stringency) but also includes economic support, health policies and government stimuli. However, there are other factors which might contribute to the insecurity and pursuit of conspiracies as some sort of ersatz-stability as mentioned earlier. To test these, I picked health and economics related insecurities and measured them through the US dollar (USD) and Turkish lira (TRY) exchange rates and daily number of cases. I intentionally chose the exchange rate as a sign of perceived economic wellness as, for the Turkish case, lower exchange parities are highly regarded as a measure of healthy economy by the public regardless of actual economic indicators. I had the same logic with the daily case numbers. Even though, the Turkish Ministry of Health decided to change the definition of patient/COVID-19 case during the summer, the numbers released by the Ministry were still regarded as the main indicator of struggle against the pandemic. I also tested the total deaths (Model 4) and cases (Model 3) to see whether there would be any differences between the variables. Additionally, in order to check whether popularity of the conspiracies in the Turkish Internet derive is related with their global counterparts; I also scraped global Google Web Search data through pytrends between same dates and searched for similar terms ("Vaccine 5G", "plandemic", "anti mask", "Great Reset", Bill Gates Vaccine").

[1] This assumption was not included in Google Web searches as the tweets about biological weapons were in negligible amounts

The tweet frequency was highly skewed[2] to the right-hand side, which is problematic to test through the simple OLS regression. Therefore, as my dependent variable is a count data, I used negative binomial regression to test my variables. My results showed that except the USD-TRY parity, most of the relations were highly significant and positively related with the number of conspiracy-related tweets. Log-likelihoods of the models were really close, which made the entire models look quite similar.

However, there were significant limitations in my research. My measures were related with overall trends but there were not enough measures for the build-up of grievances as most of the data collections (i.e. opinion surveys, trust polls, unemployment rate, average income etc.) are not measured daily. Similarly, some situations are expected to have a higher impact during the pandemic than others. For example, new restrictions that were introduced on December 5^{th,} 2020 were relatively less than what had been introduced during the first wave of the pandemic. However, it might have been perceived as the return of the pandemic conditions, which would cause higher dissatisfaction and search for alternative explanations. That brings up the problem of working with proxies of perceptions rather than more straightforward variables which have lower reliability and explanatory scope. Finally, this research solely comprised of a portion of pandemic because the pandemic is currently ongoing.

To conclude, I have found that increasing pandemic stringency is strongly related with frequency of COVID-19 related tweets that people post. Overall economic condition does not seem to affect the spread of conspiracies as much as popularity of the conspiracy worldwide and losses of lives from the pandemic. Yet, more research needs to be done even after the pandemic is over.

[2] 4.72 skew which is regarded as a very high skew

References:

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Appendix

Table 1 – Negative Binomial Regression Table (Model 1)

	Coefficient	Std Error	Z	P> |z |	[0.025	0.975]
Intercept	2.4652	0.722	3.415	0.001	1.050	3.880
USD TRY Exchange Rate	0.1499	0.100	1.495	0.135	-0.030	0.346
Stringency Index	0.0191	0.005	4.162	0.000	0.011	0.028
Google Popularity	0.0066	0.002	4.019	0.000	0.004	0.010
Daily Confirmed Cases	1.297e-05	1.19e-06	10.867	0.000	1.01e-05	1.53e-05

Table 2 – Negative Binomial Regression Table (Model 2)

	Coefficient	Std Error	Z	P> |z |	[0.025	0.975]
Intercept	2.8483	0.728	3.915	0.000	1.422	4.274
USD TRY Exchange Rate	0.2411	0.100	1.979	0.048	0.002	0.480
Government Response Index	0.0029	0.005	0.418	0.676	-0.011	0.017
Google Popularity	0.0072	0.002	4.418	0.000	0.004	0.010
Daily Confirmed Cases	1.453e-05	1.19e-06	12.173	0.000	1.22e-05	1.69e-05

Table 3 - Negative Binomial Regression Table (Model 3)

	Coefficient	Std Error	Z	P> |z |	[0.025	0.975]
Intercept	3.0736	0.850	3.618	0.000	1.408	4.739
USD TRY Exchange Rate	0.1108	0.112	0.992	0.306	-0.108	0.330
Stringency Index	0.0106	0.005	2.124	0.034	0.011	0.020
Google Popularity	0.0083	0.002	5.028	0.000	0.005	0.011
Total Confirmed Cases	2.202e-07	4.28e-08	5.143	0.000	1.36e-07	3.04e-07

Table 4 - Negative Binomial Regression Table (Model 4)

	Coefficient	Std Error	Z	P> |z |	[0.025	0.975]
Intercept	3.6146	0.878	4.116	0.000	1.893	5.336
USD TRY Exchange Rate	0.0104	0.118	0.088	0.930	-0.221	0.242
Stringency Index	0.0114	0.005	2.323	0.020	0.002	0.021
Google Popularity	0.0083	0.002	5.056	0.000	0.005	0.012
Total Deaths	2.914e-05	5.46e-06	5.341	0.000	1.84e-05	3.98e-05

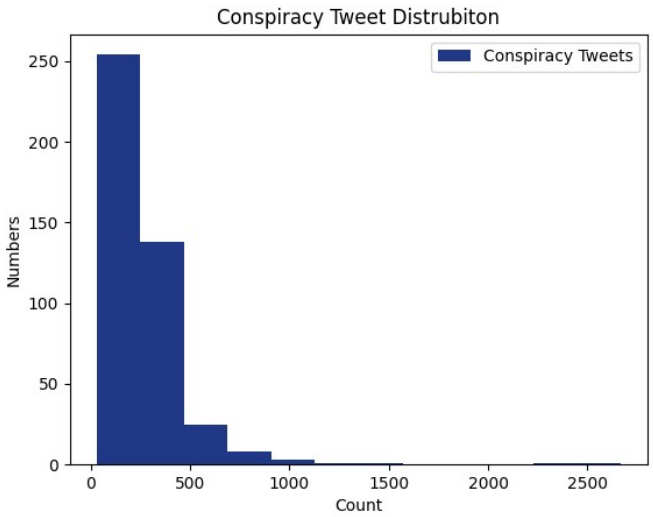

Figure 1 – Histogram of Dependent Variable

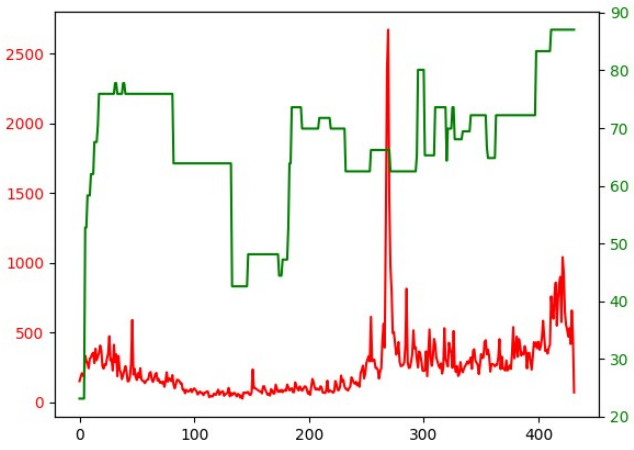

Figure 2 – Time-Series Graph for Conspiracy Tweets (red) and Stringency Index (green)