

Examining the Relationship between Twitter discourse on global warming and political Votes in Italy, France, and Germany

Francesco Ragaini

In the last decade, climate change has gained significant attention, with numerous surveys and studies published on the potential disasters associated with it.

This report was conducted to investigate when there has been an increase in attention towards global warming in Italy, France and Germany and if this increased attention has influenced political voting patterns in the last two elections in each state.

Twitter was chosen as the primary source of data collection due to its popularity and to the fact that tweet data is publicly available.

The number of tweets mentioning global warming was counted in each country for every year between 2017 and 2021 and divided by the number of users per year. Twitter data on active users is not available for 2022. The percentage of tweets about global warming was then calculated for the year prior to the election by the most voted parties. This procedure was repeated for the two most recent elections in each of the selected countries.

Afterwards, a correlation between the percentage of tweets related to global warming and the political results for each party was analyzed. This test was conducted on both the total election results and the results of people under 35 years old.

The results showed that the number of tweets per active users increased for each country in the selected time period (1). Furthermore, the percentage of tweets on global warming posted by parties increased between the first and second election in each country (2). Although there was no increase in the correlation between the percentage of tweets and the overall results in Italy, this was not the case in Germany and France where a significant increase has been observed (3). However, the correlation between the percentage of tweets related to global warming and the results among individuals under the age of 35 is consistently greater than the correlation between the percentage of tweets related to global warming and the overall election results, with the exception of only one instance.

This results suggests that there has been an increasing focus on global warming in recent years (in 2020 there was a slight decrease, that could be attributed to the COVID-19 pandemic, which drew attention away from other issues) and that political parties are also paying more attention to this issue. Nevertheless, the results indicate that global warming may not necessarily be the foremost issue for voters when they cast their ballots, despite its increasing prevalence in two out of three cases. This is an intriguing discovery, as it suggests that younger individuals may be more preoccupied with global warming and accord it greater significance in their voting choices than the wider populace.

Introduction

Climate change is an issue of global significance and it is widely regarded as one of the most urgent and critical concerns of our time, with profound implications for the environment, human health, and the well-being of our planet's inhabitants. In advanced countries, the issue of climate change has generated significant public debate and spurred many important institutions to take action towards reducing greenhouse gas emissions and mitigating its effects.

The purpose of this report is to carry out an overall analysis a comprehensive analysis of the Twitter platform to determine if there has been a surge in public discourse concerning global warming. Moreover, this report seeks to ascertain in which cases political parties have given greater attention to this issue in their tweets. Finally, this report aims to investigate the potential correlation between political parties' focus on global warming and their election outcomes, in order to determine if the public debate and the action taken from important institutions had influenced people to be more interested in this issue. It's also interest of this report to discuss whether people under the age of 35, that are largely present on this social media platform, are even more interested in global themes or if they are more affected by twitter debates.

Methods

Twitter is one of the most popular social media platforms worldwide, but it is primarily used in Europe and North America. In order for this analysis to be more realistic, this paper will only focus on Italy, France, and Germany. These three countries have a high number of Twitter users and are part of the European Union, making their public debates similar. Furthermore, the mean age of Twitter users is 24; therefore, this report will consider the political results of the total population and those under the age of 35 to determine if younger individuals are more interested in global warming and if they are more involved in political debates on Twitter.

One of the most challenging tasks related to climate change is identifying the words and expressions that are commonly used in its narrative. After reading several newspaper articles and making some attempts, the following words and phrases were selected as being closely associated with climate change: "Climate Change", "Emissions", "Global Warming", "Climate Emergency", "Paris Accords", "Greenhouse Gases", "Renewables", "Climate Strike", "COP" and "Climate Government" (last phrase is really used in Germany even if it seems unusual in English). Although this list is not exhaustive, these terms were chosen to ensure that the selected tweets were truly discussing climate change.

Result

As shown in figure 1 in each of the considered countries tweets on global warming per active user have incised in considered period, only in 2020 all there was a little decrease.

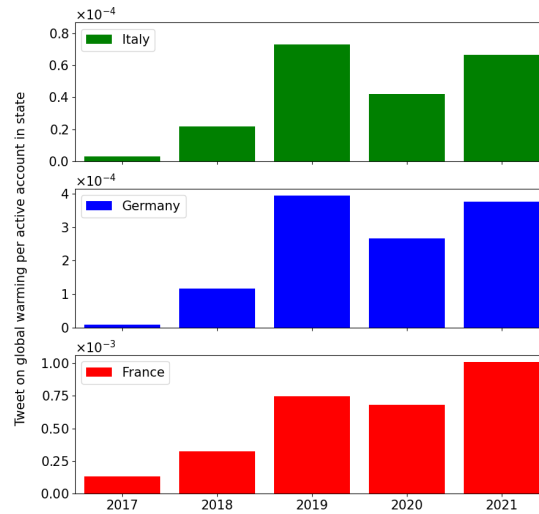


FIG. 1 Tweets on global warming per active users have increased in all selected countries. The figure shows that the number of tweets per active users have increased in the selected period for each country; there is no data on active users for 2022. In 2020 each state registered a decrease in tweets per active users.

Upon examining the second analysis (as depicted in Figure 2), it can be observed that there has been an increase in the mean percentage of tweets concerning global warming that have been posted by political parties in the period leading up to the election.

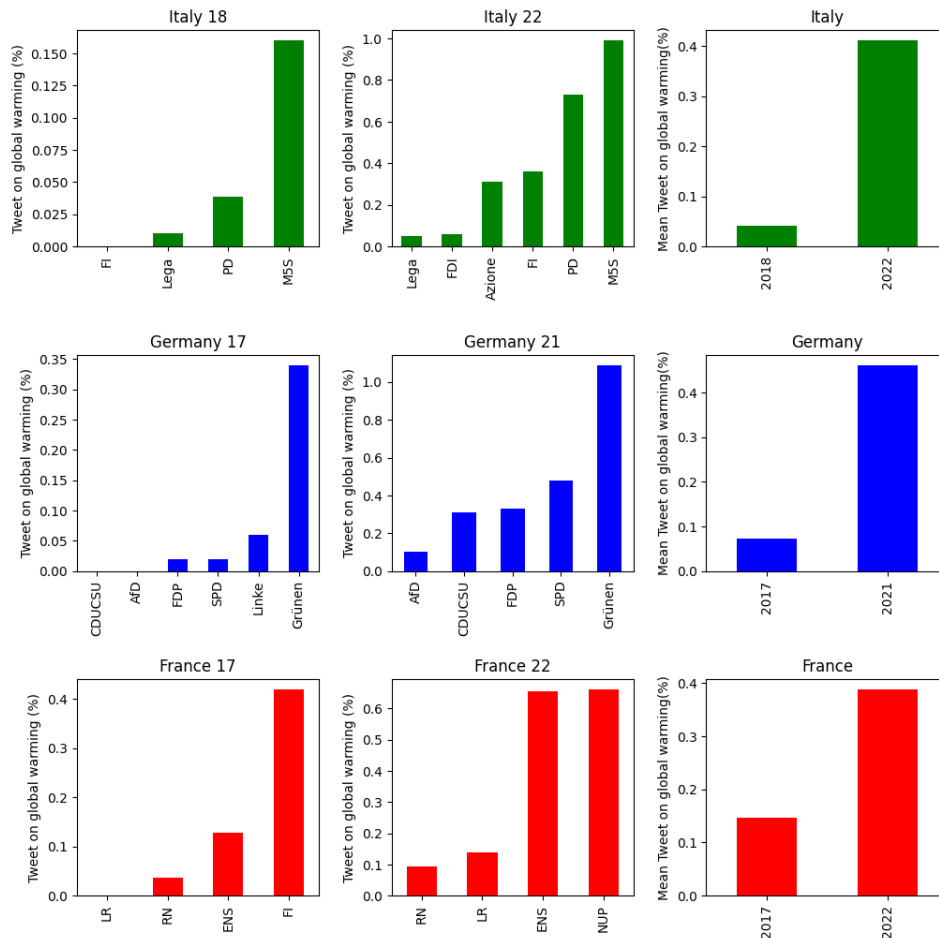


FIG. 2 Political parties wrote a higher percentage of tweets related to global warming during their campaign. Plots represent percentage of tweets related to global warming posted by the most voted parties during their campaign in Italy, Germany and France.

Figure 3 represent that there is no clear pattern in the correlation between the percentage of tweets related to global warming and the percentage of votes gained in the political election. On the other hand, in two of the three countries correlations between

tweets on global warming and political results has increase from first to second election. However, the total correlation with the election results exceeds 0.8 in only two elections (Italy 2017 and France 2022).

Additionally, in five out of six elections, the correlation with the results of the under 35 age group is greater than the correlation with the total results.

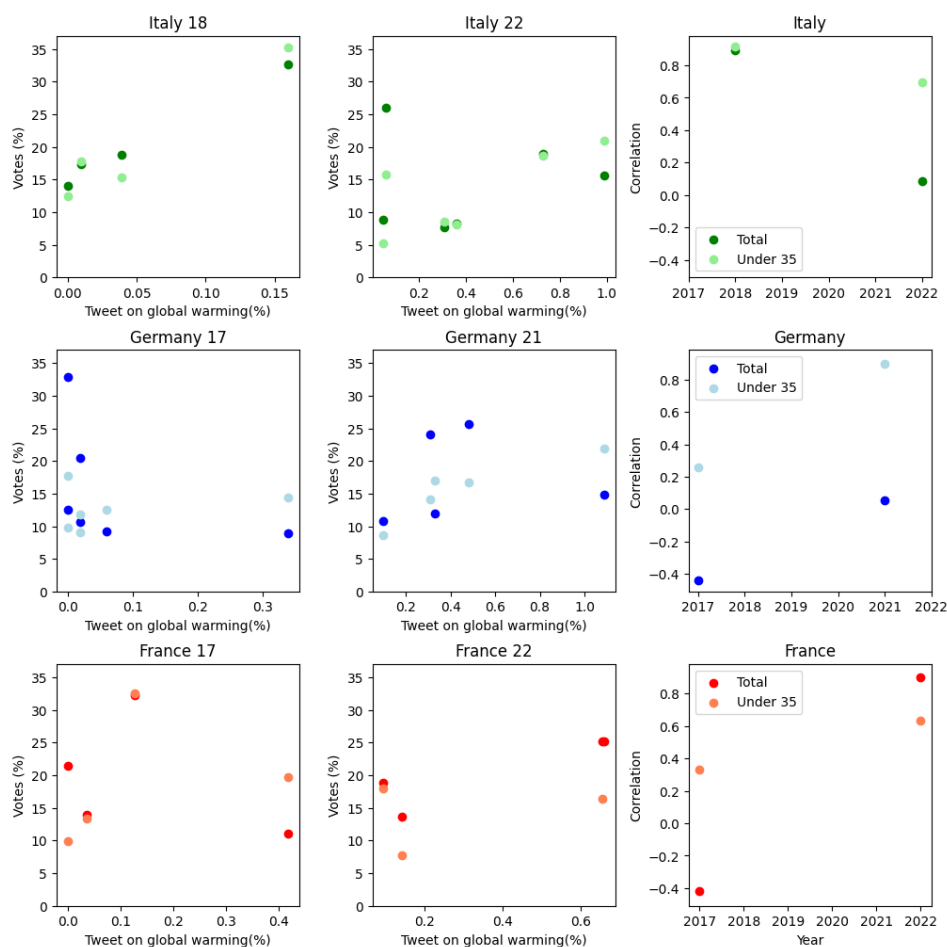


FIG. 3 Percentage of tweeters on global warming is no longer correlated with elections results. The graphs depict the relationship between the proportion of tweets mentioning global warming and the election results, for both the overall population and individuals under the age of 35. In 5/6 election votes of under the age of 35 are more correlated to tweet on global warming than total results. In the third column, where is displayed the trend of this correlation over the years, is displayed, it is possible to observe an increase in the correlation in two of the three countries.

Conclusion

The findings of this study indicate that there has been a growing concern about global warming in the past few years, except for a small decrease in attention observed in 2020, which may be attributed to the COVID-19 pandemic, diverting attention away from the issue.

Furthermore, it appears that political parties have also begun to give greater importance to the issue of global warming and they are posting more tweet on that.

However, the value of correlations suggest that the issue of global warming was not the most critical topic for voters when casting their votes, but in two of three cases this is encreasing and in the last case the correlation was really high in the first election. Can be affirmed that there is a positive trend in correlation, that can be generated from the increasing focus of public opinion and institution on climate. The correlation between the percentage of tweets related to global warming and the election results was stronger among individuals under the age of 35 than in the overall population; this suggests that younger voters are more focused on climate change. It is also plausible that younger voters are more susceptible to the influence of tweets, which could have a greater impact on their political views. To discern between these two options, it may be useful to conduct the same analysis on another social network that has a higher average age.

Bibliography

Political Results
Italy 2018 Italy 2022 Germany 2017 Germany 2021 France 2017 France 2022