



## The social media popularity of pre-candidates for the 2022 Brazil elections

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**Abstract:** A series of data about the popularity of Brazilian politicians on social networks and the Google search engine were obtained and analyzed. Although no scientifically well-established correlation connects the popularity of digital media with a population's vote intention, this study proves to be helpful in the configuration of the political-digital scenario in Brazil.

**Keywords:** Data Science, statistical analysis, politics, social media, social network, political-digital scenario, Brazil Elections.

**Adherence to the BJEDIS' scope:** This paper presents a statistical analysis of political-digital scenarios of Brazil in the pre-elections period.

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## 1. INTRODUCTION

In earlier times, the solidity of human, social, and scientific relationships characterized the way we conducted our lives. Liquid modernity, philosophically introduced by Bauman (1), changed how we relate, consume and even choose our representatives. The behavior of individuals in social networks reflects the various factors that constitute this scenario.

Since its popularization, social media has gained unique prominence in the electoral process. Identity and a sense of belonging are many human aspects that make up this heated stage of political debates (2). Whether in debates with anonymous, by receiving media for paid traffic, or actions involving capture and analysis of large volumes of data - as practiced by Cambridge Analytica between 2014 and 2018 (3). We all have our opinions - at least in part - influenced by social media.

In this context lies the importance of keeping an attentive, impartial, and highly critical eye on the action of candidates and other party actors on social media. The phrase, historically immortalized by Thomas Jefferson (4), is even more necessary nowadays:

"The price of freedom is eternal vigilance".

- Jefferson, Thomas (1743 ~ 1826).

## 2. METHODOLOGY

This article discloses the results of the popularity analysis of several pre-candidates for the Government of Rio de Janeiro and the Brazilian Presidency of the Republic in 2022. The following indicators were used in different social networks: (i) total followers and (ii) the metric of interest from Google searches. All available data from followers were collected in a non-automated way from the public profiles of candidates, and data of interest from Google searches were collected using the Google Trends tool.

### 2.1. Followers on different social networks

The number of followers on each social network is a piece of public information and is open to any user who accesses the candidate's page. Data were extracted and stored in .csv format and later produced graphs for comparative analysis. The social networks chosen were Facebook, LinkedIn, Instagram, and Twitter.

### 2.2. Total followers

The metric of total followers was obtained by the absolute sum of followers in each social network. The data were stored in CSV format and later used to produce graphs for comparative analysis.

### 2.3. Interest from Google Searches

The interest metric from Google searches is a popularity indicator offered by the company using the Google Trends tool <<https://trends.google.com.br/trends>>. The graphs were produced by tracking the candidate's name as laid out in the graph, the data was saved in a CSV file, and the graph was reproduced for comparative analysis.

Adapting the description of the metric offered by Google (5), we can understand it as: "The numbers represent the search interest related to a candidate at the highest point of the graph in 90 days. A value of 100 represents the candidate's peak popularity. A value of 50 means the candidate was half as popular. A score of 0 means there was not enough data about the candidate." (Adapted from Google Trends <<https://trends.google.com.br/>>)

### 2.4. Pre-candidates 2022

Due to the moment in which this study is being conducted, several candidates have not yet made their campaigns official. Much of the pre-candidacy information is obtained from behind-the-scenes electoral rumors published by the Brazilian media (6, 7). Therefore, further confirmation of this information through other sources is necessary.

### 2.4.1 Pre-candidates for the Government of Rio de Janeiro in 2022

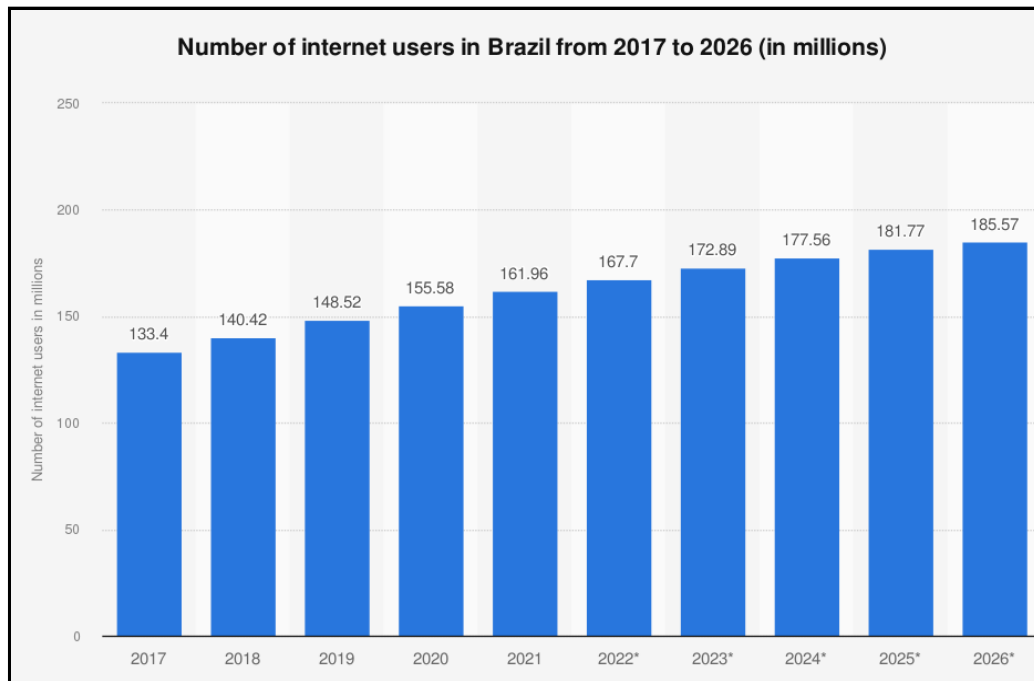
- André Ceciliano (PT) – Not confirmed.
- Claudio Castro (PL) – Confirmed.
- Felipe Santa Cruz (PSD) – Confirmed.
- Hamilton Mourão (PRTB) – Not confirmed.
- Marcelo Freixo (PSB) – Confirmed.
- Paulo Ganime (NOVO) – Confirmed.
- Rodrigo Neves (PDT) – Confirmed.

### 2.4.2 Pre-candidates for the Presidency of Brazil in 2022

- Jair Messias Bolsonaro (PL) - Confirmed
- Ciro Gomes (PDT) - Confirmed
- João Dória (PSDB) - Confirmed
- Luiz Inácio Lula da Silva (PT) - Confirmed
- Sérgio Moro (PODEMOS) - Confirmed
- Alessandro Vieira (CIDADANIA) - Not confirmed
- Luiz Felipe d'Ávila (NOVO) - Not confirmed
- Rodrigo Pacheco (PSD) - Not confirmed
- Simone Tebet (MDB) - Not confirmed

## 3. RESULTS AND DISCUSSION

According to data published by the World Bank (2020) (8), Brazil has 212.5 million inhabitants, with a growth of 0.71% between 2019 and 2020. Of which 75% are connected to the internet. Adding a total volume of about 160 million different users, around 93% are present in at least one social network (9).



**Figure 1.** Time series and forecast of the number of Brazilian users on social networks from 2017 to 2026 (10).

Since the popularization of social networks, its prominence in Brazilian society has gained new proportions. Today, taking into account a sample population of Brazilians aged between 16 and 64 years connected to the internet, 61.6% use social networks as a channel for research on brands, and 59% use search engines, as shown in Figure

2 [9]. So the numbers of social networks spread not only in volume and popularity but configured as essential tools to support decision-making by Brazilians, soon followed by search engines.

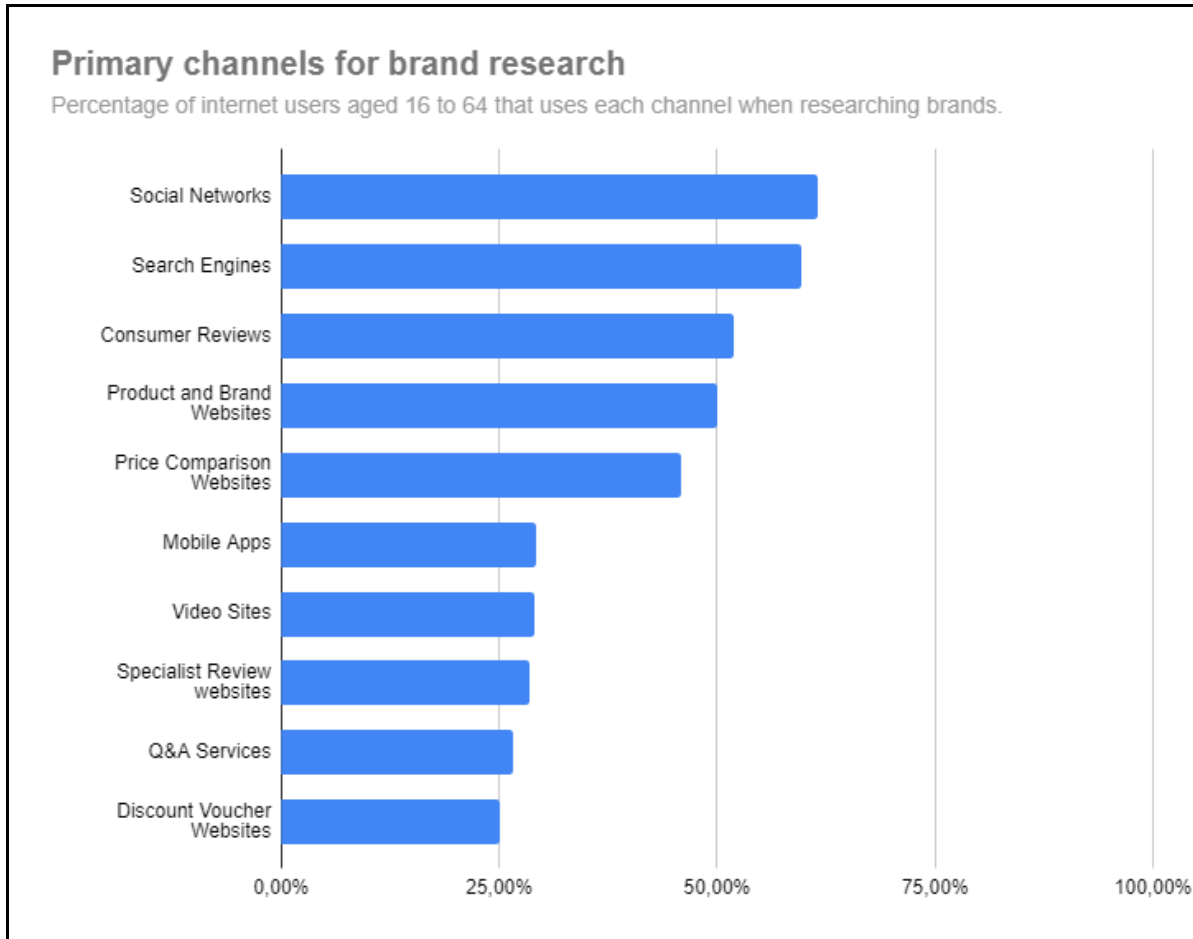
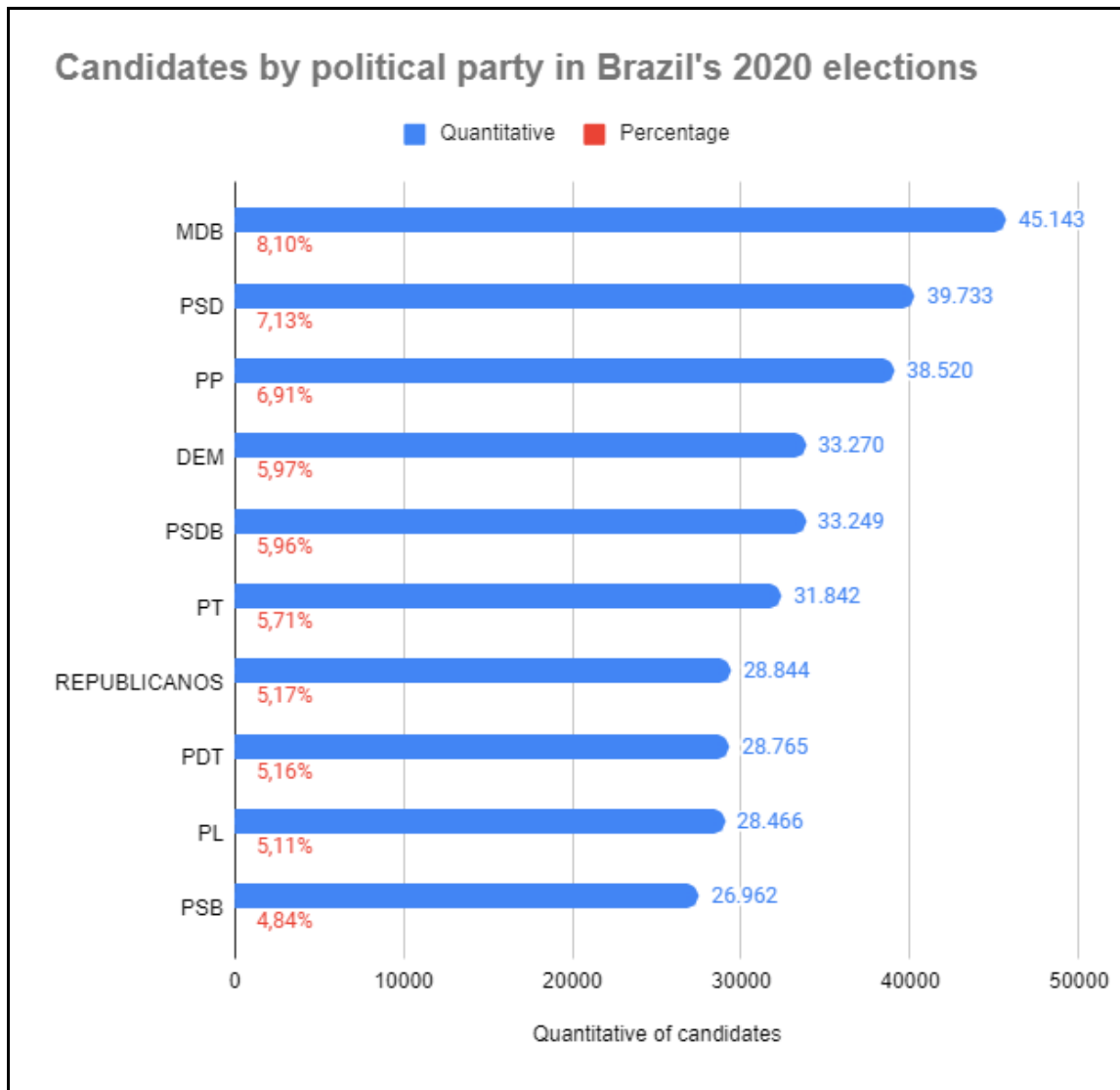


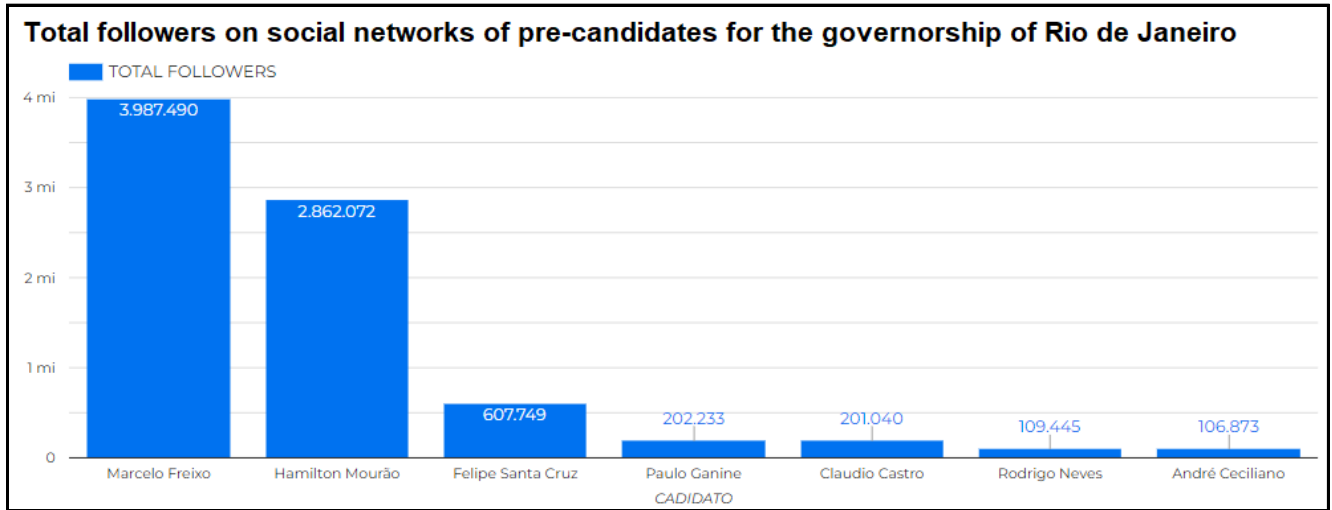
Figure 2. Percentage of Brazilians internet users aged 16 to 64 who use each channel in brand research (9).

In electoral terms, Brazil has 146.7 million voters, of which about 42% are concentrated in the Southeast region (11). In terms of candidacy, there were 557,407 candidacy requests, of which 95.39% were free to run, and 24,018 were candidates seeking reelection where the Movimento Democrático Brasileiro (MDB), Partido Socialista Democrático (PSD), Partido Progressista (PP), Democratas (DEM), Partido da Social Democracia Brasileiro (PSDB), and Partido dos Trabalhadores (PT) are respectively the political parties that most concentrated candidates, as shown in figure 3 (12).

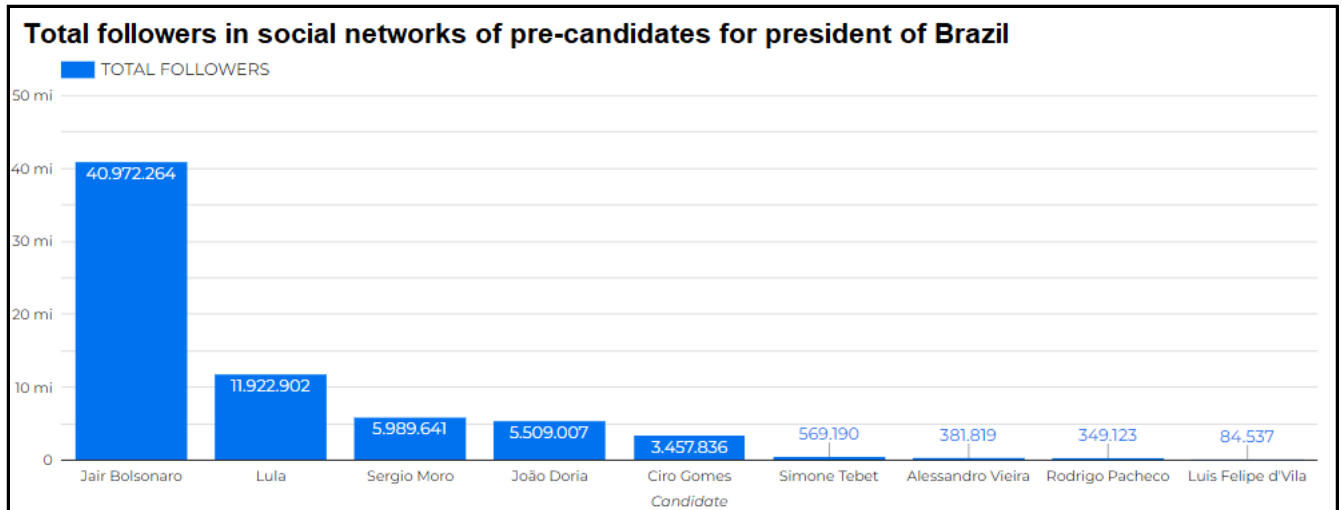


**Figure 3.** Quantitative number of candidates by party and their percentage share in the total number of candidates.

Because of the upcoming elections, a survey was made of the leading popularity indicators of the described social context. Figures 4 and 5 gather data on candidates for the Governor of Rio de Janeiro and the presidency of the Republic. In the political-digital scenario of candidates for the Government of Rio de Janeiro, we have the highlights of followers for Marcelo Freixo (3.9 million) and Hamilton Mourão (2.8 million). They distance themselves from Felipe Santa Cruz (third with the highest absolute values) by 6.5 times and 4.7 times. Already in the race for the presidency, the current president of the Republic, Jair Messias Bolsonaro, accumulates 41 million followers, about 3.4 times the absolute value of his closest competitor, former president Luiz Inácio Lula da Silva and 6.8 times the value of third place absolute. Those who accumulate the fewest followers for the governor and presidency elections are André Ceciliano (106.900) and Luís Felipe Davila (84.500), respectively.

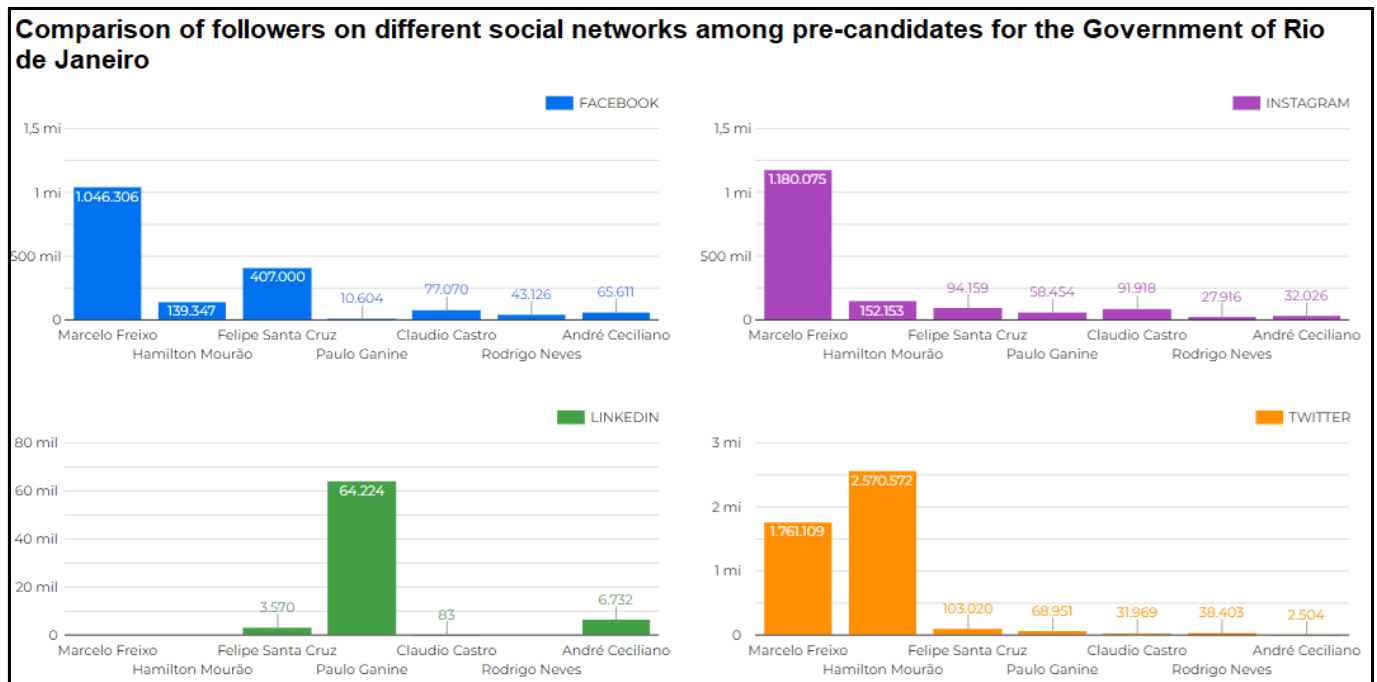


**Figure 4.** Quantity of total followers by candidates for the Government of Rio de Janeiro. Data obtained on 01/18/2022.



**Figure 5.** Quantity of total followers by candidates for the Presidency of the Republic. Data obtained on 01/25/2022.

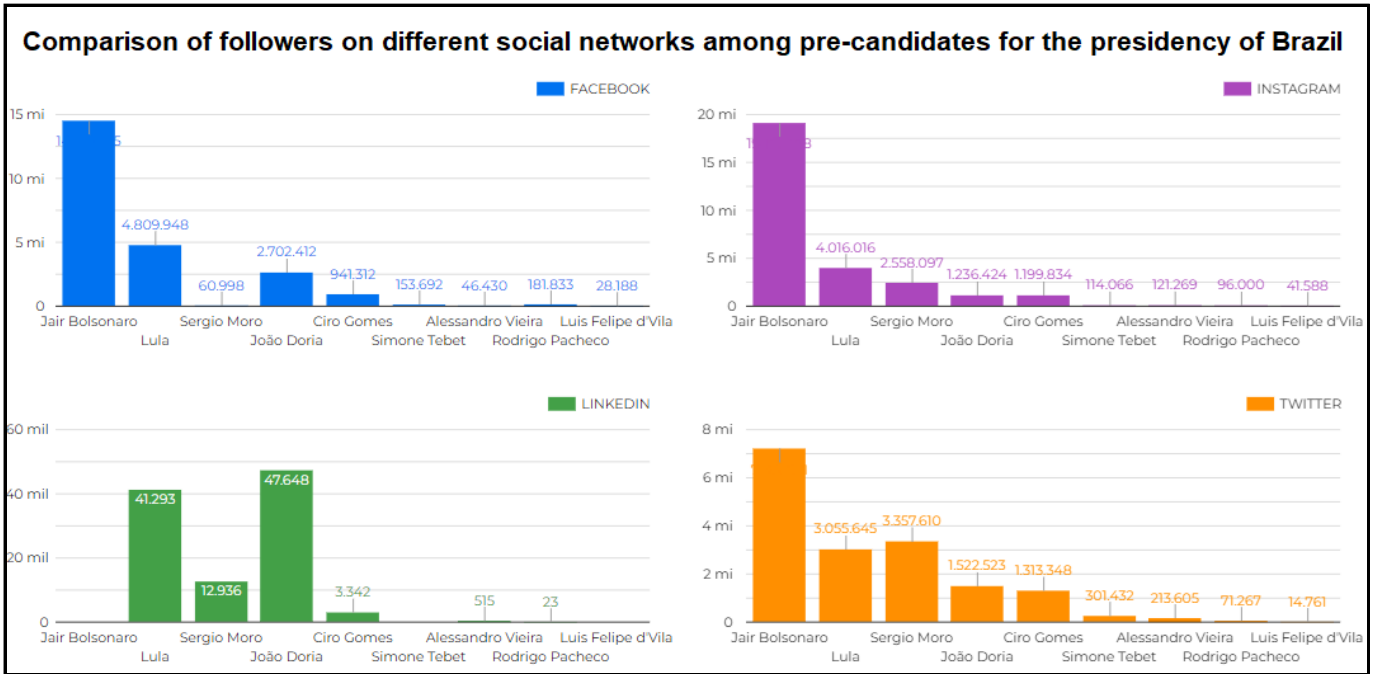
Aiming at more specific monitoring of the political-digital scenario explored, different comparisons of followers were established for each of the social platforms studied. Figures 6 and 7 combine the graphs of this monitoring, establishing comparisons between the candidates for the Government of Rio de Janeiro and the Presidency of the Republic in 2022, respectively.



**Figure 6.** Comparison of followers on different social networks among pre-candidates for the Government of Rio de Janeiro. Data obtained on 01-18-2022.

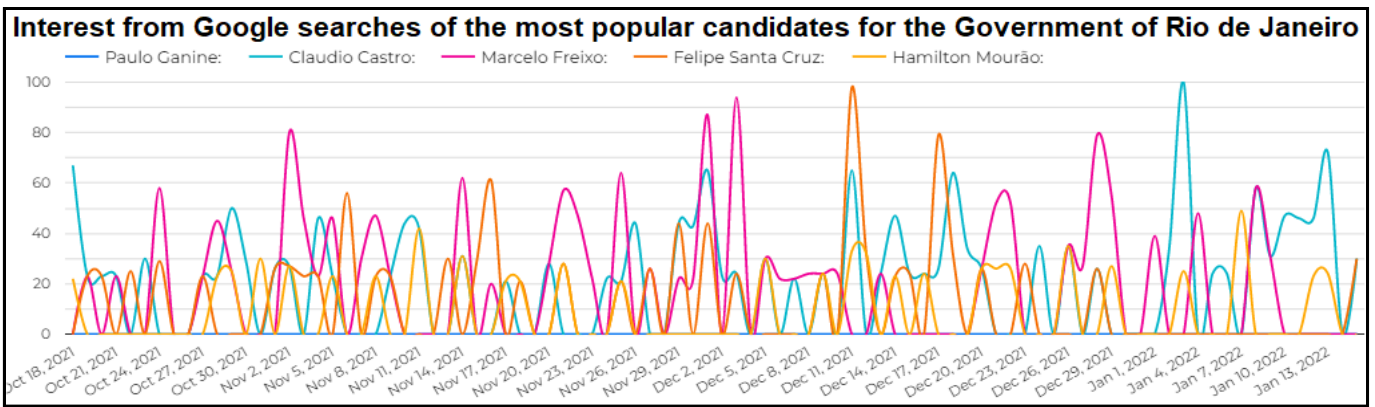
In the scenario for governor, only Instagram seems to follow the established trend with the metric of total followers, while on Twitter, the candidate Hamilton Mourão takes the lead and on Facebook loses position to Felipe Santa Cruz. The scenario on LinkedIn seems to be very different from everything else, the name of candidate Paulo Ganine appears in prominence with more than 60 thousand followers, while the leading names on other platforms do not have active profiles on the network or any campaign page identified in this study.

Regarding the presidential race, the trend established in Figure 5 remains reasonably consistent on Facebook, Instagram, and Twitter, only admitting variations between second and third place while maintaining the prominent position of the current president Jair Messias Bolsonaro. Again, on LinkedIn, the scenario is very different. João Dória is the candidate who currently has the largest network of followers on the corporate platform, followed by Luiz Inácio Lula da Silva and Sérgio Moro. No active profile or campaign page of Jair Messias Bolsonaro was identified in the act of this study. The differences shown in these graphs can be crossed, in future studies, with other candidates' campaign data in order to elucidate questions regarding each candidate's digital strategy and how they meet and configure the current political-digital scenario in Brazil.



**Figure 7.** Comparison of followers on different social networks among pre-candidates for the Presidency of the Republic. Data obtained on 01-25-2022.

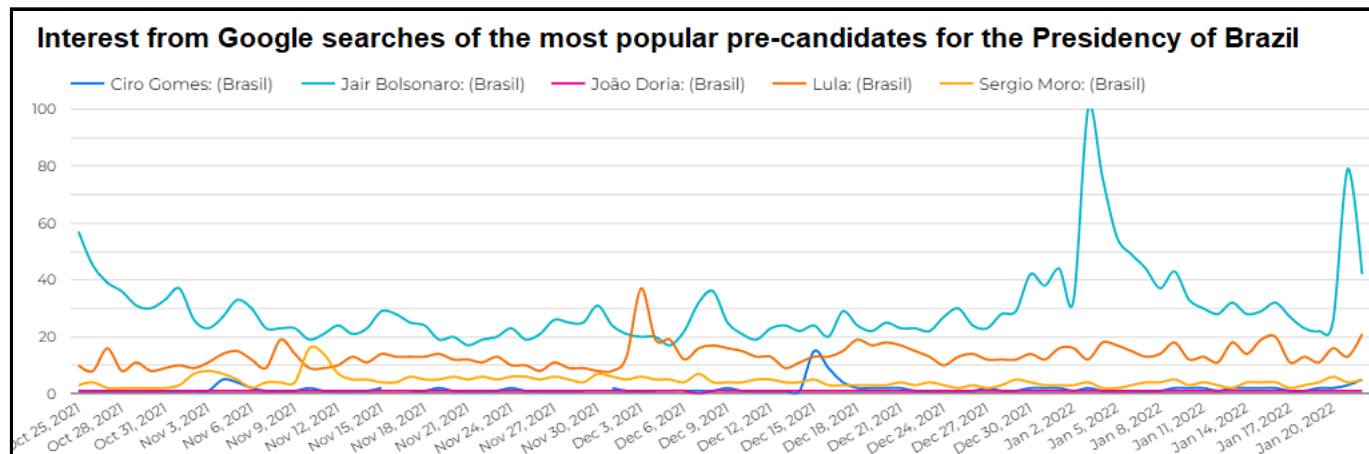
In search of a greater scope of what concerns the popularity of candidates in digital media and platforms, the use of the metric of interest in Google searches proves to be fruitful in understanding the intensity with which users' interest in candidates is shown in the search engine. Figures 8 and 9 highlight these data for the best place in terms of total followers for the elections of Governor of Rio de Janeiro elections and President of the Republic in 2022.



**Figure 8.** Volume of interest from Google searches of the main candidates for the Government of Rio de Janeiro. Data for the period from 10-18-2021 to 01-18-2022.

In the scenario of elections for Governor of Rio de Janeiro, the data studied show that users' interest in searching for the names of the evaluated candidates remains at discrete peaks in popularity. From January onwards, the names of Marcelo Freixo and Claudio Castro became more present. During the entire period studied, there was insufficient data on Paulo Ganine to establish a comparison. While in the presidential race, the name of current president Jair Messias Bolsonaro maintains the interest of searches constantly superior to the names of his competitors, followed by former president Luiz Inácio Lula da Silva and Sérgio Moro. Still, on Bolsonaro, Figure 9 shows a peak on January 5, 2022, possibly driven by the news of his discharge from the hospital and/or other government measures (13). It is necessary to highlight this social aspect to consider the complaints made by the Brazilian media on social networks about robots who pretend to be users (14).





**Figure 9.** Volume of interest from Google searches of the main candidates for the Presidency of the Republic. Data referring to the period from 10-25-2021 to 01-25-2022.

#### 4. CONCLUSIONS

This study is a source of impartial and scientifically-based information for monitoring the activities of candidates and their influence on digital media and platforms. From a direct perspective of popularity in the media, the relevance of current Brazilian President Jair Messias Bolsonaro in digital media is clear, despite the possible use of robots denounced by Brazilian media. These indicators are necessary for a more in-depth analysis of the candidates. Among the candidate strategies for the natural resolution of this question, we can identify an organic identification of these candidates, language processing, and sentiment analysis through rating comments.

#### CONSENT FOR PUBLICATION

The authors of this work declare their consent to the full publication of the texts as well as the data discussed.

#### CONFLICT OF INTEREST

This work has no funding or political-electoral interest. The authors of this work still declare that they have no affiliation or commitment to any political group or candidate.

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