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## A STUDY ON YOUTH'S POLITICAL SATISFACTION: THE CASE OF PORTUGAL

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Dissertation

presented as a partial requirement for obtaining the Master's Degree Program in Information Management

**NOVA Information Management School**  
**Instituto Superior de Estatística e Gestão de Informação**

Universidade Nova de Lisboa

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# **A STUDY ON YOUTH'S POLITICAL SATISFACTION: THE CASE OF PORTUGAL**

By

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Master Thesis presented as a partial requirement for obtaining the Master's degree in Information Management, with a specialization in Marketing Intelligence

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## STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration. I further declare that I fully acknowledge the Rules of Conduct and Code of Honor from the NOVA Information Management School.

*[Lisbon, 29<sup>th</sup> of November 2022]*

## **DEDICATION**

To my father, the sole reason why I got the chance to study so much.

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## ABSTRACT

Political brands have taken their campaigns into social media, in an effort to keep up with the times and connect with younger users. Obama and Trump are examples of successful cases where their online presence translated into the ballot boxes. The present study aims to address the youth engagement and satisfaction with Portuguese political brands on Twitter and their likeness to vote for candidates and parties considering the sentiment results of the last 3 election periods – presidential, local and legislative. The conducted sentiment analysis demonstrated that the various types of users allocate a negative sentiment for most political brands. No positive sentiment was identified within the 29 analysed actors and parties. Most political brands with a neutral sentiment were part of the left-wing, in which youth showed more voting intentions. Liberal Initiative (IL) presented itself as an exception from the right-wing with the same results. Furthermore, it was also conceived that it is not possible to predict election results through Twitter, but this social medium gives a close idea of the users' collective mind.

## KEYWORDS

Political brands; Twitter; Youth engagement; Sentiment Analysis

### Sustainable Development Goals (SGD):



# INDEX

1. Introduction.....	1
2. Literature review .....	4
2.1. Political Marketing on Twitter: A Microblogging Strategy .....	4
2.2. Youth’s Satisfaction with Portuguese Politics .....	6
2.2.1. Political Climate in Portugal .....	6
2.2.2. Influential Voices on The Portuguese Twitter Playground.....	7
2.2.3. Mining Portuguese Political Brands on Twitter.....	9
3. Methodology .....	13
3.1. Research Approach.....	13
3.2. Tools .....	13
3.2.1. Twitter Application Programming Interface v2 (API) & Twitter Extractor .....	13
3.2.2. Python in Visual Data Studio .....	14
3.2.2.1. Python Packages.....	14
3.2.3. Multi-language Sentiment Analysis.....	15
3.2.3.1. Sentilex-PT02 Sentiment Lexicon .....	15
3.3. Social Media Analytics Model .....	16
3.4. Datasets Description .....	18
3.4.1 Date Ranges.....	18
3.4.2 Age Ranges .....	18
3.4.3 Political Actors, Parties and Youth Groups.....	19
4. Data Sentiment Analysis Results .....	22
4.1. Number of Tweets.....	22
4.1.1. Number of Tweets During the Presidential Elections .....	22
4.1.2. Number of Tweets During the Local Elections .....	26
4.1.3. Number of Tweets During the Legislative Elections.....	29
4.2. Sentiment Analysis Results.....	33
4.2.1. Presidential Elections .....	34
4.2.2. Local Elections .....	35
4.2.3. Legislative Elections.....	38
5. Discussion .....	40
6. Conclusions.....	44
6.1. Managerial Implications .....	44

6.2. Limitations and Future Research.....	44
References.....	46
Appendix.....	58
Appendix A .....	58
Appendix B .....	60



## LIST OF FIGURES

Figure 1 - Example of Twitter’s Portuguese Influencers with a Political Connotation .....	9
Figure 2 - Audience Estimate for All Portuguese Users.....	10
Figure 3 - Audience Estimate for All Users Between the Ages of 18-34 .....	10
Figure 4 - Social Media Analytics Model .....	17
Figure 5 - Example of Relevant Data for Extraction .....	21
Figure 6 - Number of Tweets by Political Figure (All - Presidential).....	23
Figure 7 - Number of Tweets by Political Figure (Nano-influencers - Presidential).....	24
Figure 8 - Number of Tweets by Political Figure (Micro-influencers - Presidential) .....	24
Figure 9 - Number of Tweets by Political Figure (Macro-influencers -Presidential) .....	25
Figure 10 - Number of Tweets by Political Party (All - Local) .....	26
Figure 11 - Number of Tweets by Political Party (Nano-influencers - Local) .....	27
Figure 12 - Number of Tweets by Political Party (Micro-influencers - Local).....	27
Figure 13 - Number of Tweets by Political Party (Macro-influencers - Local).....	28
Figure 14 - Number of Tweets by Political Party (All - Legislative).....	30
Figure 15 - Number of Tweets by Political Party (Nano-influencers - Legislative).....	31
Figure 16 - Number of Tweets by Political Party (Micro-influencers - Legislative).....	31
Figure 17 - Number of Tweets by Political Party (Macro-influencers - Legislative).....	32
Figure 18 - Predictive Poll of Voting Intentions Between Age Groups.....	43

## LIST OF TABLES

Table 1 - Elective Date Ranges .....	18
Table 2 - Number of Tweets per Election Period VS Abstention Rate (%) .....	22
Table 3 - Numbers of Tweets by Political Figures (Presidential) .....	25
Table 4 - Numbers of Tweets by Political Party (Local) .....	29
Table 5 - Numbers of Tweets by Political Party (Legislative) .....	33
Table 6 - Sentiment per Election period VS Abstention rate (%) .....	34
Table 7 - Sentiment by Political Figure (All Types of Users - Presidential) .....	35
Table 8 - Sentiment by Political Party (All Types of Users - Local) .....	36
Table 9 - Sentiment by Political Figure (All Types of Users - Local) .....	37
Table 10 - Sentiment by Political Party (All Types of Users - Legislative) .....	38
Table 11 - Sentiment by Political Figure (All Types of Users - Legislative) .....	39
Table 12 - Relevant Political Figures .....	58
Table 13 - Relevant Political Parties & Youth Groups .....	60

## LIST OF ABBREVIATIONS AND ACRONYMS

<b>AD</b>	Advertising
<b>API</b>	Application Programming Interface
<b>BE</b>	Bloco de Esquerda (Left Bloc)
<b>CDS</b>	Partido Popular (People’s Party)
<b>CDU</b>	Coligação Democrática Unitária (Unitary Democratic Coalition)
<b>CLARIN</b>	Common Language Resources and Technology Infrastructure
<b>CNN</b>	Cable News Network
<b>COVID-19</b>	Coronavirus disease
<b>CSV</b>	Comma-separated values
<b>HTML</b>	HyperText Markup Language
<b>HTTP</b>	HyperText Transfer Protocol
<b>ICS   ISCTE</b>	Instituto de Ciências Sociais da Universidade de Lisboa (Institute of Social Sciences of Lisbon University)   Instituto Universitário de Lisboa (University Institute of Lisbon)
<b>ID</b>	Identification
<b>IL</b>	Iniciativa Liberal (Liberal Initiative)
<b>IQ2US</b>	Intelligence Squared US
<b>JSON</b>	JavaScript Object Notation
<b>LDA</b>	Latent Dirichlet Allocation
<b>NLP</b>	Natural Language Processing
<b>NLTK</b>	Natural Language Toolkit
<b>PAN</b>	Partido das Pessoas, dos Animais e da Natureza (People-Animals-Nature)
<b>PS</b>	Partido Socialista (Socialist Party)
<b>PSD</b>	Partido Social Democrata (Social Democratic Party)
<b>RE</b>	Regular Expression Syntax
<b>RTP</b>	Rádio e Televisão de Portugal (Television Channel)

<b>SGMAI</b>	Secretaria-Geral do Ministério da Administração Interna (General-Secretary of the Ministry of Internal Affairs)
<b>SVM</b>	Support Vector Machine
<b>TV</b>	Television
<b>URL</b>	Uniform Resource Locator
<b>USA   US</b>	United States of America
<b>WOM</b>	Word-of-Mouth

## 1. INTRODUCTION

At a time when youth's interest and engagement in politics are getting lower than ever (Borges, 2022; García-Albacete, 2014; Zukin et al., 2011), it is noticeable the increasing presence of political parties and figures on social media. On Twitter, the phenomenon is tangible. Perhaps inspired by the previous USA president, Donald Trump, that took communication on Twitter to another level of engagement and controversy (Shear et al., 2019), in recent years, Portuguese Twitter became more political than ever. Figures like André Ventura – the president of CHEGA, a far-right political party (Lopes, 2022); António Costa – prime minister of Portugal (Expresso, 2022); and Rui Rio – the former president of the social democratic party (RTP, 2022a), began tweeting their thoughts and agendas to the community.

But does it reflect on youth's engagement and participation in politics? A study by The New York Times revealed that the general population's voting rate exceeds the one for young people in at least 24 democratic countries (Symonds, 2020) – Portugal is no different, considering that 57% of Portuguese people between the ages of 15 and 24 do not reveal any interest in politics (Fronteiras XXI, 2017). In fact, only 45% to 52% of young people with less than 30 years voted in the last Portuguese presidential elections (Borges, 2021).

Nevertheless, social media seems to be one of the solutions to reach newcomers and young voters. Manifestos, activist movements, protests, and general militancy are often born and proliferated within the digital world, standing as a medium of our daily interactions (Duncombe, 2019), especially during 2020's lockdown and social distancing.

For that matter, the present study intends to analyse the sentiment on how the most relevant Portuguese political actors and parties express and position themselves on social media, more specifically, on Twitter. This comes as an effort to discover if their communication strategies with the younger generations are effective and satisfy their political needs.

The topic of youth electoral engagement is not new. Authors such as Bynner & Ashford, (1994), described that political disaffection and voting or not voting intentions are deeply influenced by educational experience, background, and cynicism directed towards the system.

Even nowadays, generally speaking, young people tend to not trust politicians (Harris & Lock, 2010) and are more informed than ever due to the *world wide web and the continuous development of websites, emails, blogs, and social networks* (Butler & Harris, 2009). Additionally, usually, such individuals have higher-education opportunities, making them more aware of political parties and actors' intentions, actions and also their personal and professional backgrounds.

As informed as the public is, every interaction online comes down to one question: what, in the first place, motivates people to use social media to share their political views and engage with such political profiles? Authors Brandtzæg & Heim, (2009), reveal that the main reasons for social media usage concentrate on finding new relationships - like new friends they can share common interests, seek information, and debate.

If considered as interpersonal needs, especially bearing in mind that it contributes to the construction of personal identity for younger generations in an environment that promotes *interpersonal feedback and peer acceptance* (Gil de Zúñiga, 2012), politics is certainly one of the subjects that can provide such wishes for identity affirmation (Recalde & Kaskina, 2017) and community. When it comes to fast debating, finding a community, and reaching peer reassurance, a platform like Twitter takes the prize as it democratizes information for citizens that want to express their ideologies and thoughts, bringing communities together to empower political brands or hold them accountable (IQ2US, 2018).

There are various studies related to the effects of social media and political communication on youth and their consequential political practices, formally presented at conferences and directed at specific countries – as is the case of the recent study on Malaysian youth by Muhamad et al., (2021) as well as Penney's, (2020) study on USA's Trump Era. Comparing both studies, it is immediately identified that both political environments in these countries take a significant effect on how youth approach politics. As Malaysian younger generations do not use social media for political discussion and are apathetic about such matters, the authors discovered that the youth's low participation relies on a deeper issue related to the citizens' freedom and consequent fear of the government's punishment.

As for the study subjects on Trump's Era study, this timeline of history brought them a shift in their approach to politics on social media, with some affirming to have gained a sense of duty to fight extremist ideas and overall misinformation online that were perceived during Trump's term. Trump's use of social media to escalate communication also brought a response as youth engaged in a way to "speak back".

For the present study, the Portuguese political environment will also be highlighted and focused on during three election periods from the past couple of years – the Portuguese presidential elections, the local elections, and the legislative elections - with Twitter representing the social media medium. It is also intended to bring new light to political engagement, satisfaction and communication focused on younger generations of Portuguese citizens and voters, using sentiment analysis as the main method to achieve the proposed objectives.

This paper is structured as follows. Section 2 provides a literature review on political marketing on Twitter, the political climate in Portugal, influential voices of Portuguese Twitter, social media mining, text mining, and sentiment analysis. Furthermore, section 3 presents a comprehensive explanation of the methodology used, mentioning the research approach, the tools applied a presentation of the analysis module and a brief description of the three datasets. In section 4, it is presented the data and sentiment results of each political period. Section 5 provides a discussion of the findings and section 6 is kept for conclusions, study limitations and outlooks for future research. The references are also provided to justify the research made as well as the relevant appendixes.

## 2. LITERATURE REVIEW

### 2.1. POLITICAL MARKETING ON TWITTER: A MICROBLOGGING STRATEGY

Using marketing techniques to appeal to the public's vote has been practised for years, with authors such as Lock & Harris, (1996) assuming that they have been used, at least, since the 1920s. Referred to as political marketing, this concept serves as a communication process in which politicians and ideas are proliferated directly to voters in order to gain their favour (Shama, 1975). Developing a *distinctive and appealing message* to target people and get the majority of votes on election day comes close to a rather similar notion to branding (Harvard Business Review, 2008), which is why it seems logical to call politicians and political parties as brands. To convey such a message, communication strategies are implemented, especially through the media.

Communication strategies are intended to inform, remind and show behaviours and attitudes (Shama, 1975) often turning them into discussions of calculated words that try to win both ways, even taking frowned-upon tactics such as negative advertising to win over public opinion and come out as better options concerning other candidates (Harvard Business Review, 2008). It seems to be an authentic business where the biggest selling propositions are policies, images, inherited memory, promises, and past performances (O'Shaughnessy, 2001).

With such a large audience, political marketing shows big similarities with marketing for public and non-profit organizations (Lock & Harris, 1996) in which products turn into promises, consumers into voters, and product mixes become ideas and solutions. Brand concepts such as image, loyalty, product conception and development, and positioning also come into play (Shama, 1975).

Nonetheless, there are a few key elements that differentiate such concepts when it comes to normal products and service marketing contexts, the very political choice processes, and their influences. To begin with, elections are held on the same day with almost no purchasing decisions, there is no inherent price attached to voting, voters have to accept the collective choice, a political brand is a complex intangible product and overtime brand leaders lose popularity with unpopular decisions (Lock & Harris, 1996).

Such similarities and differences shape these brands' communication styles and marketing strategies, which sometimes may not reach their targeted consumers – youth, as this research's main premise suggests. When it comes to political marketing and how communication is strategized, Quelch (Harvard Business Review, 2008) states that doing better marketing is the way to go. By *focusing on*



*current and emerging customer needs and trends, developing product and service solutions, informing,* and making that information accessible is the right recipe to keep voters interested.

As the web's 2.0 modern tools demand participation and collaboration, social media networks turn into an ally for democracy. Finding their reputation, catching on to trends and current political discussions, and even connecting with influential voters are some of the benefits that political brands can get from actively participating and engaging with users and monitoring public opinion (Stieglitz et al., 2012).

It is also important to recognize that, nowadays, social networks are the sources that most users use to receive information – especially, in the case of younger generations. A study by Harvard undergraduates (Harvard Political Review, 2021) focused on understanding the political beliefs of the American younger generation and reveals that Facebook, Instagram, and Twitter are used by 79% of the 2500 subjects inquired, to access news and express their political voices and ideas. In fact, Facebook changed the American political playground for the 2008 presidential election, with Obama receiving support, especially among young citizens, and winning 70% of the American votes of people under the age of 25. This election, in which all candidates tried to connect with American voters through online social networking became known as the “Facebook election” – no surprise here, being that one of Obama's strategists was Chris Hughes, a Facebook co-founder (U.S. News, 2008).

Another case to take into account is Donald Trump, that used his account on Twitter as a key element of his communication during his successful campaign for president – in a style that aligns with his usual hatred directed at the press in an effort to get his message out, unfiltered (Keith, 2016).

Twitter, the 2006 launched social network, will be the online social network analysed in this research paper, since its use is also becoming predominant among Portuguese politicians and highly politically active citizens (Recalde & Kaskina, 2017).

Being a network focused on microblogging, it allows users to broadcast their immediate thoughts, sentiments, opinions, and status on various current topics and issues (Java et al., 2007), and find temporary news and trends in a fast and real-time (Teevan et al., 2011) manner that other networks are not so much capable of. As of 2020, with a maximum of 280 characters for each short message (tweet), Twitter has 186 million users worldwide (Business of Apps, 2021), all connected through trending topics, hashtags, similar interests, and even political preferences.

Through the analysis of such preferences, authors even have been arguing if it is possible to predict elections through Twitter. Some conclude that this network is a *valid indicator of political opinion* considering that it has been used for political deliberation and that the volume of messages mentioning

a party reflected the election results (Tsumasjan et al., 2010); others refute this statement contemplating that it provides insights on the collective mind of the voters, but the prediction is flawed by overgeneralizing. Furthermore, the chance is not an effective measure, all messages are not trustworthy being that Twitter is full of rumours, propaganda, and fake news. Twitter itself cannot represent all the voting citizens and actual studies on predictions are not predictions at all – but just studies on what could have been predicted (Gayo-Avello, 2012).

The goal of this paper is not to dictate a prediction formula, but to compare sentiment and volumes of tweets with the actual events that happened during each election period and how such may have influenced the election results and the younger communities within Twitter.

## **2.2. YOUTH'S SATISFACTION WITH PORTUGUESE POLITICS**

### **2.2.1. Political Climate in Portugal**

Since 2015, Portugal has retained political stability with the Socialist party (PS) in charge – notably so that in the 2022 legislative elections, the centre-left wing party gained a historic absolute majority in the parliament (Ramiro, 2022). 120 seats, while the rival right-wing parties got 97 (SGMAI Secretaria Geral, 2022). Even with the rise of the far-right wing party, CHEGA (SGMAI, 2021a, 2021b, 2022), Portugal maintains its tendency for socialism – unlikely other European countries (Martin, 2022). For the local elections, the scenery is not much different. PS sustains more than 30% of power in city councils, assemblies and counties – not counting their coalitions with other left parties (SGMAI, 2021b).

The Portuguese voters may be consistent, but the Portuguese parties and their actors, are not so much. In the past couple of years, several right-wing politicians resigned as party coordinators or renounced their assembly mandates in inference to their bad election results - as it is the case for Rui Rio, Francisco Rodrigues dos Santos and even André Ventura (Diário de Notícias, 2021b, 2022a; RTP, 2022b).

The political climate is being influenced by scandal after scandal. If not by resignations, by controversial statements. André Ventura is at the centre of them, often coming close to dismissing human rights, getting accused of populism acts, giving a platform for CHEGA's Nazi militants and spreading fake news (Gaspar, 2020).

Regardless of winning with 60,70% votes in the last presidential elections, Marcelo Rebelo de Sousa is not safe from such controversies and populist comments. More recently, Marcelo disregarded the

news about the number of reports of alleged sexually abused children by the Portuguese church (Carmo, 2022), as well as, the reports of Qatar's violations of human rights (Lusa, 2022).

With such arguable statements and considering the current inflation influences and policies (RTP, 2022c), the dissatisfaction of the Portuguese society is more and more apparent – which can also pass on to the younger generation of voters.

### **2.2.2. Influential Voices on The Portuguese Twitter Playground**

Worldwide, people spend an average of 147 minutes per day on social media – a statistic that seems to keep increasing. Western Europe alone comes in first for the most online users with a social media penetration rate of 79% (Dixon, 2022). Hence, it is not surprising that users use social media mediums as sources for decision-making.

For brands, the increasing online connectivity of consumers brings a lot of opportunities for sales, customer relationships and online reviews. In a way, and especially on twitter, this is a new form of WOM (Dost et al., 2019). As previously mentioned, Twitter has a microblogging model of constant and continuous streams and threads of information (Anger & Kittl, 2011) – most of it is based on opinions and commentary, which means that brands are not the only interested objects in promotion opportunities. Political figures and parties also show, as stated, that interest.

Even though many have created accounts and are rather active on the platform, from their presence and the easy flow of communication, some influential voices ended up raising awareness as well. Influencers – a different type of them. Most of them are not trying to sell the user their sponsored products, but their ideas and opinions, in an effort to establish themselves as experts in the political playground. They generate content to gather users (Park et al., 2021) and create an ever-evolving community of likeminded people. Creating a community on Twitter is rather similar to other networks, but more instant. Content is distributed for dozens of micro-networks that are capable of reaching larger audiences (including the non-direct followers of the influencer) through simple interactions, retweets and comments (Anger & Kittl, 2011). Reach gains a whole new type of power.

Nonetheless, influencers are not all the same – even political voices on Twitter. More recently, Campbell & Farrell, (2020) have defined classes for influencers based on their following with celebrity and mega-influencers reaching over 1 million users, macro-influencers from 100K to 1 million, micro from 10K to 100K and nano-influencers under 10K. Literature is not consensual about the number of followers for each category (Fecha et al., 2021). The previous is the most agreeable, but not suited for

Portuguese political influencers. Thus, for the present study, there will only be considered macro-influencers users with 50K or more, micro with 10K or more and nano with less than 10K.

Besides the following count, the difference between influencer categories lies in their credibility, intimacy and authenticity (Balaji et al., 2021; Fecha et al., 2021; Park et al., 2021). Social media influencers are not always the traditional celebrities that made a successful transition to online social networks (Fecha et al., 2021), sometimes they are regular users that achieved influencer status (Delbaere et al., 2021) by consistently publishing their ideas, gathering a large following and hence becoming a position of influence within their audience.

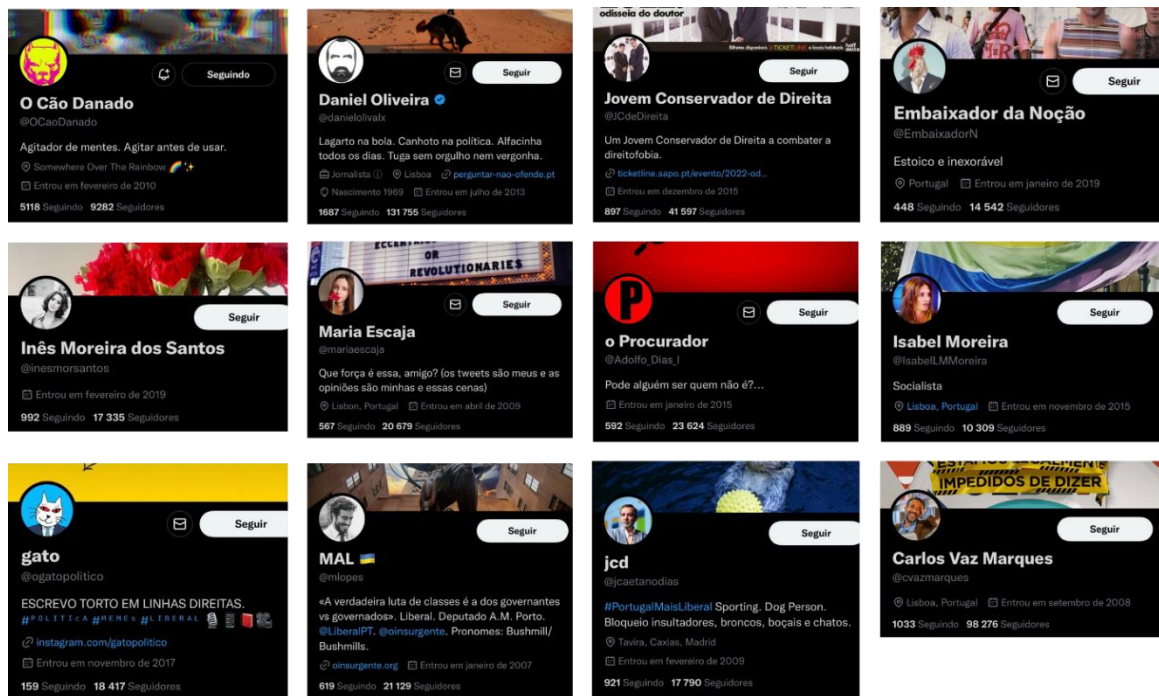
This aligns with the trend that users like to follow and deal with strong opinion leaders. Larger influencers (including the macro) are less likely to expose these strong and harsh opinions, scared that it may decrease their likeness (Fecha et al., 2021; Park et al., 2021). Research shows that smaller influencers (micro and nano) have different results.

Especially in the case of nano-influencers, usually, their audience is composed of their family, friends and acquaintances, making their suggestions, ideas and recommendations perceived as less risky for their audience (Balaji et al., 2021). It is always more effective to influence a friend or someone who they share a deep connection with to try new things and propose new ideas and concepts than random strangers on the internet (Au-Yong-Oliveira et al., 2019). Nano-influencers seem to have the most influence on local and regional areas and niche content (Balaji et al., 2021).

As this research focuses on the younger generation, it is imperative to point out that Gen Z, the generation that is becoming voters for the first time, consider influencers as equals, peers that are trustworthy and more reliable if compared to the usual celebrities. They are rather demanding users that expect their influential voices to not be corrupted by brands (Pradhan et al., 2022) – or, political brands, in this case.

In light of providing examples, the Portuguese political influential voices come from comedians, less-known assembly deputies, columnists and journalists, commentators or just general militants. The following fit into those segments:

Figure 1 - Example of Twitter's Portuguese Influencers with a Political Connotation



Source: Twitter (17/11/2022)

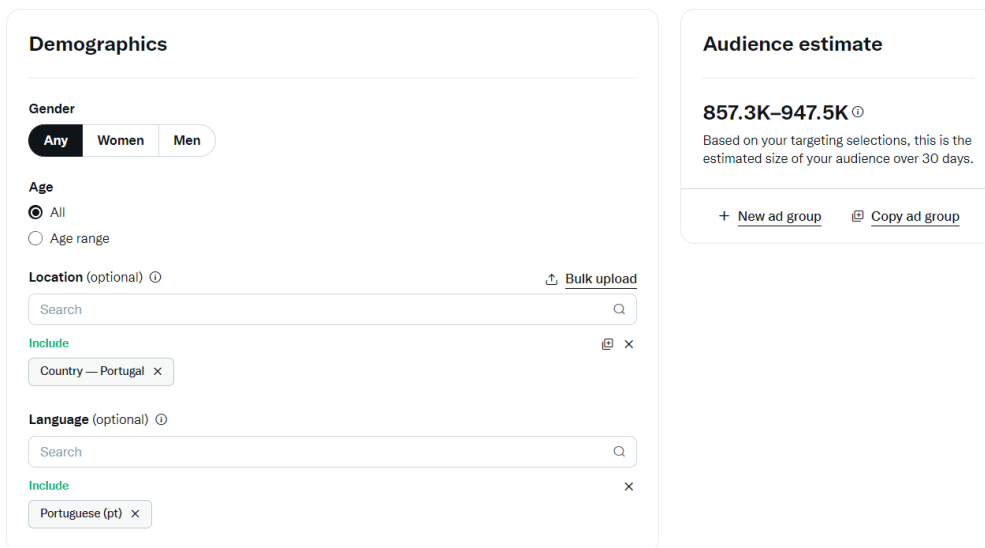
### 2.2.3. Mining Portuguese Political Brands on Twitter

In Portugal's case, Twitter is not used as a tool to communicate to the overall population, but as a parcel of it – one that tends to be more informed, interested in politics, and, if compared with the general citizens, more polarized and radical (Rádio Renascença, 2020). Younger users are a great part of this parcel, making Twitter a logical medium to harvest their opinions. There is not much research on European and/or Portuguese users' demographics, but it is possible to get a forecast on active age groups on Twitter when using the Twitter ADs segmentation tool.

When building and segmenting an ad, if considering all genders and age ranges in Portugal that are Portuguese speakers, the audience estimate within over 30 days is from 857.3K to 947.5K (Figure 2). If segmented the group age from 18 to 34<sup>1</sup>, the audience estimate within over 30 days is from 456.9K to 505K (Figure 3) – concluding that the younger audiences make up more than 53% of the total audience.

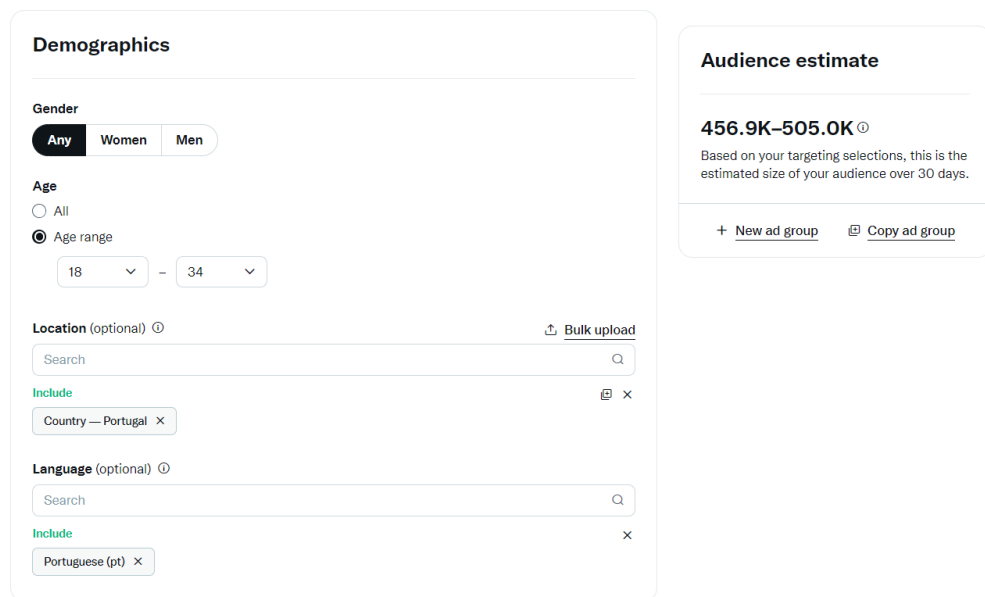
<sup>1</sup> youth group considered for this research, starting on the age when people get to vote for the first time

Figure 2 - Audience Estimate for All Portuguese Users



Source: Twitter Ads (10.02.2022)

Figure 3 - Audience Estimate for All Users Between the Ages of 18-34



Source: Twitter Ads (10.02.2022)

The uniqueness of the user-generated content produced by these audiences brings a new perspective on the various uses of social media mining. By definition, Zafarani et al., (2014), consider social media mining as *the process of representing, measuring, analysing, and extracting actionable and meaningful*

*patterns from large-scale social media data to understand human behaviour.* The present paper intends to understand the interactions between the highly politically active youth and relevant political brands through social media mining and gathering data with the help of Twitter's API. Even so, it is not possible to ignore the challenges and possible limitations that mining carries.

The same authors enumerate four concerns for such practice: the *Big Data Paradox* which compares the big proportions of social media data with how little relevant data each individual delivers; the *Obtainment of Sufficient Samples* through social media APIs where limited amounts of data can be collected daily, which raises concerns on the reliability of the sample and representation; the *Noise Removal Fallacy* that can remove valuable information and such noise can be relative depending on the task; and the *Evaluation Dilemma* in which ground truth testing procedures are not available in social media mining, bringing to the table challenges of credibility and validity of the evaluating patterns.

A variation in the data mining field, Text Mining finds meaningful patterns from the extraction of unstructured data (Jiang et al., 2014) in the form of natural language text (Hearst, 2003). The main objective is to turn this text into data that can be analysed by applying Natural Language Processing (NLP) and disclosing the various ambiguities in human language (Subramanian, 2020).

Not only for sentiment analysis, text mining is used in various fields like business intelligence, social media analysis, biomedical analysis, and software process analysis, also for security analysis, risk management, fraud detection and prevention, and customer care services (Kaur & Chopra, 2016; Rai, 2019).

One of the many ambiguities in human language is defining the sentiment behind a sentence and Sentiment Analysis is an ally to uncovering those mysteries. Evaluating a piece of text and interpreting the sentiment behind it can be a time-consuming task. Sentiment Analysis practices allow such tasks to be more agile, classifying various samples of text into positive, negative, or neutral polarity categories (Real Python, 2021; Towards Data Science, 2020).

Also called Opinion Mining, Sentiment Analysis is a technique *that analyses people's opinions, sentiments, evaluations, appraisals, attitudes, and emotions towards* a designed subject or object being its *products, services, organizations, individuals, issues, events, topics,* and their respective attributes (Liu, 2012).

Being that consumers highly rely on social media to expose their opinions and engage with brands and peers, valuable data can be harvested and classified, bringing into discussion meaningful insights that can help the decision-making processes. Over time, opinionated posts all over social media networks

ended up reshaping businesses and changing public sentiment, which influenced societies' social and political systems (Liu, 2012).

It can be considered that Sentiment Analysis techniques have three major advantages, being them *Scalability* which provides more cost-effective outcomes within limited amounts of time; *Real-Time Analysis* which help identify crisis and actions that need immediate action and provides the opportunity to survey consumers on products, services, or other issues like elections; and *Consistent Criteria* on sentiments that otherwise would be influenced by the evaluators' personal experiences, thoughts, and beliefs – gaining more accuracy and reliability on the outcome (MonkeyLearn, 2022; Neha et al., 2021).

As a research area that has been gaining traction, it is possible to identify various previous studies on Twitter's Sentiment Analysis techniques. More recently, (Neha et al., 2021) considered deep learning methods for Twitter sentiment analysis in comparison to already existing methodologies; 2019 brought us Cureg et al., (2019) with the research on emoticons, negations and punctuations with a Machine learning application to formulate a new model; Geetha & Kaliappan, (2018) studied a way to include intensity of Twitter messages taking into account text contexts with emoticons and punctuations; in the same year, Bindal, (2018) proposed a lexicon-based sentiment scoring methodology combined with a SVM classifier in a two-step method for sentiment analysis; Cahyaningtyas & Kusumaningrum, (2017) used LDA to better convert expression symbols and detect emotional proportion; Pak & Paroubek (2013) performed linguistic analysis of a English corpus collected on Twitter, explaining the singularities found and building a sentiment classifier; and finally, Nasukawa, (2003) tried to improve accuracy by applying semantic analysis with a syntactic parser and sentiment lexicon for web pages and news articles.

Throughout the years, scholars applied various types of methods to perform sentiment analysis on data and achieve optimal accuracy. Regarding the present paper, it will be used an opinion lexicon approach with pre-compiled opinion terms within a dictionary of negative, neutral and positive word polarities for accuracy purposes as suggested by Deshwal & Sharma (2016).



## **3. METHODOLOGY**

### **3.1. RESEARCH APPROACH**

To reach a consensus on the problems exposed previously, a data-driven approach was put in place. Contemplated as Dictionary/Lexicon-based, this approach classifies sentiments within a pre-existing bag of positive, negative, and neutral words (Bonthu, 2021; Hazra et al., 2017), more specifically, establishing the semantic polarity of text datasets based on a dictionary.

Through the dictionary, words are associated with a polarity value within a scale. As for this case of sentiment analysis focused on Portuguese, the dictionary used was the SentiLex-PT02 which contains a polarity scale from -1 to +1, where -1 is perceived as negative, 0 as neutral and +1 as positive.

It is also relevant to refer that the proposed classifier pertains to an unsupervised approach being that it functions without any reference corpus and does not require any training dataset (Bhuta et al., 2014; Paltoglou & Thelwall, 2012).

### **3.2. TOOLS**

#### **3.2.1. Twitter Application Programming Interface v2 (API) & Twitter Extractor**

For academic research and development purposes, Twitter offers an API protocol to facilitate the retrieval and analysis of their platform's data. To collect relevant data to support this study, it was necessary to apply for access which was given by Twitter. The developer account for academic projects is free of cost and allows one to retrieve 10 million tweets per month while providing access to a full-archive search (Twitter Developer Platform, 2020).

For the collection, the API extraction interface integrated with a Python notebook in which 3 search queries were defined correlating with the last 3 election moments that happened in Portugal (which are further highlighted in 3.4.3.).

For these queries, relevant political actors' and parties' names, political terms and hashtags were included to gather data from various points of view, ideologies, personalities, and opinions. Furthermore, specific dates were also explored to highlight the media communications such as televised debates and the election campaigning timelines themselves.

From such variables, it was possible to gather author IDs, tweet texts, dates of creation, retweets, replies, like and quote counts, sources, usernames, dates of account creation, user's public metrics,

URLs, verifications, and country specifications. After the extraction, all data was saved in excel files (.csv).

### **3.2.2. Python in Visual Data Studio**

Assisting both data collection and analysis, the code editor Visual Data Studio was an essential tool for the present study, appointed especially because of its built-in support and rich ecosystem extensions (Visual Studio Code, 2022) for the Python Programming Language.

#### **3.2.2.1. Python Packages**

To formulate the necessary functions to extract, process, and analyse the data, various open-sourced python packages were imported within the multiple code notebooks. These python packages are considered collections of modules that connect to each other (Educative, 2022) with different functionalities. For this research paper, there were packages such as pandas that were intrinsic to all notebooks, as well as other ones that were imported specifically for phases like data extraction, pre-processing or even visualization of results.

As previously referred, the versatile Pandas is the most efficient data manipulator, prepared for intelligent data alignment and integrated handling of missing data – a true ally when it comes to reshaping, subset and aggregating data (Pandas, 2015).

Requests is a package to keep-alive connection pooling of endpoints in HTTP-speaking applications such as Twitter (Reitz, 2022), while JSON collects data into a JSON formatted string and consequently a python object, serving as an encoder and decoder (Python Software Foundation, 2021c).

The package collections serve as a function for the creation of tuple subclasses with named fields (Python Software Foundation, 2021a). As a package, time and its function DateTime are useful for manipulating dates and times (Python Software Foundation, 2021b).

For pre-processing unstructured data, the NLTK platform allows it to easily work with human language data through its text-processing libraries (NLTK, 2022). Those in question served the purpose of tokenization, meaning turning iterable string objects into words, and removing stop words.

Furthermore, RE was used to substitute and replace strings with defined values (Educative, 2022b). In this case, the text pre-processing phase dealt with various non-necessary details for the analysis such

as URLs or even punctuation and other special characters. The BeautifulSoup library (Richardson, 2021) was applied with the same intent to remove HTML tags.

Other additional packages worth mentioning are `imp`, `textblob` and `unidecode`. The `imp` package (Python Software Foundation, 2022) provided the chance to connect and import external files like the `MultiLangSentimentAnalysis` module and organize the code more effectively.

As the present study relies on a lexicon-based approach, `textblob` retrieves the polarity and subjectivity of each sentence through a pre-defined bag of positive and negative words. The intensity that underlines some adverbs are also considered in this library (Shah, 2020).

`Unidecode` worked as a safety mechanist to ensure that each word did not have accents, symbols or non-Latin characters (Solc, 2022) during the sentiment analysis phase.

### **3.2.3. Multi-language Sentiment Analysis**

Sentiment analysis of different languages can be a complicated difficult task (Antonio et al., 2018). Each language as distinctive stop words with distinct text classifiers for negative, neutral, and positive words or groups of words. It should also be considered that the Portuguese grammar and vocabulary add a factor of difficulty, being that it's a multifaced language with special nuances, meanings and punctuations that are not contemplated in the English language (Dilmegani, 2022b, 2022a)

With that in mind, through the usage of a Lexicon, it was possible to compute the average of the text's words' polarity considering the meaning of such words (lemmas). The process began by testing if the language was a valid one, therefore loading the `SentiLex-PT02` sentiment lexicon and creating a dictionary with polarity per term. After getting the polarity, the text sentiment was computed. Defining the sentiment as an average polarity of -1: negative; 0: neutral; 1: positive was the natural step to get the compound sentiment value. As we were only just dealing with single words, it was necessary to also extend the compound sentiment polarity to the list/series of texts through tokenization and consequent appending of scores to the list.

#### **3.2.3.1. SentiLex-PT02 Sentiment Lexicon**

As previously stated, the `SentiLex-PT` is a sentiment lexicon for Portuguese datasets mainly adopted when the meaning and intensity of the words are the research focus. It is composed of 7104 lemmas

and 82347 inflected forms, describing 4779 (16863) adjectives, 1081 (1280) nouns, 489 (29504) verbs and 666 (34700) idiomatic expressions (CLARIN, 2017).

The SentiLex-PT authors Carvalho & Silva (2015) explain that it being a pioneering resource for this language, it tries to find human nature, construction, meaning and context through human predicates. The sentiment attributes considered for each entry are the target of sentiment, the predicate polarity, and the polarity assignment.

The SentiLex-PT has two dictionaries associated: one that describes the lemmas and one for the inflected forms. Each entry line contains the lemma (mainly with the masculine form for adjectives, singular form for the names that inflect in number and the infinitive form for verbs and idiomatic expressions), the grammatical category, and the sentiment attributes (polarity, polarity target and polarity classification (which can be manually or automatically attributed) (Carvalho & Silva, 2015).

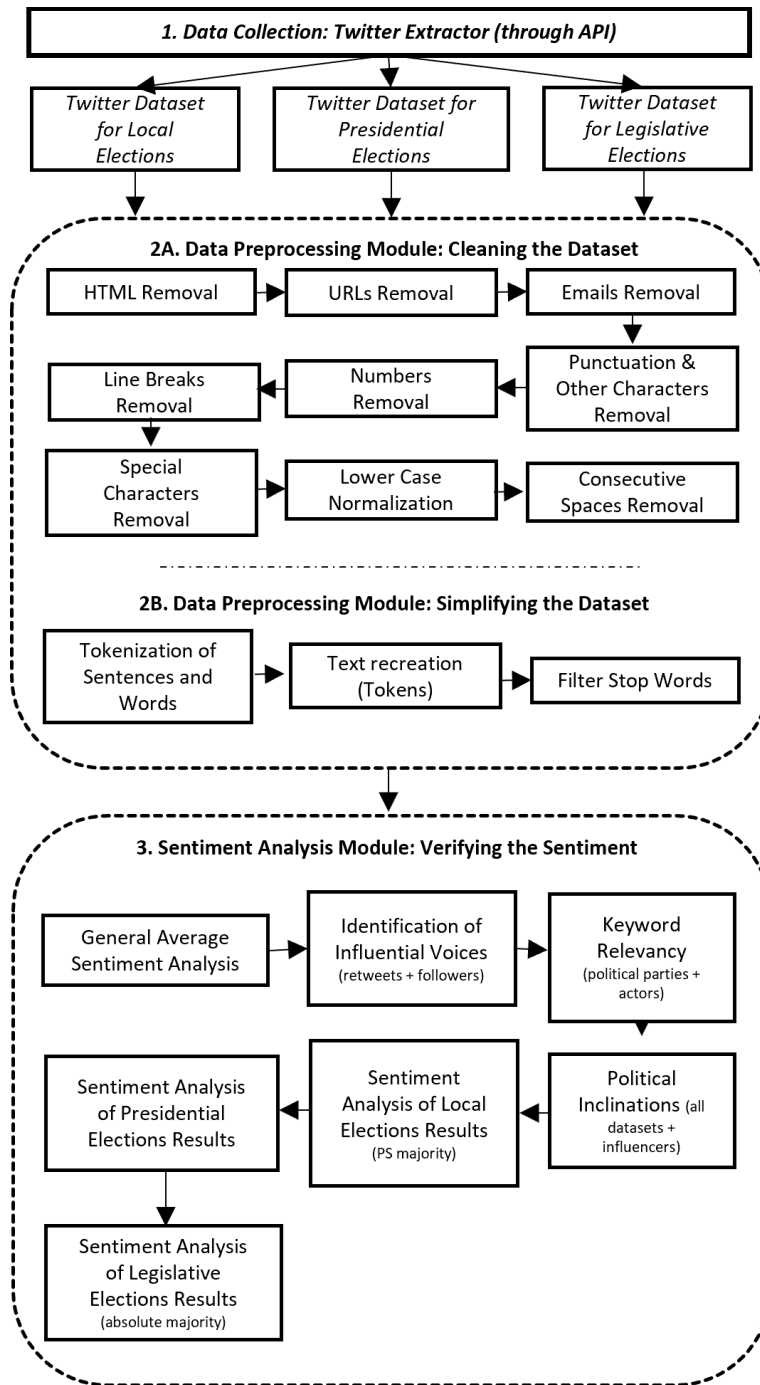
### **3.3. SOCIAL MEDIA ANALYTICS MODEL**

The proposed social media analysis model contains three distinct moments. The first one comprises the data collection, through Twitter's API, of the three elective periods. As previously mentioned, all data was extracted considering predesigned search terms such as political actors' names, political parties, hashtags, and other relevant terms.

As demonstrated below, the raw data were then pre-processed through consecutive techniques to clean and simplify the datasets so they would be more viable to draw the sentiment. The third and final moment brought meaning to the datasets, making it possible to polarize the tweets and the designed types of users.

As the main focus of the present thesis, it was essential to get a view of the general average sentiment of each of the 3 datasets, identify nano, micro and macro influential voices over followers, reveal keyword relevancy (political actors and parties names and other additional terms) within the datasets and define political inclinations of influencers and the datasets as a whole. As the results of each election period are public information, analysing if the sentiment on Twitter translates to the election results was also a consideration taken into account.

Figure 4 - Social Media Analytics Model



### 3.4. DATASETS DESCRIPTION

#### 3.4.1 Date Ranges

The present study encompasses three datasets representing each a different election moment. The presidential election appoints the president of the Portuguese Republic, the local election nominates the cities' councils throughout the country, as well as the assemblies for the municipals and the counties. The analysed date ranges of each elective period were as it follows:

Table 1 - Elective Date Ranges

<b>Elections</b>	<b>Date ranges</b>
Presidential	24/11/2020 to 22/01/2021
Local	08/07/2021 to 24/09/2021
Legislative	05/12/2021 to 28/01/2022

Source: Comissão Nacional de Eleições, (2021a, 2021b, 2022)

These date ranges were considered as they correspond to the legal periods of the election campaigns as stated on the official map calendar for each election period (Comissão Nacional de Eleições, 2021a, 2021b, 2022). Seeing as some televised debates by candidates and parties' representatives became popular topics on all types of media (Ballester, 2021) - and especially on twitter during their live airing – they were also considered for the date ranges.

#### 3.4.2 Age Ranges

As it is not possible to point out the specific ages of twitter users (as discussed previously) on this social media network, the larger audiences' ages are from 18 to 34 years old (Figure 3). Considering that the subjects to be analysed are the younger generation of voters and their sentiments on various political actors and parties, the datasets in question bring us a close, but not exact, perception of that audience's views.

To provide the closest analysis possible to the political Portuguese reality, various political actors, parties and youth groups were considered for the extraction of each dataset. The preselection of each

was made considering their relevancy, influence, and media coverage for the Portuguese political playground during these times.

Considering this research, including the youth groups' data was also an effort to get younger users' sentiments. Usually directed at young people between 14 and 30 years old and some resulting from youth movements, youth political organizations uphold the values of each political party (Juventude Comunista Portuguesa, 2022; Juventude Socialista, 2022), developing civic intervention among the participants.

### **3.4.3 Political Actors, Parties and Youth Groups**

Appendix A and B represent the political actors, parties and youth groups considered in the study which it was highlighted their names and twitter handles. The position and followers are only denominated to clarify relevancy. Some were more prevalent within the datasets; some were not even considered in all three. The following search terms were considered for the extraction tool:

**Presidential election search terms** = @AnaMartinsGomes OR "ana gomes" OR #anagomes; "andre ventura" OR @AndreCVentura OR #andreventura; "joao ferreira" OR @joao\_ferreira33 OR #joaoferreira; #marcelorebelodesousa OR "marcelo rebelo de sousa" OR #marcelorebelodesousa; @mmatias\_ OR "marisa matias" OR #marisamatias OR #presidenciais21 OR #presidenciais2021 OR "presidenciais 2021" OR "presidenciais 21" OR "presidenciais portugal"; "tiago mayan" OR @MayanTiago OR @LiberalMayan OR #tiagomayan #PortugalMaisLiberal; "vitorino silva" OR #vitorinosilva OR "tino de rans" OR #tinoderans OR @\_tinoderans OR "partido rir" OR @PartidoRIR OR #partidorir

**Local election search terms** = "catarina martins" OR #blocodeesquerda OR "bloco de esquerda" OR @catarina\_mart OR @BlocoDeEsquerda OR @jovensdobloco OR "autarquicas 2021" OR #autarquicas21 OR "autarquicas 21" OR #autarquicas2021 OR "francisco rodrigues dos santos" OR "CDS-PP" OR @\_CDSPP OR "carlos moedas" OR "rui moreira" OR "rui rio" OR @RuiRioPSD OR @ppdpsd OR "partido popular portugues" OR "partido social democrata portugues" OR "antonio costa" OR @antoniocostapm OR "grupo de cidadaos" OR "partido socialista portugues" OR @psocialista OR @JSPortugal OR @JSDPortugal OR @jcp\_pt OR "jeronimo de sousa" OR @CDUPCPPEV OR "partido comunista portugues" OR @Partido\_PAN OR "fernando medina" OR "suzana garcia" OR "partido livre" OR @LIVREpt OR "iniciativa liberal" OR #PortugalMaisLiberal OR @LiberalPT OR "partido chega" OR "o chega" OR "andre ventura" OR @PartidoCHEGA OR "tiago mayan" OR @MayanTiago OR

@LiberalMayan OR "joao cotrim de figueiredo" OR @jcf\_liberal OR "rui tavares" OR "ines de sousa real" OR "joao oliveira"

**Legislative election search terms** = "catarina martins" OR "bloco de esquerda" OR @catarina\_mart OR @BlocoDeEsquerda OR @jovensdobloco OR "legislativas 2022" OR #legislativas22 OR #legislativas2022 OR "CDS - Partido Popular" OR "francisco rodrigues dos santos" OR @\_CDSPP OR "rui rio" OR @RuiRioPSD OR @ppdpsd OR "partido social democrata" OR "antonio costa" OR "maioria absoluta" OR @antoniocostapm OR "partido socialista" OR @psocialista OR @JSPortugal OR @JSDPortugal OR @jcp\_pt OR "jeronimo de sousa" OR @CDUPCPPEV OR "partido comunista português" OR @Partido\_PAN OR "partido livre" OR @LIVREpt OR "iniciativa liberal" OR @LiberalPT OR #PortugalMaisLiberal OR "partido chega" OR "andre ventura" OR @PartidoCHEGA OR @AndreCVentura OR "joao cotrim de figueiredo" OR "rui tavares" OR @ruitavares OR @jcf\_liberal OR "ines sousa real" OR "joao oliveira" OR @Ines\_Sousa\_Real OR @joao\_g\_oliveira

The selected terms were not only the names and handles of the political actors, parties and youth groups. Hashtags and other relevant terms such as #PortugalMaisLiberal for IL or “legislativas 2022” for the legislative election were also contemplated.

As an example of the relevant data for extraction, the following tweet was posted by António Costa on September 14<sup>th</sup> of 2021 (during local elections) and it was manually identified that a 25-year-old user seems unsatisfied with the Prime Minister implemented measures. This tweet goes hand-in-hand with the current health crisis of the lack of doctors and work conditions in the national health system - as reported by Diário de Notícias, (2022).



Figure 5 - Example of Relevant Data for Extraction

**António Costa**   
@antoniocostapm

Parabéns à Universidade Católica e as maiores felicidades aos alunos, professores e funcionários da nova Faculdade de Medicina. Uma das alterações mais profundas do país nas últimas décadas tem sido a capacidade de ir vencendo o seu maior défice estrutural: o das qualificações.

[Translate Tweet](#)



7:00 PM · Sep 14, 2021 · Twitter for iPhone

**Ann** @anafmreis13 · Sep 14  
Replying to @antoniocostapm

o senhor Primeiro Ministro tinha obrigação de estar melhor informado sobre a realidade da formação médica portuguesa. Portugal não tem falta de médicos, tem falta de médicos fixados no SNS. uma medida que agrada apenas a quem não sabe o que pede.

2 1 21

Source: António Costa Twitter Page (14/09/2021)

## 4. DATA SENTIMENT ANALYSIS RESULTS

### 4.1. NUMBER OF TWEETS

Nowadays, brands have a higher chance of *inspiring and connecting with consumers* (Prahalad & V, 2020) – including political brands. But, even with higher chances, it is not certain that the message intended is passed through.

Though the presidential elections had the biggest number of tweets, the abstention rate of the users speaks for itself. In the presidential elections, the rate was higher in comparison to the last 2016 election where Marcelo Rebelo de Sousa also won the popular vote (PORDATA, 2021a). Throughout the election periods, it is possible to notice that the more voters tweet about the proposed political brands, the higher the abstention rate (Table 2).

Table 2 - Number of Tweets per Election Period VS Abstention Rate (%)

Elections	Number of tweets (All)	Abstention rate (%)
Presidential	532.329	60,8%
Local	153.745	46,4%
Legislative	508.975	48,6%

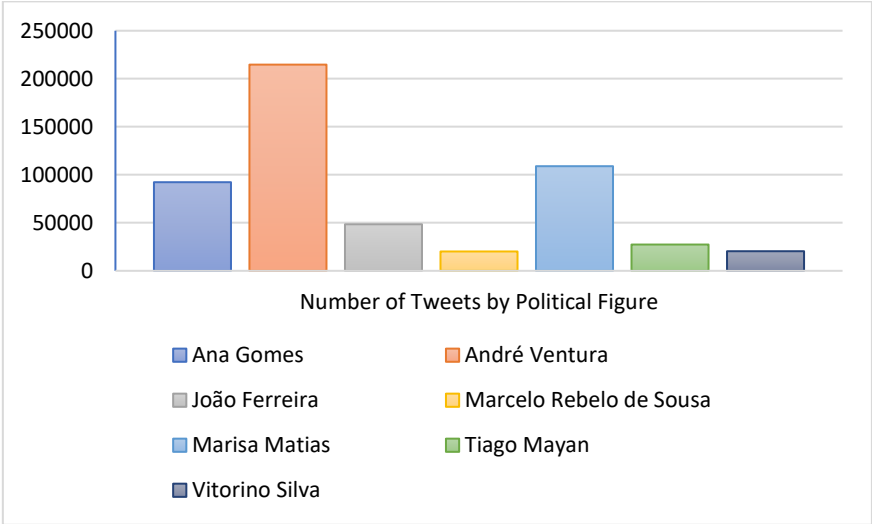
Source: PORDATA, ( 2021a, 2021b, 2022)

#### 4.1.1. Number of Tweets During the Presidential Elections

Overall, during the presidential elections, André Ventura was the candidate with the higher exposure on Twitter (214.710 tweets), followed by Marisa Matias (108.946 tweets). As previously mentioned, Marcelo Rebelo de Sousa was the sole winner of the elections (SGMAI Secretaria Geral, 2021a), and these results do not represent the actual event – and it never intended to serve as political predictions. However, this data may represent the development of an episode where Ventura disregarded Marisa’s capabilities to be president due to her image (Freitas, 2021). This brought up a movement on social media where women wore red lipstick to protest the words of the candidate. The candidate Ana Gomes was one of the participants showing solidarity with her opponent.

But this was not the only occasion where the far-right candidate’s name trended on Twitter. During the campaign and especially during the presidential debates, André Ventura made headlines for his unconventional ways, bringing in-paper documents and figures to highlight his arguments. Vitorino Silva lined up with this sort of arrangement during his debate with Ventura. In his pocket, Vitorino revealed a dozen of stones that served as mediums for his analogies (Expresso, 2021) – something unexpected to the opposing candidate and the public. Twitter did not waste time pointing their favour of Silva’s discourse, which explains why the candidate that placed last has the same number of tweets as the one placed first. It is also important to point out that Marcelo does not have an official twitter page which affects its reach in this social network and its younger audience. Figures 6, 7, 8, and 9 and table 3 feature the attained results.

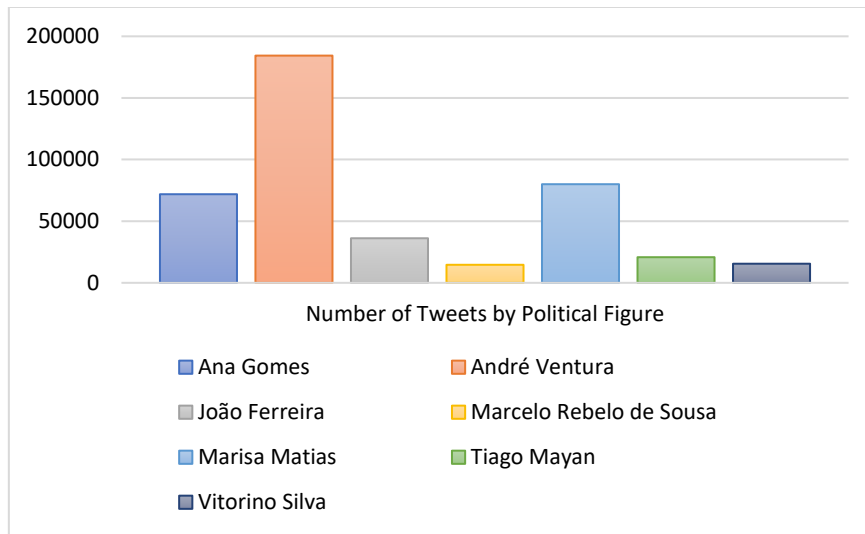
Figure 6 - Number of Tweets by Political Figure (All - Presidential)



Source: Presidential Analysis Notebook

For influential voices, the nano-influencers are in the majority being that they are the common public that interacts and posts for their close network of acquaintances. The total number of tweets is proportional to the nano numbers.

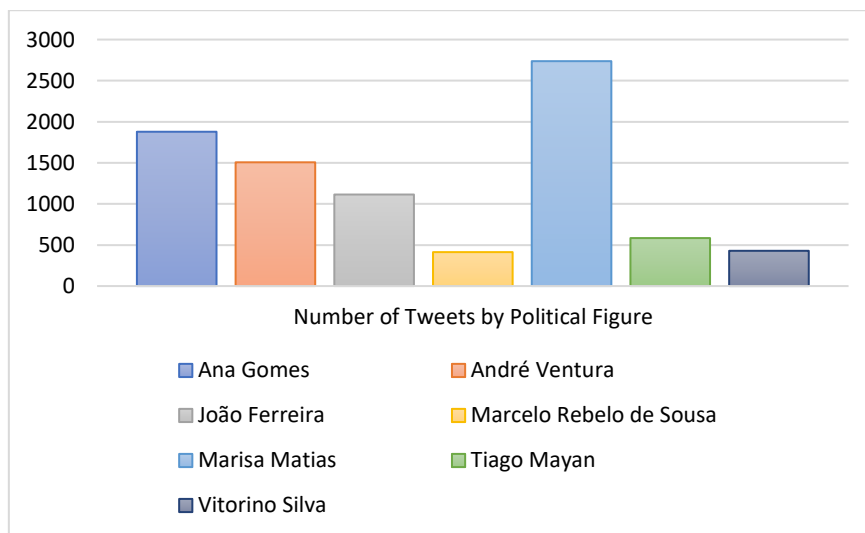
Figure 7 - Number of Tweets by Political Figure (Nano-influencers - Presidential)



Source: Presidential Analysis Notebook

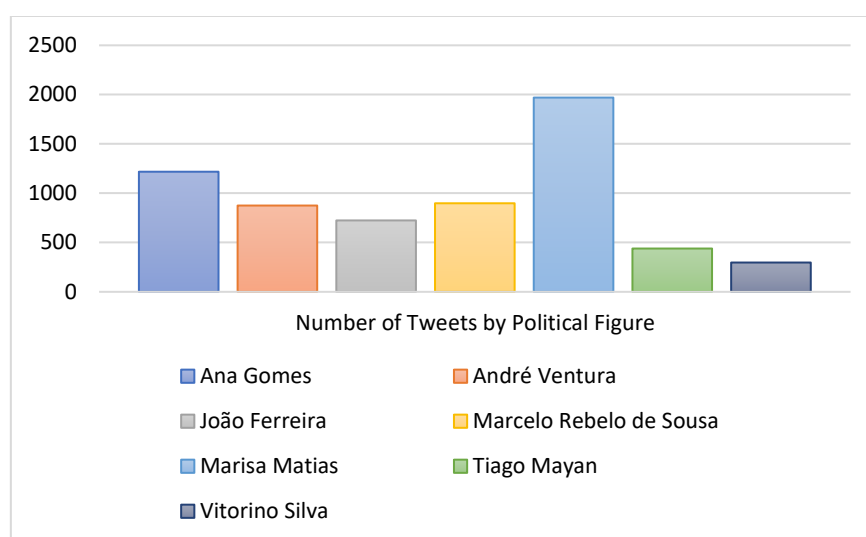
For micro users, excluding André Ventura, the majority of tweets are made about left-winged associated candidates. Ana Gomes presented herself as independent from any party, but it is impossible to ignore her socialist past and current positions. Marisa Matias and Ana Gomes take the stand as the candidates with the most exposure by macro influencers.

Figure 8 - Number of Tweets by Political Figure (Micro-influencers - Presidential)



Source: Presidential Analysis Notebook

Figure 9 - Number of Tweets by Political Figure (Macro-influencers -Presidential)



Source: Presidential Analysis Notebook

Table 3 - Numbers of Tweets by Political Figures (Presidential)

Political Figure	Number of tweets (All)	Number of tweets (Nano Influencers)	Number of tweets (Micro Influencers)	Number of tweets (Macro Influencers)
Ana Gomes	92.280	71.882	1.878	1.218
André Ventura	214.710	184.348	1.506	875
João Ferreira	48.457	36.153	1.114	724
Marcelo R. de Sousa	20.148	14.625	413	898
Marisa Matias	108.946	80.010	2.737	1.970
Tiago Mayan	27.371	20.785	584	439
Vitorino Silva	20.417	15.498	429	297

Source: Presidential Analysis Notebook

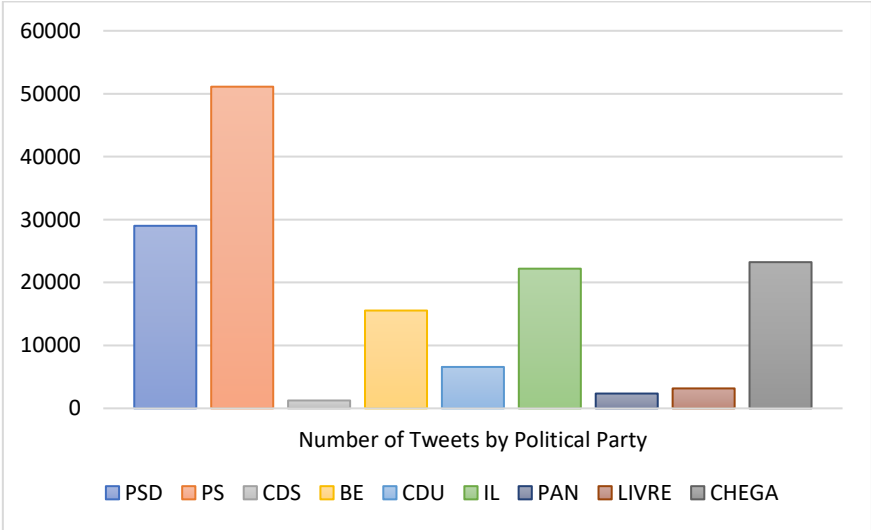
**4.1.2. Number of Tweets During the Local Elections**

Notwithstanding that the number of tweets is not a good predicament for election results, they represent the outcome of the local elections when analysing the overall, nano, micro and macro numbers. As discussed previously, the socialist party (PS) governs the majority of national city councils, assemblies and counties (51.118 tweets), followed by the democratic party (PSD) (29.010 tweets) and its CDS coalitions – which do not reflect on the CDS total number of tweets (1.252 tweets).

IL and CHEGA are considerably close in the numbers of tweets but not in results, being that CHEGA had 4,43% (SGMAI Secretaria Geral, 2021b) of votes, while IL, had only 1,54% (22.200 tweets). Lower than BE that even with 3,48% of votes has a lower total of tweets (15.546 tweets).

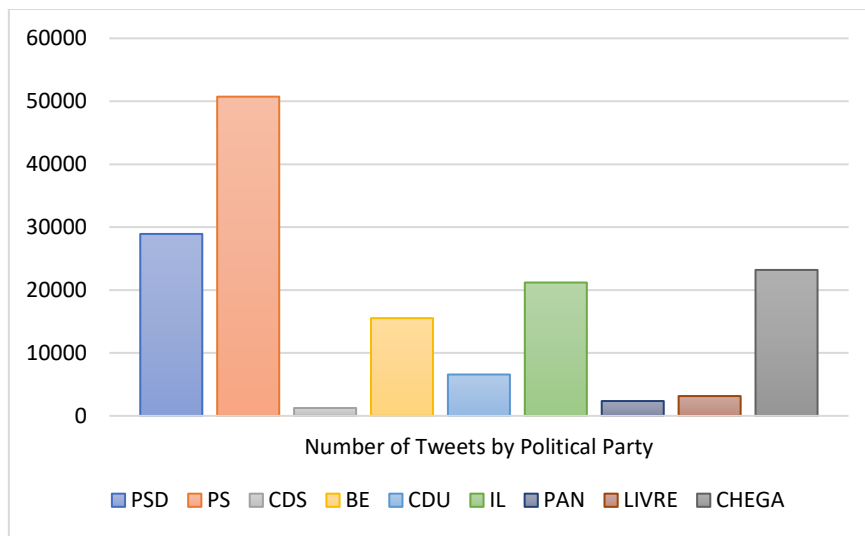
In the case of the Liberal Initiative (IL), João Cotrim Figueiredo considered that the future of Portugal is liberal because of the youth’s participation within the most dynamic layers of the Portuguese population (Lusa, 2021b). A statement that can explain the number of tweets, the political engagement on Twitter by the younger generation of voters and their national influence and placements considering that this is a relatively new party. Consult figures 10, 11, 12, 13 and table 4 to get a bigger picture of the results learned.

Figure 10 - Number of Tweets by Political Party (All - Local)



Source: Local Analysis Notebook

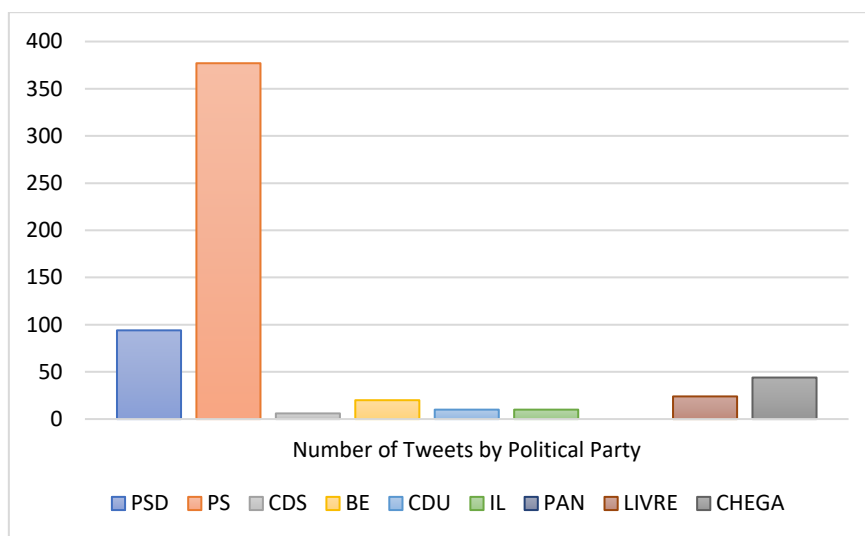
Figure 11 - Number of Tweets by Political Party (Nano-influencers - Local)



Source: Local Analysis Notebook

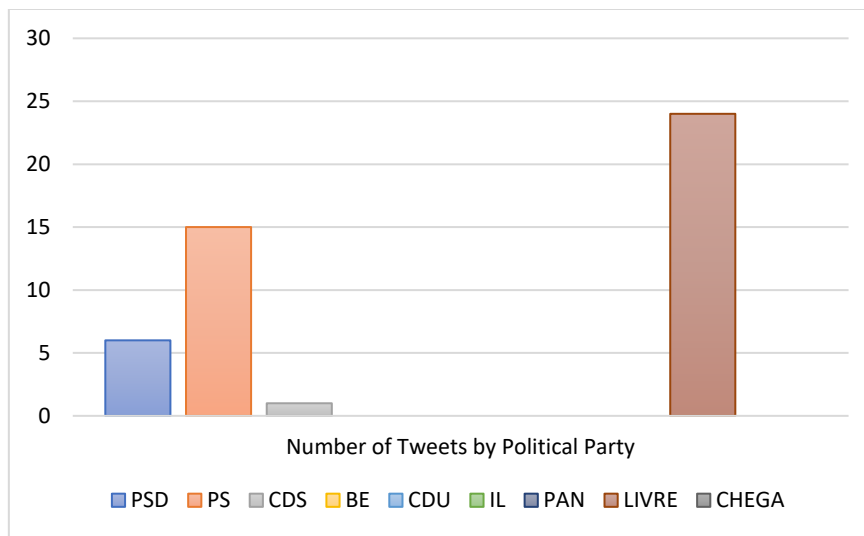
Even so, the most influential voices on Twitter seem to not care about IL. Not only them but BE, CDU, PAN and CHEGA had zero macro influencers interested. In PAN's case, not even a micro-influencer mentioned the party which did not prevent them from getting 23 mandates – 3 less compared with the 2017's elections. LIVRE also showed consistent results with the major influential voices and CHEGA with the micro-influencers.

Figure 12 - Number of Tweets by Political Party (Micro-influencers - Local)



Source: Local Analysis Notebook

Figure 13 - Number of Tweets by Political Party (Macro-influencers - Local)



*Source: Local Analysis Notebook*

In terms of political actors, the socialist and democratic representatives António Costa and Rui Rio corroborated the previous results. André Ventura kept its place of relevancy. Catarina Martins, on other hand, reiterated BE’s position of non-availability for negotiations with the right-wing parties. She also demonstrated interest in continuing the partnership with Fernando Medina (Lusa, 2021a) – which ended-up not happening. In fact, these elections became an unexpected loss for Fernando Medina against Carlos Moedas. Even though, all projections appointed a renewal of his mandate and for Lisbon to continue on the socialist wing, voters disagreed (Acção Socialista, 2021). The following results confirm the previous conclusions and events:

- Rui Rio – 20.471 tweets
- Suzana Garcia – 1.509 tweets
- Carlos Moedas – 2.913 tweets
- Francisco Rodrigues dos Santos – 218 tweets
- Catarina Martins – 6.416 tweets
- António Costa – 32.876 tweets
- Fernando Medina – 8.869 tweets
- Jerónimo de Sousa – 2.093 tweets
- João Oliveira – 353 tweets
- João Cotrim de Figueiredo – 2.022 tweets
- Tiago Mayan – 2.041 tweets



- Inês de Sousa Real – 8 tweets
- Rui Tavares – 950 tweets
- Rui Moreira – 2.034 tweets
- André Ventura – 13.228 tweets

Table 4 - Numbers of Tweets by Political Party (Local)

Political Party	Number of tweets (All)	Number of tweets (Nano Influencers)	Number of tweets (Micro Influencers)	Number of tweets (Macro Influencers)
PSD	29.010	28.910	94	6
PS	51.118	50.726	377	15
CDS	1.252	1.245	6	1
BE	15.546	15.526	20	0
CDU	6.581	6.571	10	0
IL	22.200	21.190	10	0
PAN	2.355	2.355	0	0
LIVRE	3.170	3.146	24	24
CHEGA	23.234	23.190	44	0

*Source: Local Analysis Notebook*

#### 4.1.3. Number of Tweets During the Legislative Elections

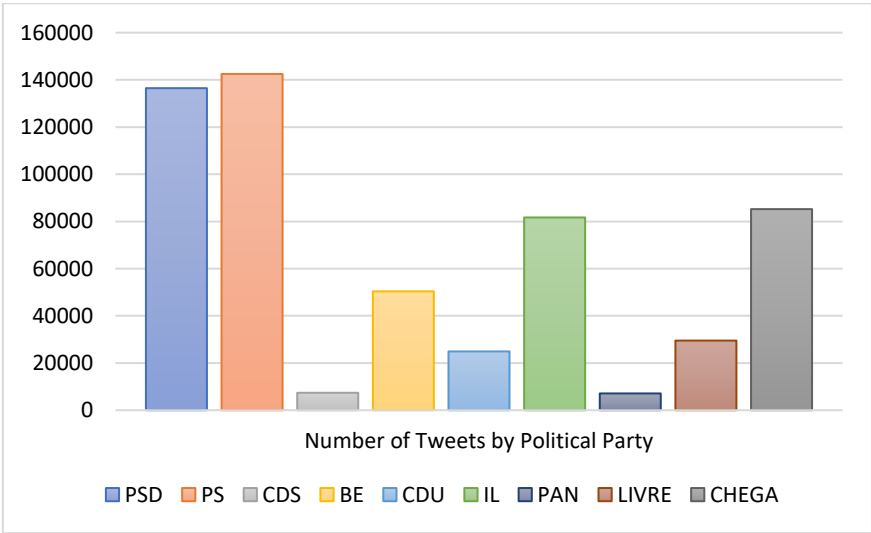
In the same way that the volume of tweets of the local elections somewhat may represent the election results, the equivalent situation happens for the legislative elections. Despite that, it would never be possible to predict the socialist majority victory, being that both PS and PSD had similar volumes of messages exchanged on Twitter. As previously mentioned, this was a historic win for the centre-left party that went against all the polls publicized by the media outlets (Universidade Católica Portuguesa, 2022).

Regardless of the results that motivated Rui Rio, the former president of the democratic party, to resign from the presidency of PSD and refuse his assembly mandate, other right-wing parties got more chances for representation. In third and fourth place, CHEGA and IL obtained rights for 12 and 8

assembly deputies. The number of tweets seems to agree with such results. Even though BE and CDU lost some representatives, their places also align with the interest shown by Twitter during the campaign.

Contrariwise, LIVRE is an odd-one-out case. After the party lost its assembly representation in 2019 at the hands of Joacine Katar Moreira, Rui Tavares seemed to regain the trust of 71.196 voters (SGMAI Secretaria Geral, 2022). making him the spokesperson on LIVRE’s account (Jornal de Negócios, 2022c). This trust may be represented by the number of tweets about the party, which surpassed CDU’s numbers even though they got more seats in the Portuguese assembly. To view the full results, refer to figures 15, 16, 17, 18 and table 5.

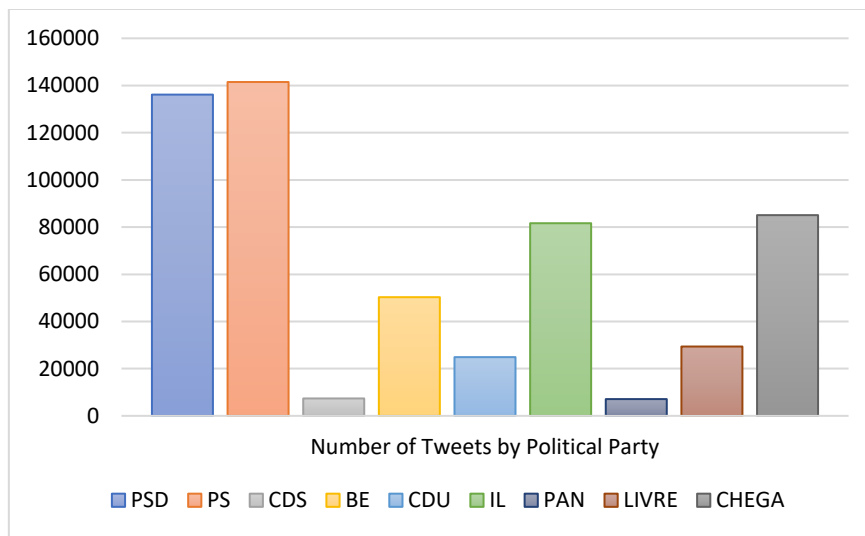
Figure 14 - Number of Tweets by Political Party (All - Legislative)



Source: Legislative Analysis Notebook

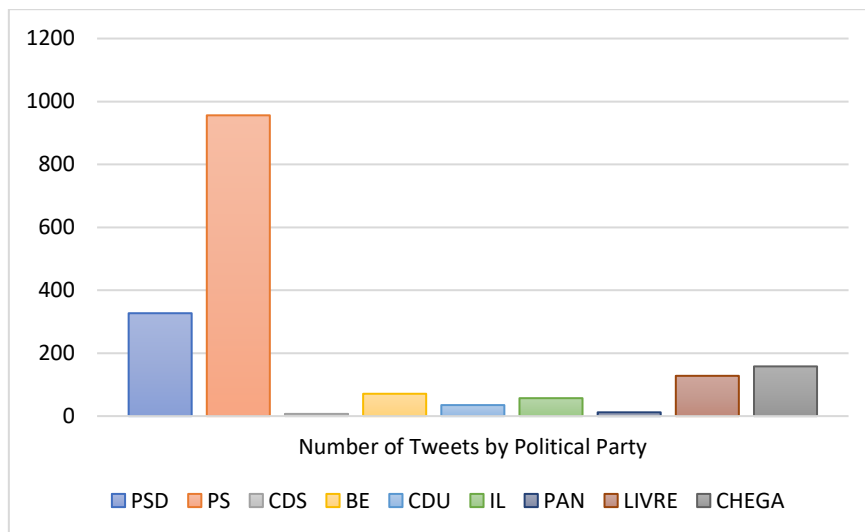
The nano influencers of the political side of twitter make the majority of the tweets analysed and its number do not differ much from the total number of tweets. For micro-influencers, the socialist party (PS) was a target of interest – being the most mentioned party in 956 tweets. PSD had less than half of that number. It is also important to highlight that LIVRE’s and CHEGA’s numbers 128 and 158 tweets, respectively, were made by micro-influencers – which contributes to the fact that LIVRE got its exposure even after past controversies. CHEGA also got more deputies besides André Ventura, who was acting as a one-man-show for the far-right party since the 2019’s legislative elections (Martins & Baptista, 2019).

Figure 15 - Number of Tweets by Political Party (Nano-influencers - Legislative)



Source: Legislative Analysis Notebook

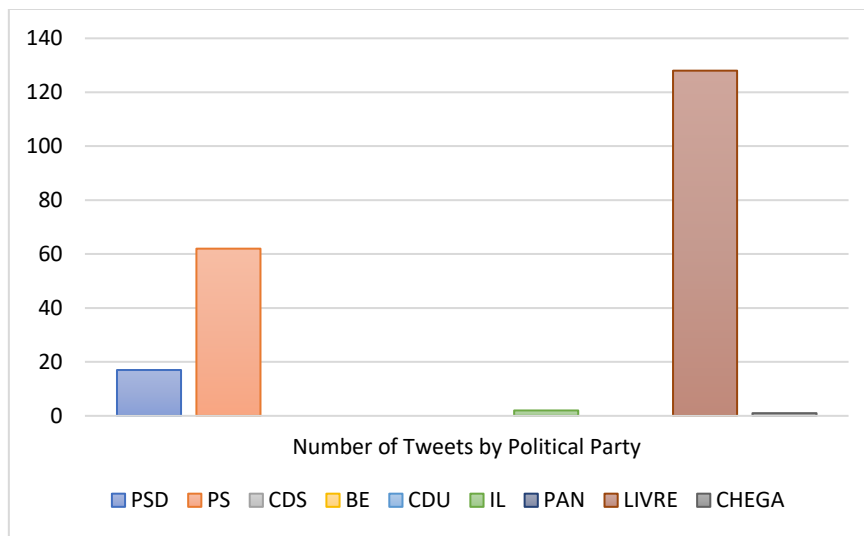
Figure 16 - Number of Tweets by Political Party (Micro-influencers - Legislative)



Source: Legislative Analysis Notebook

The considered macro influencers also emphasized LIVRE and PS with 128 and 62 tweets, respectively. Parties like CDS, BE, CDU and PAN got no perceived interest – which could be a sign of their loss of representativity in the parliament. In CDS' case, this was also a historic loss. The party represented by Francisco Rodrigues dos Santos could not elect one single seat, breaking their 5 continuous previous mandates (CNN Portugal, 2022).

Figure 17 - Number of Tweets by Political Party (Macro-influencers - Legislative)



*Source: Legislative Analysis Notebook*

The political actors were a major decisive factor for the results of this election – but then again, the volumes of tweets could not represent the outcome, or else, the democratic party would have won the popular vote. The massive defeat provoked Rui Rio’s decision to abandon PSD’s president position (Jornal de Negócios, 2022d), as well as the refusal to continue representing the party in the parliament. This was met with bittersweet reactions on social media, which explains the volumes related to this political actor.

In comparison, Francisco Rodrigues dos Santos – another resigned party president – was met with indifference by Twitter users. António Costa and André Ventura kept their influential presence, being followed by BE’s Catarina Martins and IL’s João Cotrim de Figueiredo – which more closely competed within the elections with 4,91% of votes for IL and 4,40% for BE. The subsequent number of tweets corroborate the previous conclusions and events:

- Rui Rio – 123.843 tweets
- Francisco Rodrigues dos Santos – 2.098 tweets
- Catarina Martins – 29.937 tweets
- António Costa – 82.884 tweets
- Jerónimo de Sousa – 5.688 tweets
- João Cotrim de Figueiredo – 27.539 tweets
- Inês de Sousa Real – 2.105 tweets
- Rui Tavares – 15.555 tweets
- André Ventura – 73.603 tweets

Table 5 - Numbers of Tweets by Political Party (Legislative)

Political Party	Number of tweets (All)	Number of tweets (Nano Influencers)	Number of tweets (Micro Influencers)	Number of tweets (Macro Influencers)
PSD	136.481	136.137	327	17
PS	142.495	141.477	956	62
CDS	7.383	7.376	7	0
BE	50.366	50.295	71	0
CDU	24.922	24.887	35	0
IL	81.691	81.632	57	2
PAN	7.111	7.099	12	0
LIVRE	29.510	29.382	128	128
CHEGA	85.220	85.061	158	1

*Source: Legislative Analysis Notebook*

## 4.2. SENTIMENT ANALYSIS RESULTS

The abstention rate was already considered previously when analysing the total number of tweets by-election. But, at the end of the day, why do voters abdicate their rights? It is not really about abdicating – but more about expressing dissatisfaction about the political actors and parties or other concerning issues. The first reason connects with the user’s sentiment. They feel like nobody represents them, so the best solution is to not vote at all – not waste their time.

Still, it is important to consider other issues that may affect their willingness to vote. All election periods happened during COVID-19 – the president one, when vaccines and tests did not exist or were not available to the general public as they are currently. People feared the long queues and the probability of getting sick (Alpaio, 2020).

Even so, throughout the election periods, the sentiment was getting more negative corresponding to the abstention rate (Table 6). For the Presidential elections, and considering the health and safety concerns of voters, the sentiment was neutral – almost positive.

According to polls, there was not even a doubt that Marcelo Rebelo de Sousa would be nominated again (Amaral, 2021). On the other hand, the local elections showed a substantial decrease in the

sentiment of twitter users, even if the abstention rate was lower. It also should be considered that at the time, COVID-19 was getting under control being that Portugal had lower numbers of hospitalized infected patients in comparison to the previous 2 months (Nunes & Infografia, 2021).

For the Legislative elections, in fact, the abstention rate was higher than the rate of the Local elections, but overall, it dropped for the first time since 2005 (Jornal de Negócios, 2022b). COVID-19 was not a big threat anymore and voters wanted to be heard. Something noticeable too by the number of tweets during this time.

Overall, it must be contemplated that the sentiment dropped to negative levels from election to election. This begins to answer the question: is the Portuguese youth satisfied with their country's politic brands?

Table 6 - Sentiment per Election period VS Abstention rate (%)

<b>Elections</b>	<b>NoT<sup>3</sup> (All)</b>	<b>Sentiment</b>	<b>Abstention rate (%)</b>
Presidential	532.329	0.4530861303722135	60,8%
Local	153.745	-0.03554836987859196	46,4%
Legislative	508.975	-0.08394042376156052	48,6%

Source: PORDATA, (2021a, 2021b, 2022)

#### 4.2.1. Presidential Elections

The presidential elections may have had an overall neutral sentiment, but if the results are weighted by candidate, only two political actors conveyed that sentiment level. Marcelo Rebelo de Sousa, the elected candidate by popular vote, is one of them.

In an unexpected turn of events, Vitorino Silva - the candidate with fewer votes – displayed the most positive sentiment (even if still considered neutral). Ana Gomes, the independent candidate, and the rightful owner of the second place were also perceived with negative sentiment. João Ferreira and Tiago Mayan were the candidates with the most similar values.

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<sup>3</sup> Number of Tweets

For the most negative sentiment, André Ventura and Marisa Matias took the podium. Matias, herself, had the most negativity associated with her tweets. All the influencers' sentiment was pretty seamless for each candidate – except for Marcelo and Ventura. The current Portuguese president could not conquer the macro influential voices of Twitter, getting a slightly negative sentiment on that user type. Further, André Ventura still got a negative sentiment from macro-influencers, but it is possible to consider that they were more receptive than the other types.

The coming table provides a clarified and specific view of the sentiment polarities:

Table 7 - Sentiment by Political Figure (All Types of Users - Presidential)

Political Figure	Sentiment (All)	Sentiment (Nano Influencers)	Sentiment (Micro Influencers)	Sentiment (Macro Influencers)
Ana Gomes	-0.07137204	-0.073806	-0.04685836	-0.0364532
André Ventura	-0.1287015	-0.1303056	-0.1022023	-0.04647619
João Ferreira	-0.05478271	-0.05882885	-0.044614	-0.05805709
Marcelo R. de Sousa	0.03900458	0.04294571	0.03603713	-0.004083148
Marisa Matias	-0.2418559	-0.2633415	-0.1238034	-0.1754061
Tiago Mayan	-0.03222906	-0.03138911	-0.003848663	-0.07034928
Vitorino Silva	0.4530861	0.471048	0.2701632	0.2744108

Source: Presidential Analysis Notebook

**4.2.2. Local Elections**

Due to the perceived limitations further presented in 6.2., there were results with no sentiment – mainly for micro and macro-influencers. The socialist party, the most elected party throughout the country, presented a neutral sentiment only within micro-influencers. For the remaining types of users, PS was met with negative sentiment.

Overall, the most negative sentiments were observed on micro-influencers, conspicuously when BE, CDU, IL and CHEGA were mentioned. Other parties worth discussion were CDU, IL and LIVRE which

obtained neutral sentiment for all users and nano influential voices. In this case, LIVRE was the most consistent one among all types of users. On the negative side, PSD reported the most negative results. The following table sustains the previous claims:

Table 8 - Sentiment by Political Party (All Types of Users - Local)

Political Party	Sentiment (All)	Sentiment (Nano Influencers)	Sentiment (Micro Influencers)	Sentiment (Macro Influencers)
PSD	-0.05925314	-0.05917562	-0.08687943	No sentiment
PS	-0.03700035	-0.0377627	0.06675508	-0.06666667
CDS	-0.03068424	-0.03085676	No sentiment	No sentiment
BE	-0.04870331	-0.04854062	-0.175	No sentiment
CDU	0.01213215	0.01260716	-0.3	No sentiment
IL	0.02464457	0.02470074	-0.1	No sentiment
PAN	-0.01615004	-0.01615004	No sentiment	No sentiment
LIVRE	0.07377986	0.07296529	0.1805556	No sentiment
CHEGA	-0.08878947	-0.08828523	-0.3545455	No sentiment

*Source: Local Analysis Notebook*

In terms of political actors, André Ventura continued to display negative sentiments similar to those during the presidential elections – with an exception for the micro-influencers which turned out to be negatively higher. These values were proportional to the ones presented by CHEGA.

Moreover, João Oliveira and Rui Moreira had the most positive results throughout the three types of users and in total. Other political actors who have not presented any negative sentiment were João Cotrim de Figueiredo and Inês de Sousa Real.

Rui Rio ended up not conquering any neutral or positive sentiment among the users. PSD's Amadora representative, Suzana Garcia, did not do it as well. She even showed a harsher negative sentiment among nano influencers.

Carlos Moedas and Fernando Medina received a negative sentiment in general and among nano influencers, but both prevailed among micro-influential voices. Also, it should be noted that Medina



further presented a neutral sentiment for macro influencers. Catarina Martins and Jerónimo de Sousa did not enjoy the same results for that type of influencer in specific, revealing a rather negative sentiment – distinctively, Jerónimo de Sousa.

António Costa had clashing sentiments over the three types of users with a slightly negative sentiment for the total of users and nano users, neutral for micro-influencers and a higher negative sentiment for macro-influencers. The presented table 9 highlights and clarifies the previous results:

Table 9 - Sentiment by Political Figure (All Types of Users - Local)

Political Figure	Sentiment (All)	Sentiment (Nano Influencers)	Sentiment (Micro Influencers)	Sentiment (Macro Influencers)
Rui Rio	-0.05117677	-0.05135175	-0.002380952	No sentiment
Suzana Garcia	-0.01751381	-0.1754869	No sentiment	No sentiment
Carlos Moedas	-0.04609959	-0.04650674	0.3333333	No sentiment
Francisco R. dos Santos	-0.05259939	-0.05308642	No sentiment	No sentiment
Catarina Martins	-0.01557694	-0.01544033	-0.125	No sentiment
António Costa	-0.03173568	-0.03275223	0.111797	-0.2222222
Fernando Medina	-0.01225456	-0.01274224	0.02040816	0.1666667
Jerónimo de Sousa	0.07212136	0.07266858	-0.5	No sentiment
João Oliveira	0.03635505	0.03380952	0.3333333	No sentiment
João Cotrim de Figueiredo	0.07044181	0.07047666	No sentiment	No sentiment
Tiago Mayan	-0.06806304	-0.06809641	No sentiment	No sentiment
Inês de Sousa Real	0.593755	0.59375	No sentiment	No sentiment
Rui Tavares	-0.01573434	-0.01586796	No sentiment	No sentiment
Rui Moreira	0.04846772	0.04838043	0.0625	No sentiment
André Ventura	-0.127183	-0.126676	-0.3846154	No sentiment

Source: Local Analysis Notebook

### 4.2.3. Legislative Elections

As stated above, some fields could not comprehend sentiment due to the limitations presented in 6.2. Disregarding such, PSD and CHEGA admitted the most neutral sentiments with the macro and micro-influencers, respectively.

Overall, CDS was the party with the most negative sentiment. In a similar stance, PAN and BE did not convince the micro-influencer users. In the same way, PS could not satisfy the macro-ones. Every other party had similar slightly negative sentiment.

The henceforth table highlights the sentiments demonstrated before:

Table 10 - Sentiment by Political Party (All Types of Users - Legislative)

Political Party	Sentiment (All)	Sentiment (Nano Influencers)	Sentiment (Micro Influencers)	Sentiment (Macro Influencers)
PSD	-0.07936519	-0.07945335	-0.04974039	0.05882353
PS	-0.08927664	-0.0892897	-0.08293694	-0.1545699
CDS	-0.100385	-0.1004815	No sentiment	No sentiment
BE	-0.08205274	-0.08192556	-0.172619	No sentiment
CDU	-0.08014558	-0.08013108	-0.09090909	No sentiment
IL	-0.08691275	-0.08695558	-0.02923977	No sentiment
PAN	-0.07897864	-0.07868613	-0.25	No sentiment
LIVRE	-0.06635312	-0.06642194	-0.0505291	No sentiment
CHEGA	-0.08337305	-0.08355368	0.01244589	No sentiment

*Source: Legislative Analysis Notebook*

Considering political actors, João Cotrim de Figueiredo had the most neutral sentiment – notably within micro-influencers. It should also be recognized that Jerónimo de Sousa and André Ventura similarly had neutral results for this type of user – which contrasts with CHEGA’s sentiment values. PSD’s Rui Rio was perceived with negative sentiments, apart from a neutral position from the macro-influencers.

Francisco Rodrigues dos Santos and Jerónimo de Sousa were the actors with the most dissonant negative sentiments, followed by Catarina Martins and Rui Tavares - only for the micro-influencers; and António Costa for the macro. The overall general sentiment was marginally negative, and the results were similar between actors. Such observations are captured in the next table:

Table 11 - Sentiment by Political Figure (All Types of Users - Legislative)

Political Figure	Sentiment (All)	Sentiment (Nano Influencers)	Sentiment (Micro Influencers)	Sentiment (Macro Influencers)
Rui Rio	-0.07880499	-0.07889176	-0.05138427	0.05882353
Francisco R. dos Santos	-0.1050336	-0.1051848	No sentiment	No sentiment
Catarina Martins	-0.07901093	-0.07876027	-0.240942	No sentiment
António Costa	-0.08230993	-0.08243413	-0.03720113	-0.1666667
Jerónimo de Sousa	-0.1005368	-0.1009842	0.06666667	No sentiment
João Cotrim de Figueiredo	-0.08039616	-0.0805534	0.1875	No sentiment
Inês de Sousa Real	-0.07883914	-0.07883914	No sentiment	No sentiment
Rui Tavares	-0.05439405	-0.05408695	-0.1904762	No sentiment
André Ventura	-0.08259195	-0.08278736	0.02733333	No sentiment

Source: Legislative Analysis Notebook

## 5. DISCUSSION

With this study, it was possible to bring light to meaningful patterns from large-scale social media data - considering that the number of tweets analysed in total was 1.195.049 – and understand a little bit more about voters' behaviours during the three election periods (presidential, local and legislative) (Zafarani et al., 2014).

It has become apparent that, in fact, social media connects influential and regular voters with political brands (Stieglitz et al., 2012). Or else, it would not be possible to identify nano, micro and macro types of users – which was conducted for the present study. These are certainly influential voices within the Twitter sphere that may affect the decision-making of the elements within the community, including the youngest voters on which the research is focused.

The number of tweets and the missing sentiment on the most influential types of users (micro and macro) corroborates the notion that larger influencers are less likely to expose themselves to this form of political discussion, afraid that it might influence negatively their public image (Park et al., 2021).

Nano-influencers, on other hand, were the majority of the perceived influencers considering that “regular users” are part of that group and they influence their families, friends and acquaintances (Balaji et al., 2021) – a dominating force during each period that dictated the global sentiment of the 3 datasets.

All in all, for the Portuguese playground, users' motivations for sharing their political views and engaging with political brands on Twitter seem similar to the reason presented in USA's Trump Era study (Penney, 2020). Considering the rise of extreme and radical ideas and misinformation provoked by the far-right party CHEGA, many took it into their hands to speak out against such issues. The political environment in Portugal enables their freedom of speech and empowers their inherent democratic rights – which may not be available to youths in other countries (Muhamad et al., 2021).

Besides that, the data support the assumption that it is not possible to predict elections through Twitter, but it is indeed achievable to conceive a collective notion of the voters' tendencies and affiliations – yet, flawed by overgeneralizing (Gayo-Avello, 2012).

The results show that the higher sentiment actors and parties were not always the ones elected. Take into account, Vitorino Silva's case. The candidate had a small trending event during his debate with Ventura and became the political actor with the most favourable sentiment. A candidate that is mostly perceived as a TV personality and that had the least amount of votes.

In a way to further justify the previous statement about user motivations for Twitter engagement, André Ventura, and his far-right party CHEGA demonstrated the overall most negative sentiments among users. Except, a rare occasion where Ventura was perceived with a neutral sentiment within micro-influencers during the legislative elections.

Contemplating all the election results, data suggested that the popular vote could always be predicted – but still, it does not fully correspond to real events such as the majority election results in favour of President Marcelo and PS (for the legislative).

Marisa Matias's case was also pertinent as her association with André Ventura may have influenced her sentiment for negative levels even with the supportive manifestations displayed on social media by women. From the 2016 presidential elections to the 2021's, Marisa lost her place as the most-voted woman for president, in the process also losing 300K votes (Diário de Notícias, 2021a). This may have acted as a warning for the future of BE which has been losing mandates through elections even though they formed the famous Geringonça coalition with PS, CDU and PAN in 2015 (Jornal de Negócios, 2022a) – a remark that prevailed in Catarina Martins' sentiment analysis. Like BE, PAN suffered from the same situation (even with the neutral sentiment shown for Inês de Sousa Real).

The same concept could be applied to PSD's legislative election results if considering that the negative sentiment prevailed from the local to the legislative elections on the identified types of users. Nonetheless, the macro-influencers still presented a neutral sentiment toward the political party and its former president Rui Rio. Also, data supported the results related to CDS disappearance from the parliament and the consequent resignation of former CDS president, Francisco Rodrigues dos Santos.

Further figures that gathered a neutral sentiment were Jerónimo de Sousa – a politician cherished by Twitter for his role on the Constituent Assembly after the revolution of April 25<sup>th</sup> of 1974 (Parlamento, 2022); and João Cotrim de Figueiredo – IL's representative that puts the future of the party in the younger generation's hands.

In terms of political parties, and focusing on local elections, CDU, IL and LIVRE were the parties with the best results in terms of sentiment in which LIVRE even conquered the favourability of the micro-influencers. João Oliveira from CDU and Oporto's Mayor Rui Moreira were the political actors with the most neutral sentiments – which may explain Rui Moreira's re-election.

The data also opposed the real events behind the Lisbon mayor dispute between Carlos Moedas and Fernando Medina, giving a more neutral sentiment to Medina (through micro and macro-influencers), which did not correspond to the final election results that elected Moedas.

If compared with the general population, Portuguese Twitter users may be more polarized and radical (Mesquita & Espírito Santo, 2020). The analysis identifies that this may be a correct statement. Overall, Twitter's sentiment was mostly neutral for left-winged actors and parties such as Vitorino Silva, João Oliveira, Inês de Sousa Real, CDU, PAN, LIVRE and sometimes, PS. The Carlos Moedas and Fernando Medina dispute also brings light to these results being that Medina revealed a more neutral sentiment in comparison to right-winged Moedas.

Nonetheless, it is also important to highlight IL's and Cotrim de Figueiredo's placements. Both liberal party and actor also perceived a more neutral sentiment – which proves their influence on Twitter and its younger users.

Furthermore, the analysis also suggests that the controversies and inconsistencies by some political brands may affect the sentiment of users. Not always negative advertising works to win public opinion over other candidates (Quelch, 2008)<sup>4</sup> and more often political brand leaders lose popularity with an unpopular decision (Lock & Harris, 1996).

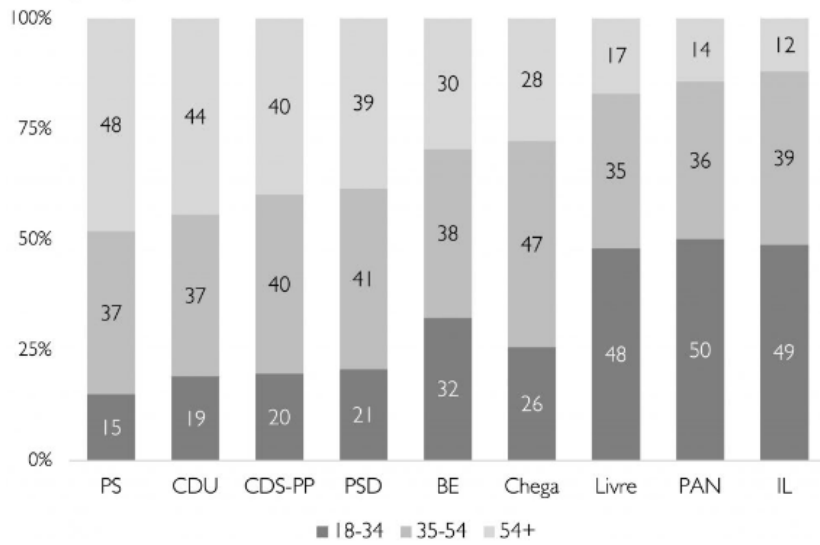
Even so, does it reflect on youth's engagement and participation in politics? The abstention rates are surely influenced by the COVID-19 pandemic evolution, however, a presidential election poll by ICS/ISCTE, (2020) provided an additional scenario. What differed among the younger generation was the propensity to not vote in the 2021's presidential elections, being that 35% of the subjects inquired revealed that they did not have the intention to vote and 18% did not even know who their elective candidate was. This was during the previous two months before the election day.

In the case of the legislative elections – in which the abstention rate dropped significantly – there is no abstention poll data related to younger users. There is, although, age groups' political tendencies data that authenticates the veracity of the sentiment analysis (Magalhães & Cancela, 2022). Like so, figure 18 shows that voters between the ages of 18 and 34 years old vote mainly for PAN, IL and LIVRE.

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<sup>4</sup> Marisa Matias's case may be an outlier

Figure 18 - Predictive Poll of Voting Intentions Between Age Groups



Source: Magalhães, (2022)

All things considered, when associating youth's satisfaction with political brands with the results presented in this study, there is an overall negative sentiment through all elections, actors, and parties. The sentiment even dropped between election periods and there is not one political brand that was met with a positive sentiment – only neutral. Generally, the data supports that most political brands do not have an effective communication strategy on Twitter – except for Liberal Initiative (IL).

## **6. CONCLUSIONS**

### **6.1. MANAGERIAL IMPLICATIONS**

The present research findings have substantial implications for political social media sentiment analysis and community management strategies with a focus on political brands. There are various politically influential and relevant brands on Portuguese Twitter (Expresso, 2015), but their community management strategies seem to not be reaching the younger age group of voters during the election campaigns.

This study intends to demonstrate that the users' satisfaction and engagement with political brands on social media surpass the barriers of the web in the real elective world. This is also a manifest to eager political brands to rethink their strategies and perceived authenticity online.

As of three election periods, no political brand revealed a positive sentiment within more than one million tweets analysed. Liberal Initiative (IL) may be one example to follow in terms of online results that translate into the reality of voting intentions (Magalhães & Cancela, 2022) – still, not a good representative of online positive sentiment.

Furthermore, this study may comprehend a contribution to the political marketing literature considering that it was identified a need for some updating (Lock & Harris, 1996; Shama, 1975).

### **6.2. LIMITATIONS AND FUTURE RESEARCH**

This study offered some limitations and challenges, above all, related to the data collection and analysis. Starting with the ethics behind social media data collection, in which, are raised some issues considering the privacy of the individuals; the accuracy and authenticity behind the collected and processed data; the property and value of the information and the accessibility of the information (Mason, 1986). The missing age-specific segments were the aftermath of such private Twitter settings.

Though the big data paradox and the noise removal fallacy can rise some concerns, the results of the analysis are expected to put at ease the doubt about the data relevancy and value. Nonetheless, in fact, there is an evaluation dilemma related to inexistent testing procedures on social media mining (Zafarani et al., 2014). In an effort to surpass such limitation, various relevant media outlets were used as pinpoints for ground truths – and like so, providing credibility and validity to the study.



Other issues of this approach rely on the missing system to deal with the context of words and phrases – their negative Portuguese forms, irony and sarcasm, vague statements (Camp, 2012) and the multipolarity provoked by mentioning more than one political brand in each tweet (Bhuta et al., 2014). As previously stated, Sentiment Analysis in languages other than English is a challenging exercise. The language itself has a lot of nuances, meanings, grammar, and vocabulary, which brought some limitations to this study (Dilmegani, 2022b, 2022a). Despite that, the sentiment lexicon SentiLex-PT02 brought in the opportunity to surpass the challenges and get comprehensive results, given its available lemmas and inflected forms.

It should be also pointed out that some sentiment values were not attainable due to the small amounts of data available for micro and macro-influencers.

Future research should focus on finding methods to overcome the inherent limitations of data collection, processing, and analysis. Moreover, changing the segmentation follower values for the influencers may provide further insights into the matter. In addition, frequency analysis and keyword extraction could contribute with extra information on the users' discussed issues as well as more sentiment-related techniques.

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## APPENDIX

### APPENDIX A

Table 12 - Relevant Political Figures

Political Figure	Position	Twitter handle	Followers
Marcelo Rebelo de Sousa	President of Portugal; Former member of PSD; Academic	-	-
António Costa	Prime Minister of Portugal; PS	@antoniocostapm	290.8K
Ana Gomes	Portuguese former diplomat; PS; Presidential candidate	@AnaMartinsGomes	163.5K
Catarina Martins	National coordinator of BE; Assembly deputy for BE	@catarina_mart	109.6k
Rui Tavares	Founder of LIVRE; Assembly deputy for LIVRE; member of the Lisbon City Council	@ruitavares	94.6K
Carlos Moedas	Mayor of Lisbon	@Moedas	80.5K
Marisa Matias	European Parliament deputy for BE; Presidential candidate	@mmatias_	78.3K
Rui Rio	Former national coordination of PSD and former Mayor of Oporto	@RuiRioPSD <sup>5</sup>	73.6K
André Ventura	Founder of CHEGA; Assembly deputy; Presidential candidate; PSD candidate for Loures City Council	@AndreCVentura	64.4K
João Cotrim de Figueiredo	Assembly deputy; President of IL	@jcf_liberal	58.2K
Tiago Mayan	Presidential candidate; Mayor of Aldoar; Former president of IL's national jurisdiction	@MayanTiago/@LiberalMayan	8K/19.2K

<sup>5</sup> Nowadays known as @RuiRioPT

João Ferreira	European Parliament deputy for CDU; Presidential Candidate	@joao_ferreira33	21.5K
Fernando Medina	Minister of Finance for PS; Former Mayor of Lisbon	@fmedinapessoal	18.9K
Vitorino Silva	TV personality; Presidential candidate	@_tinoderans	14K
Francisco R. dos Santos	Former president of CDS; Former JP member	@francisco__rs	12.8K
João Oliveira	Former assembly deputy for CDU	@joao_g_oliveira	8K
Inês de Sousa Real	Spokesperson for PAN; Assembly deputy	@Ines_Sousa_Real	6.3K
Jerónimo de Sousa	Assembly deputy for CDU; General Secretary of CDU	-	-
Rui Moreira	Mayor of Oporto; Independent	-	-
Suzana Garcia	Member of the city council of Amadora for PSD; TV personality; City Council President candidate for Amadora	-	-

*Source: Twitter*

## APPENDIX B

Table 13 - Relevant Political Parties & Youth Groups

<b>Political Party</b>	<b>Twitter handle</b>	<b>Followers</b>
IL	@LiberalPT	67.2K
PSD	@ppdpsd	65.3K
PS	@psocialista	58.8K
CDS	@_CDSPP	30.5K
LIVRE	@LIVREpt	29.8K
CHEGA	@PartidoCHEGA	28.6K
PAN	@Partido_PAN	12.4K
BE	@BlocoDeEsquerda	11K
CDU (PCP-PEV)	@CDUPCPPEV	8K
RIR	@Partido_RIR	1.3K
<b>Youth Groups</b>	<b>Twitter handle</b>	<b>Followers</b>
JSD (PSD)	@JSDPortugal	9.3K
JCP	@jcp_pt	7.3K
JSPortugal (PS)	@JSPortugal	3.8K
Jovens do Bloco (BE)	@jovensdobloco	2.7K

*Source: Twitter*