



## Article

# Exploring the Political Debate over the COVID-19 Vaccination on Twitter: Emotions and Polarization in the Spanish Public Sphere

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**Abstract:** In a scenario marked by COVID-19, communication has posed a real challenge for institutions. Since the first case of COVID-19, Spain has faced the enormous challenge of an unprecedented health, economic, and social crisis. The public sphere has put its trust in vaccination as the only chance for the country's recovery. To determine the role played by political leaders in the debate on vaccination and citizens' perception of crisis management, this article analyzes the messages posted on Twitter by the four leaders of the parties with the most representation in parliament: Pedro Sánchez (PSOE), Pablo Casado (PP), Santiago Abascal (Vox), and Yolanda Díaz (Podemos). Using a methodology for comparative content analysis on Twitter, a sample was established that began at the start of the vaccination process and inoculation with the first dose, and covered the entire year that followed. The research results, which contrasted with those collected in demographic surveys, reflected an increase in polarization and electoral use of the vaccine, which took precedence over the awareness-raising discourse typical of public campaigns.

**Keywords:** COVID-19; vaccination; public communication; polarization; Twitter



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## 1. Introduction

The public dilemma surrounding COVID-19 vaccination, the confusion, and polarization of political discourse on social media constituted the hallmarks of an institutional communication process also in crisis (Casero-Ripollés 2020). Having surpassed the first stage of the pandemic marked by the unknown nature of the virus and the digital informational chaos (Larrondo Ureta et al. 2021), a second phase emerged with the vaccine as its protagonist. In front of the containment measures employed to stop the virus (social distancing, confinement, or travel restrictions), the vaccine was postulated as the main hope to end the pandemic (Carrasco-Polaino et al. 2021). The priority of vaccination occupied the political agenda (Thelwall et al. 2021), which continued to promote the storytelling of conflict among leaders, parties, and governments.

Similar to previous crises (Broniatowski et al. 2018; Cheng et al. 2018; Wang et al. 2017; Ghenai and Mejova 2018), the origin of the virus, expectations for the vaccine, or preventive measures were sources of misinformation, especially on social media (Dredze et al. 2016; Kang et al. 2017). This informational disorder led the WHO to include distrust of vaccines in the list of the ten leading threats to global health (Friedrich 2019).

Vaccines are an opportunity for democratic systems to explain technical procedures and global health, and to reinforce their role as an instrument of transparency and good governance (Westphalen and Libaert 2008). However, facing social audiences and taking Twitter as the primary support for propaganda and cyber rhetoric (López Meri 2016), political communication favors personalization and spectacularization strategies over resources that guarantee reliability (Amado 2016; Más-Manchón and Guerrero-Solé 2019). Institutional political discourse shows signs of improvisation, insecurity, and disconnection from experts. The opinion of specialists, professionals, and scientists is undervalued

because it does not represent the ‘people’ (Waisbord 2018). Disinformation and denialism, the battle for global influence, as well as polarization are intensifying (Ali and Gatiti 2020). Doubts and suspicions concerning vaccines are mixed with public distrust of institutions. Politicization of uncertainty further weakens a democratic system that was already in decline (Colomina 2021; Wardle 2017).

According to the specific Digital News Report Spain (Negredo et al. 2020), 44% of the surveyed population stated that they found a lot or quite a lot of misinformation regarding COVID-19 on social media, and blame politicians (42%), the media (36%), and the government (34%) for the hoaxes. For its part, the report prepared by the Spanish Foundation for Science and Technology (FECYT) measured the evolution of attitudes towards vaccination in Spain through three representative surveys (n = 12.162) (Lobera Serrano and Álvarez 2021). Additionally, the report advanced theories on acceptance or resistance of the population (Ramonfaur et al. 2021; Lorini et al. 2018; Hornsey et al. 2018; Betsch et al. 2018), highlighting the concept of trust in institutions (a diffuse trust in the set of political organizations, the WHO and the European Union, municipalities, the government of Spain, and the autonomous communities) associated with a more favorable attitude towards vaccination.

Incorrect information or falsehoods from authorities had a negative impact on the course of the pandemic, as individuals adopted behaviors based on the data and information they received and the effects they produced on social media (Cuauthémoc Mayorga 2021; Ceron et al. 2021). In this context of confusion, conspiracy, and reticence, the report gathered recommendations on the increased visibility of institutions’ efforts at the international, national, and local levels, in addition to the effectiveness and unity in the fight against the pandemic, and the guarantee of public control mechanisms against disinformation. In this line of research, the objective was to analyze the political discourse on COVID-19 vaccination from the main leaders with representation in the Spanish Parliament on Twitter and check the perception of the audiences through the viral response on the network and sociological surveys.

### *1.1. Impact of the Vaccination Political Campaign on Twitter: The Axis of Misinformation*

The controversy over the benefits or drawbacks of social networks projected in the area of political communication maintains an open debate about disinformation fueled by the COVID-19 pandemic (Salaverria et al. 2020). The dysfunction of the institutional political message regarding vaccines (Costa-Sánchez and López-García 2020), the disconnection with experts and science (Pérez-Curiel et al. 2022a), and the degree of confrontation between leaders on Twitter are aspects that require academic review.

In the health sphere, the previous literature has analyzed the conversation in the public sphere on Twitter about specific vaccines and in general (Bello-Orgaz et al. 2017; Milani et al. 2020; Tomeny et al. 2017). Before the COVID-19 pandemic, healthcare professionals were already treating patients who had been misinformed online, a phenomenon known as “Dr Google” (Lee et al. 2014). However, interviews conducted by the New York Times (<https://nyti.ms/2FJFVNb>, accessed on 28 January 2023) with more than a dozen doctors and researchers specializing in disinformation from the United States and Europe revealed that they had never seen such a high volume as that related to COVID-19. These professionals blamed leaders such as Donald Trump for amplifying alternative theories, digital platforms for not doing enough to end false information, and people for so easily believing what they consumed online.

Due to its recent nature, there has not yet been an opportunity to analyze the political and citizen dialogue regarding COVID-19 vaccines. Beyond the advantages of the network, due to its instantaneousness, virality, and engagement (Campos-Domínguez 2017), Twitter has been useful to the scientific community to detect incorrect conceptions of users and act as detractors of false information, since the number of people who go to the Internet looking for information regarding vaccination is increasing (Graells-Garrido et al. 2019; Burnap et al. 2016; Kouzy et al. 2020; Jolley and Douglas 2014).

A stressed and frightened population seeks shelter in strong and competent leaders, capable of leading the country in the face of an uncertain scenario (Amat et al. 2020). This opportunity was being exploited by leaders to manage emotions and convert Twitter into an electoral tool at a time of pandemic. Recent studies have already confirmed a clear divergence between institutional messages concerning COVID-19 (Castillo-Esparcia et al. 2020a), consisting of administrative or service information, and the content of a more emotional nature, which citizens tend to interact with more (Castillo-Esparcia et al. 2020b).

A context is then produced of emerging fake news that has empowered anti-democratic policies, equaling the number of professional news items from accredited media (Fernández-Torres et al. 2021; Howard et al. 2018). An example is the conspiracy theories put forward by Donald Trump linking the origin of SARS-CoV-2 to a Chinese laboratory and the announcement of medications without scientific evidence. In addition, criticism concerning the efficacy of vaccines from other countries or their attitude of politicizing and downplaying the virus are hallmarks of this political leader's populist discourse. Therefore, politics and politicians are presented as a source of misinformation and propaganda on social media, especially during election periods (Pérez-Curiel and García-Gordillo 2020).

Regarding the national and local scope, given that vaccination was framed in a context of mixed management (governmental and autonomous communities), the treatment of vaccines on Twitter was a direct projection of what had happened internationally. The influence of a two-party system PSOE/PP that denotes conflict, polarization, and criticism of the socialist government's management shared by the media and by the social audience is added to the position of emerging forces such as Vox and Unidas Podemos, that points to a "polarized pluralist" discourse with a preference for centralized or ideologically aligned information (López-García 2020; Brennen et al. 2020). However, the conspiratorial narrative of "no to the vaccine" that was popularized by populists such as Trump or Bolsonaro on Twitter, was transferred to Spain with a behavior that eluded the topic in the case of the extreme right (Pérez-Curiel et al. 2021; Manfredi-Sánchez et al. 2021). In this context of antivaccine policies, social media acted as a feedback mechanism for ideologies that could foster polarization and, in turn, influence users by increasing confusion and misinformation (Wilson et al. 2014; Getman et al. 2018).

Paradoxically, a social network such as Twitter, with the capacity for nodal interaction, could generate echo chambers and activate the debate about vaccination (Cardenal et al. 2019; Pérez-Dasilva et al. 2020), becoming a focus of political interest and a channel for aligning audiences with ideologies. These suppositions also provoked conflicting opinions from the public regarding Twitter, which they rated as not recommended for health information due to the distrust it generated.

In any case, the influence of politicians and the electoral use they make of Twitter is added to the activism of a social audience, which also participates in the creation and propagation of false information (Pérez-Curiel and Limón-Naharro 2019). Topics related to the origin of the virus, expectations for the vaccine, the progression of the outbreak of infectious diseases, or preventive measures have been subject to fallacies in previous health crises (Broniatowski et al. 2018). At the beginning of April 2020, 113 million unique authors had shared messages on Twitter regarding COVID-19 (Larson 2020). The freedom of expression allows social networks to spread unchecked erroneous information and false news (Rosenberg et al. 2020; Salaverría et al. 2020). In conclusion, a risk ecosystem is needed that puts institutional dialogue with experts, informative rigor, and data verification on topics that affect public health and requires the commitment of political leadership to stop the metastatic spread of disinformation on the network (Bounegru et al. 2017).

### *1.2. Perception of Citizen's Social Attitudes toward Vaccination. Context Study*

In a moment of institutional and political crisis provoked by the infodemic, citizens have been left more vulnerable to the impact of disinformation, especially in the realm of social media (Salaverría et al. 2020). The social audience has not only become an object of influence, but also a potential disseminator of falsehoods concerning the virus,

contributing to exponentially increasing its social circulation radius (Martínez-Costa et al. 2022). Meanwhile, an increase in public confusion and distrust in politicians and media is evident, caused by the digital immersion of hoaxes and fake news regarding COVID-19, the government's management of COVID-19, or the efficacy of vaccines and vaccination campaigns (Pérez-Curiel and Casero-Ripollés 2022).

As part of the pre-investigation process, the report entitled "Evolution of the Social Perception of Scientific Aspects of COVID-19", published by the Spanish Foundation for Science and Technology (June 2020/January 2021) has been retrieved. The objective of this work was to measure the evolution of the attitudes of citizens towards vaccination in Spain and to identify the main factors involved in the reluctance exhibited towards COVID-19 vaccination. The report collected the results of two rounds of telephone surveys and one in-person survey, representative of the Spanish population, and covered a total of 12,162 interviews. The 5C model explained vaccine hesitancy in terms of five dimensions: trust in vaccines and the healthcare system, complacency, calculation, the cost of vaccination, and the perception of vaccination as a collective responsibility (Betsch et al. 2018). Meanwhile, the scale measuring agreement with conspiracy theories was centered on the case of vaccines (Shapiro et al. 2016). A summary of the results of the third and fourth survey conducted confirmed a greater acceptance of the vaccine, increasing from 23% achieved in July 2020 to 83% in May 2021 (1), a certain relaxation in the compliance with prevention measures, when only half of the population (49%) assured that they have been able to avoid sharing closed spaces with non-cohabitants (2), and the belief in conspiracy theories by a significant percentage of the population (3). In fact, almost a third of the Spanish population (31%) consider that masks are bad for their health, and close to 8% firmly believe that vaccinating children is harmful and this fact is hidden. All of this is in a context of disinformation, with 58% of Spaniards stating that they have seen or heard messages encouraging people not to vaccinate against COVID-19.

The applicability of this report to research on the strategies of the main Spanish political leaders regarding COVID-19 vaccination on Twitter has been particularly focused on the survey variable that deals with the level of trust of the public in political institutions. The results confirmed a diffuse degree of trust in the WHO and EU, passing through the government of Spain, the Autonomous Communities, and the Municipalities, which favored a position of reticence among citizens towards vaccination. The FECYT report set out a series of recommendations to combat the public's lack of trust in institutions. Among them, the pertinent recommendations included promoting transparency and making the efforts of institutional and political organizations and their efficacy in the fight against the pandemic and the deployment of the vaccination campaign more visible; increasing communication regarding the functioning of public control mechanisms, such as the European Medicines Agency and the Spanish Agency for Health Products; and combating rumors regarding the negative effects of vaccines or their lack of efficacy, linked to conspiracy theories and disinformation.

Therefore, the data collected from the three population surveys published by FECYT provided information on citizens' behavior toward the institutional management of the vaccine conflict and the use of disinformation, which allowed for comparison with the response of users to messages posted by Spanish political leaders on Twitter, in the context of the first COVID-19 vaccination campaign.

In conclusion, taking this entire context into account, the main objective of this article was to delve into the role that Spanish political leaders have played in the debate on vaccination and the perception that the public has concerning institutional management. Thus, this work analyzed, through a content analysis, the messages published on Twitter by the four leaders of the parties with the highest parliamentary representation in Spain.

## 2. Materials and Methods

The management of a global health crisis, marked by containment strategies such as social distancing, lockdowns, travel restrictions, and other services, and by the hope or

distrust in vaccines to end the pandemic, on a network such as Twitter (Friedrich 2019; Pérez-Curiel et al. 2022a) has generated an institutional and political campaign of dissent among experts. This campaign's main identifying features are polarization, ideological bias, and disinformation, projected in the distrust of the social audience.

From this perspective, the following research questions arose:

RQ1.—Are vaccines a topic of debate among the main Spanish political leaders on Twitter?

RQ2.—Are polarization, bias, and misinformation characteristics of political discourse on vaccination?

RQ3.—Are there differences between the response of Twitter users to political messages regarding vaccines and the public opinion collected in demographic surveys?

Taking these premises into account, a triple focus content analysis methodology that was quantitative–qualitative and discursive (Silverman 2016; Krippendorff 2012; Flowerdew and Richardson 2017; Van Dijk 2015) was applied, which was supported by the issue frame/game frame theory (Cartwright et al. 2019). The social network Twitter was chosen, given the importance it has achieved for political communication in electoral processes and in health crises (Alonso-Muñoz et al. 2017; D'Heer and Verdegem 2015; Chen et al. 2020).

To delve deeper into the role played by political leaders and experts during the COVID-19 vaccination process, we opted to study the Twitter accounts of the four Spanish political leaders with the highest parliamentary representation in the Congress of Deputies (Pedro Sánchez, Pablo Casado, Santiago Abascal, and Yolanda Díaz). Regarding the temporal period analyzed, the sampling began with the start of the vaccination process and the administration of the first dose in Spain (27 December 2020) and extended throughout the following year (27 December 2021). Although this time frame did not encompass the entire vaccination process, the twelve months of sampling captured the moments of greatest political media focus on immunization and were significant, both in terms of quantity and quality, to support the conclusions of the study.

Using the Twitonomy application, all tweets posted by these leaders during the specified period of time were downloaded, constituting a general sample composed of 4283 messages. From there, screening was performed, selecting those tweets that included the keywords 'vaccine', 'vaccines', or 'vaccination'. From the general sample, a specific sample of 166 tweets regarding the vaccination process, spread across the four leaders on Twitter, was derived and adjusted to the indications of previous methodological models, which recommended that, in the collection of data in discourse studies, quality should be prioritized over quantity (Baker 2006; Cleary et al. 2014; Silverman 2016). This premise was therefore applicable to the analysis of emotions, an indicator that the cited experts considered representative of the leader's behavior to influence the citizenry.

From this premise, a coding manual was designed that allowed the analysis of the narrative that Spanish political leaders developed throughout the vaccination process, composed of 11 quantitative, qualitative, and discursive variables. The statistical program chosen for the processing and exploitation of the data was IBM SPSS Statistics (Version 25).

The categorization table was structured into three main blocks: issue frame (topic), game frame (strategies) and discursivity (feelings and tone), and message diffusion (virality). These three methodological tools answered the three research questions. To clarify the adequacy of the methodological plan, Table 1 relates the research questions to the analysis indicators.

**Table 1.** Approach to operationalization of research questions.

Research Question (RQ)	Indicators
(RQ1) Are vaccines a topic of debate among the main Spanish political leaders on Twitter?	Issue frame (topics)
(RQ2) Are polarization, bias, and misinformation characteristics of political discourse on vaccination?	Game frame (strategies) and discursivity (tone and feelings)
(RQ3) Are there differences between the response of Twitter users to political messages about vaccines and the public opinion collected in demographic surveys?	Viralization capacity

Source: Own elaboration.

For the study of the issue frame and tactics (game frame), a pre-analysis phase was conducted in which a random sampling of 50 tweets was taken from the general sample ( $n = 166$ ) to determine and check the main categories for each variable. To deepen the narrative of the leaders, the bias of tweets and discursive emotions were also studied, adapting previous research to the characteristics of the sample being studied (Yeste and Franch 2018; Moret-Soler et al. 2022).

In order to estimate the viralization and influence capacity of each tweet, a previously used formula was applied (Pérez-Curiel et al. 2022b). In this sense, this metric completed a valid and proven formula for taking user responses into account (Carrasco-Polaino et al. 2018). The viralization capacity was based on the sum of retweets multiplied by 2, plus the likes and responses, all divided by the number of posted tweets ( $VC = (\text{sum of retweets} \times 2 + \text{sum of likes} + \text{sum of replies}) / \text{sum of tweeted messages}$ ). The double value of retweets was justified because Twitter increases the visibility of these tweets, showing the messages on the timeline of the person who shares them.

### 3. Results

The study of Twitter profiles of the main Spanish leaders and political parties during the twelve months analyzed gave rise to a total sample of 166 tweets related to the vaccination process (see Table 2). In this sense, it is noteworthy that the socialist leader, Pedro Sánchez, was linked to one out of every ten tweets published to this process (10.1%). Likewise, the President of the government also published 117 tweets concerning vaccines, which represented 70.5% of the specific sample.

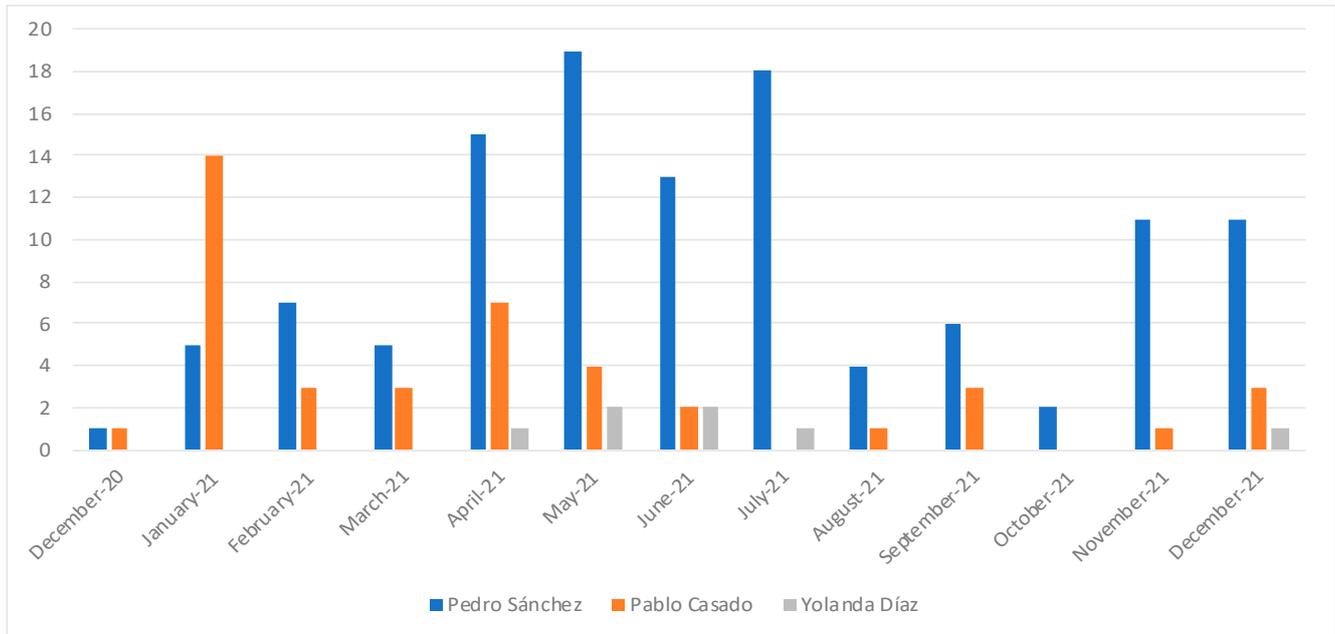
**Table 2.** Frequency of tweets from each political leader.

Leader	Total Tweets	Vaccination Tweets	% of Total Leader Tweets
Pedro Sánchez	1152	117	10.1%
Pablo Casado	1267	42	3.3%
Santiago Abascal	732	0	0.0%
Yolanda Díaz	1132	7	0.6%
Total	4283	166	3.8%

Source: Own elaboration.

Regarding the leader of the opposition and the PP, Pablo Casado focusses on vaccination in only 42 of the 1267 messages he sent on Twitter during the 12 months analyzed, which represented 3.3%. Regarding the specific sample, the popular leaders contributed 25.3% of the tweets to the study. On the other hand, it should be noted that the Vice President of the government and head of the Unidas Podemos list, Yolanda Díaz, only focused on vaccination in 7 of the 1132 messages published throughout the year studied, which represented 0.6% of the total and 4.2% of the specific sample. Regarding the leader of Vox, Santiago Abascal, the silence he adopted was striking regarding vaccination, since he did not dedicate a single message to this topic out of the 732 tweets he published throughout the year.

Delving deeper into the sample obtained from political leaders, it is worth considering the distribution of publications throughout the period of time studied (see Figure 1). Therefore, the data showed an increase in President Pedro Sánchez's activity in the months of April to July, coinciding with the period of highest vaccination among the population. On the contrary, Pablo Casado focused his message in January, when the Spanish government's vaccination strategy was not yet consolidated.



**Figure 1.** Frequency of tweets from each political leader by month.

### 3.1. Speech by National Leaders on Vaccination against COVID-19

After analyzing the theme on which the discourse of each of the selected leaders was based (see Figure 2), it could be observed that Pedro Sánchez mainly focused on providing information relating to the vaccination process (42.7%), the donation of vials to Latin American countries (12%), research into new vaccines (7.7%), or the purchase of doses (4.3%). Furthermore, there were a considerable number of cases (20.5%) in which vaccination was used to discuss other national issues, such as the economy, or to illustrate meetings with other international leaders (12.8%). In this line, Pablo Casado also focused on the vaccination process (47.6%), the purchase of vials (4.8%), or the research into new treatment (4.8%), but at the same time, used the situation to question the government's management in other national (28.6%) or international (9.5%) matters. Meanwhile, Vice President Yolanda Díaz dedicated the clear majority of the few messages she posted on providing information related to the vaccination process managed by the government (71.4%), and the rest to other national issues (28.6%).

Diving deeper into the discursive strategies of Spanish leaders regarding vaccination (see Figure 3), it was observed that President Pedro Sánchez mainly bet on providing information relating to his management at the head of the government of Spain (83.8%), including concerning the distribution of doses, the progress of the national economy, or international management, while specific messages aimed at raising awareness among citizens regarding the need to immunize themselves against the virus constituted a minority of messages (14.5%). Following this line, Vice President Yolanda Díaz focused a clear majority of her limited messages on vaccination to spread the government's management (85.7%) compared to those that aimed to raise awareness among the population (4.3%). By contrast, Pablo Casado used vaccination to question the management of the Spanish government (61.9%) or to spread the management of conservative leaders (23.8%) such as Ursula Von der Leyen, Juan Manuel Moreno Bonilla, or Isabel Díaz Ayuso. It is noteworthy

that the leader of the PP only dedicated two tweets (4.8%) to explaining the importance and convenience of getting vaccinated against this disease to citizens.

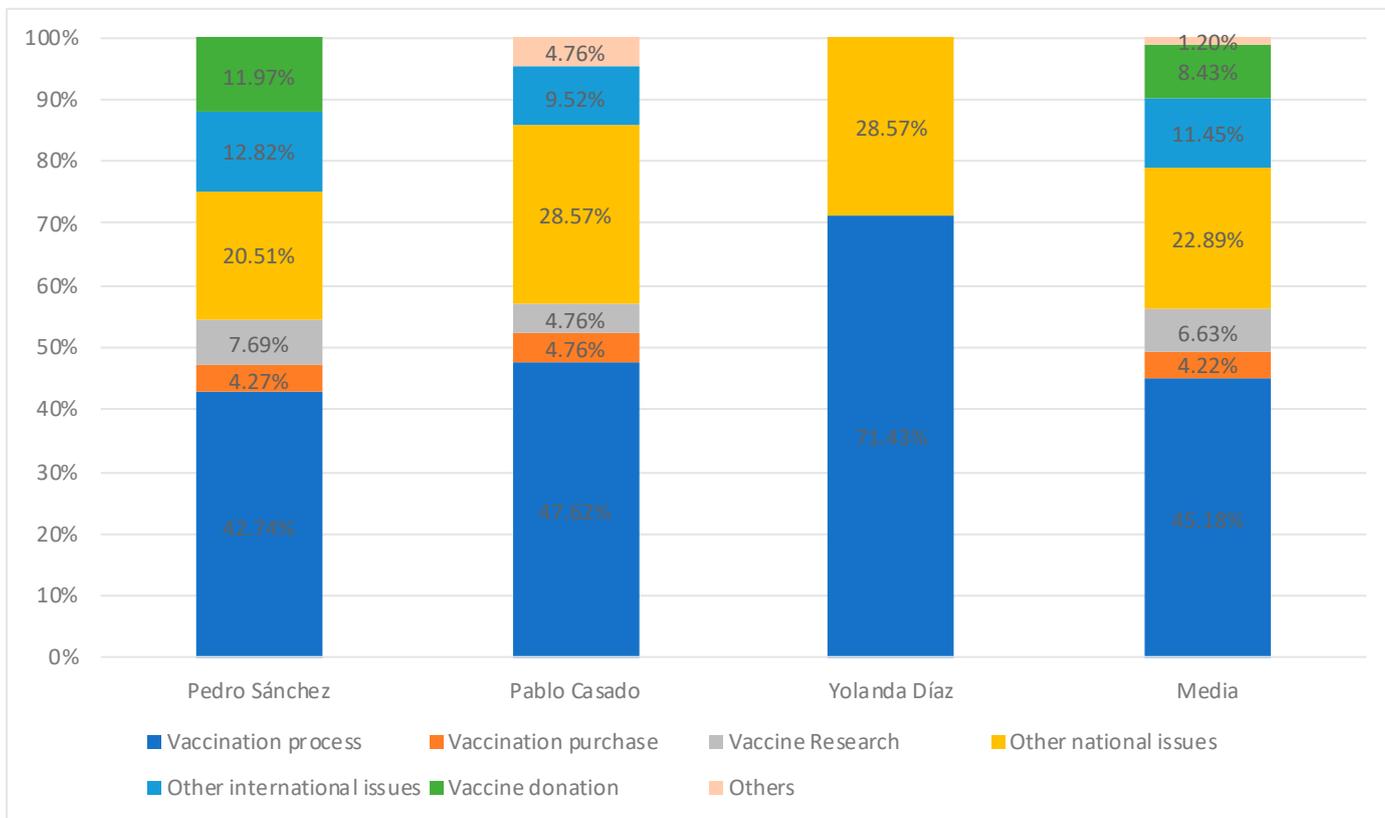


Figure 2. Thematic analysis of messages posted by Spanish leaders.

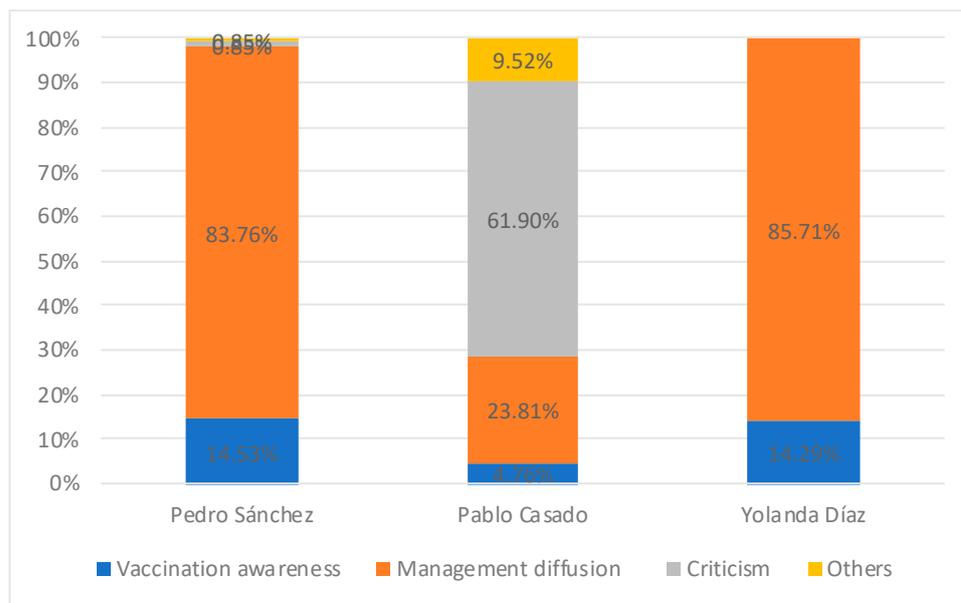
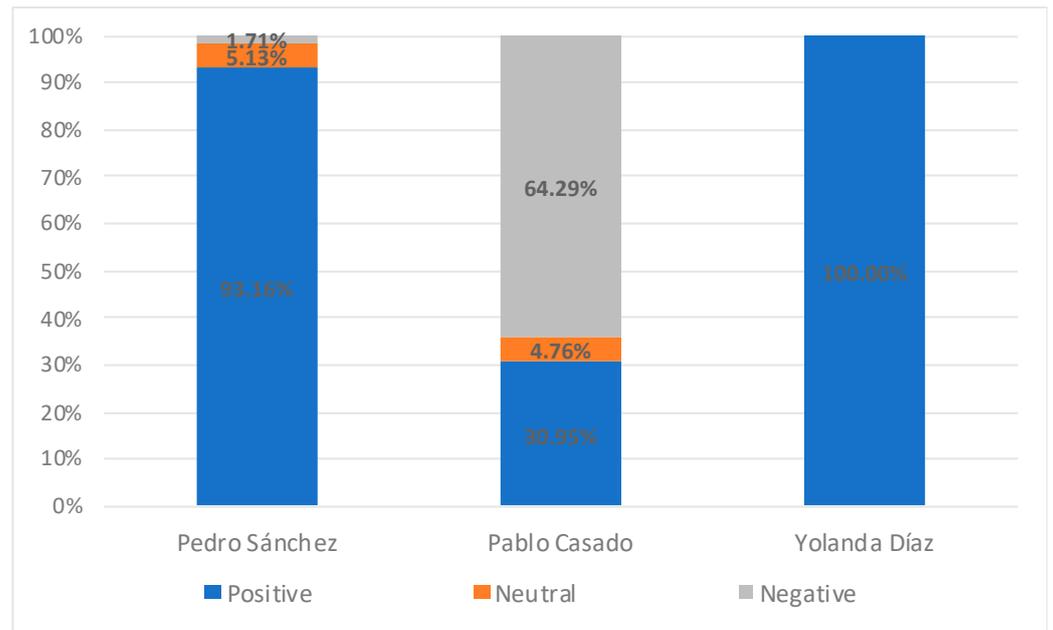


Figure 3. Strategies of Spanish leaders on Twitter.

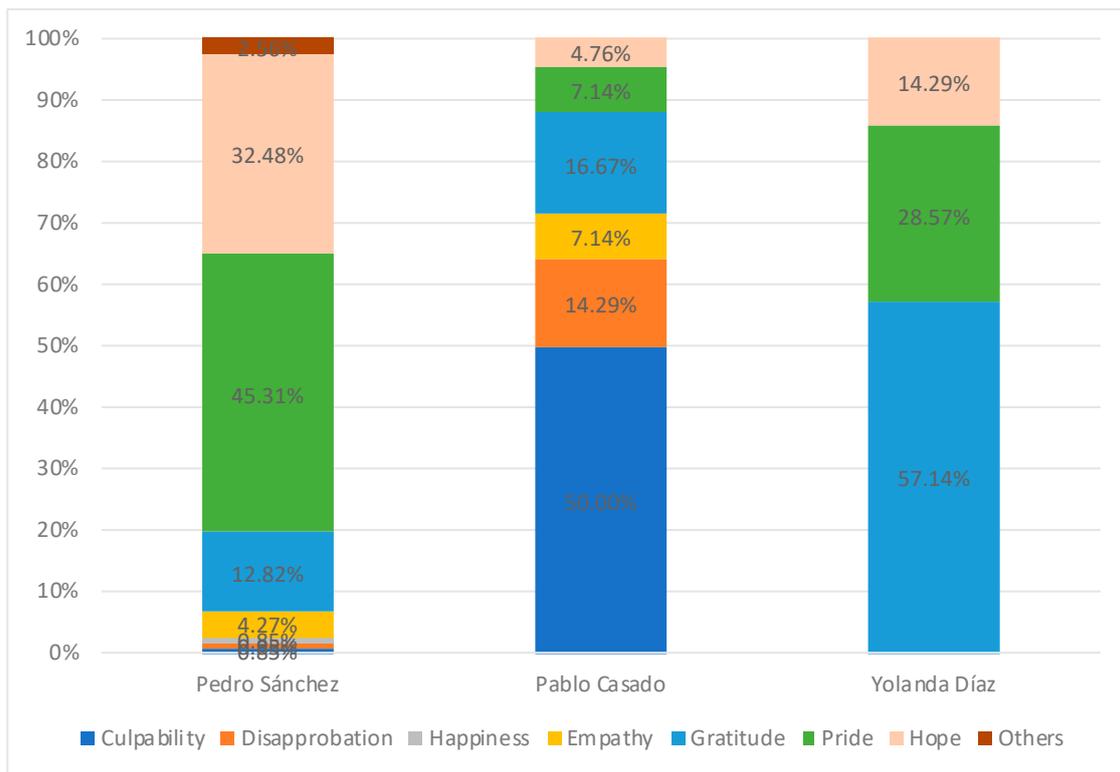
In this vein, the analysis of the tone of the messages posted regarding vaccination by Spanish political figures shows a behavior of maximum polarization. The tendency of the members of the government translated into an optimistic vision of the vaccination process,

which contrasted with the strategy of the leader of the opposition, who bet on criticism (see Figure 4). Thus, Pedro Sánchez's messages were mostly positive (93.2%) or neutral (5.1%), while there were two tweets with a negative bias (1.7%) aimed at questioning the stance of the opposition parties. Sánchez's positive communication strategy was complemented by the attitude of Vice President Yolanda Díaz, as all of her messages were positive (100%). On the other hand, the PP leader focused (64.3%) on negative messages concerning the governmental management of the inoculation process, compared with 31% positive messages and 4.8% neutral messages.



**Figure 4.** Tone of messages posted by Spanish leaders.

With the aim of delving deeper into the narrative disseminated by Spanish political leaders when addressing the COVID-19 vaccination process, the emotions in which their messages were framed were explored. Thus, the data again showed a polarization between the messages of the government and those of the opposition (see Figure 5). In this way, the socialist leader, Pedro Sánchez, mainly used messages in which he showed his pride in what has been achieved in terms of vaccination (45.3%) and his hope that this will translate into an improvement in the country's situation (32.5%), while the Vice President Díaz mainly opted to show her gratitude to health professionals (57.1%). Nevertheless, in the case of the popular leader, clearly the blame (50%) took precedence, focusing their criticism of the executive management on President Sánchez and the Minister of Health. Despite this, in their messages, emotions of gratitude (16.7%) or disapproval (14.3%) were also present.



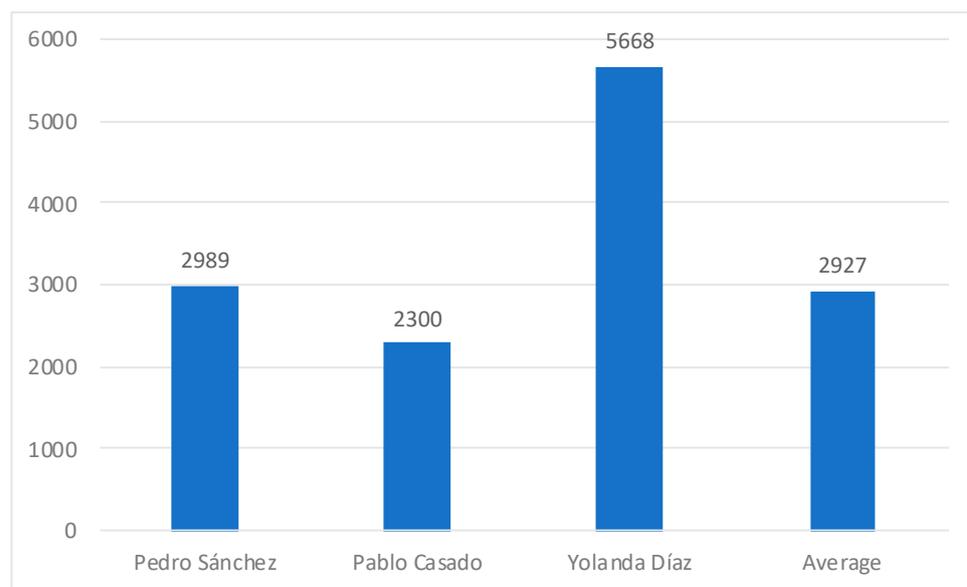
**Figure 5.** Feelings portrayed in the messages posted by Spanish leaders.

At the time of completion of this analysis, it was advisable to take into account another formal aspect of the messages emitted by Spanish political leaders. In this sense, a majority trend was observed for Pedro Sánchez (62.4%) and Pablo Casado (54.8%) to incorporate videos with their statements, while Yolanda Díaz did the same with images that illustrated her message (42.9%). The fact that the vast majority of tweets posted by Pedro Sanchez and Pablo Casado included edited videos or professional photos points to prior strategic planning by their respective teams.

### 3.2. Response of the Audiences to the Debate on Vaccination

This research was supplemented by the study of the audience response on Twitter to COVID-19 vaccination messages posted by the main national political leaders. From the analysis of retweets, likes, and responses, it was evident that political leaders had a very high capacity for virality when they referred to vaccination (2927). After analyzing each of the cases studied (see Figure 6), we observed that the few messages posted by Yolanda Díaz had a significant reach (5688), compared to the viralization of tweets from Pedro Sánchez (2989) and Pablo Casado (2300).

Furthermore, it should be noted that the study of the viralization capacity of messages, depending on the tone used, points to the fact that, in the context marked by fear of the pandemic and polarization, the audience interacted more with positive messages (3085) than with negative ones (2680), and that neutral messages clearly had a lower influence (1238). On the other hand, it is worth highlighting that users of the social network Twitter were more interested in information related to the vaccination process (3731), the purchase of vials (2914), or the research of new treatments (2884), compared with those messages related to donation to Latin American countries (1961) or international relations (1671). In relation to the strategies implemented by leaders, the enormous viralization of messages aimed at raising awareness of the need to vaccinate (5523) stands out, doubling that of those who criticized vaccination (2560) or questioned the management (2560) of the distribution of doses and the inoculation process.



**Figure 6.** Viralization capacity of messages from Spanish leaders.

#### 4. Discussion

This research adds to other previous studies that have addressed the digital conversation on Twitter of pro-vaccine and anti-vaccine communities, and, in turn, provides a vision of the strategic behavior of political leaders regarding the COVID-19 vaccination campaign (Larrondo Ureta et al. 2021; Carrasco-Polaino et al. 2021; Cuesta-Cambra et al. 2019). The fact that two of the leaders in the sample selection were members of the government, with Pedro Sánchez as President and Yolanda Díaz as Vice President, allows us to verify the identifying marks of institutional discourse, focused on promoting awareness as a demonstration of the effectiveness of public management, compared to the partisan discourse of the leader, marked by ideology, bias, and confrontation in their role as opposition. The act of investigating political behavior through the emotions of the leader is also postulated as a novel approach within the framework of COVID-19, in comparison to previous studies on electoral campaigns (Moret-Soler et al. 2022), as the use of rhetorical language becomes a communication and electoral strategy in the digital environment.

However, it should be noted that this work has some limitations. The first has to do with the methodology. In addition to the content analysis of the accounts of political leaders to assess their discourse on vaccines, it would be convenient to propose focus groups that would allow enquiry concerning citizens' opinions regarding the digital public agenda related to vaccination, including information from new actors that have been established in social networks during the pandemic and who promote conspiracy, denialism, and disinformation. Other limitations are related to the geographical criterion of the sample, which only considered the Spanish national scope, and could be extended to the Latin American scope, where institutional vaccination campaigns have been marked by a polarized discourse and by the influence of populist policies of the extreme right and extreme left. Finally, future research could focus its interest on experts, such as specialized sources that, in connivance to the media, can guarantee rigorous and contrasted information concerning vaccines, which encourages the trust of the public.

#### 5. Conclusions

This research addresses the political discourse on Twitter regarding the COVID-19 vaccination campaign through the analysis of issues (issue frame) and strategies (game frame) developed by the four main Spanish leaders during the pandemic. In a context marked by citizens' insecurity, confusion, and distrust towards institutions (Lobera Serrano and Álvarez 2021), the results showed the differences in approach and debate of the vaccine

topic between the government representatives and candidates of different political parties (RQ1). The candidate of the Socialist Party, Pedro Sánchez, was constructing an institutional narrative as President of the government, in which awareness raising and the importance of the Spanish population getting vaccinated was the mark of identity. Statistical measurement indicated that this leader dedicated one out of every ten tweets posted during the sample year to the process of distribution of vaccines and inoculation, as messages based on the rhetoric of emotion that emphasized the delivery of the Spanish government's agenda to prevent and combat the effects of the virus.

Facing this model of communication that prioritized raising awareness among citizens, polarization was consolidated as a discursive strategy of Pablo Casado, the leader of the Popular Party. In this sense, although the data confirmed that raising awareness in relation to vaccines and the vaccination process was a shared goal of President Pedro Sánchez, his Vice President Yolanda Díaz, leader of Unidas Podemos, and the PP candidate Pablo Casado, a double electoral discourse model was evident: that of awareness and efficiency of the government's management by the government representatives, and that of polarization and criticism of that management by the leader of the opposition.

In this framework, the silence of the Vox leader, Santiago Abascal, on Twitter was also noteworthy, as he did not comment on the issue, in contrast to the skeptical attitude towards vaccines that identified the policies of extreme right-wing populisms (Pérez-Curiel et al. 2022a). The fact that there was not a single tweet posted by the populist candidate in relation to vaccines distanced him, in this case, from other far-right leaders such as Donald Trump, Matteo Salvini, or Jair Bolsonaro, who generated a discourse marked by misinformation and conspiracy in relation to the pandemic. However, it is true that Abascal's silence did not help to end the hesitancy towards vaccination.

The mechanisms of action and reaction of leaders regarding vaccination and the entire process of production, distribution, inoculation, and side effects in the population described a political game with different topics and communication strategies, depending on the institutional or partisan role of the leader. The government wanted to demonstrate their ability to manage an unprecedented global health crisis, such as COVID-19, and to raise awareness among the population to get vaccinated, at a time when populist conspiracy theories (Pérez-Curiel et al. 2022b), the pre-eminence of antivaccine denialist discourse (Larrondo Ureta et al. 2021), and the spread of rumors by users themselves flooded social networks. The results showed that this weakened, rather than eliminated, the level of polarization, bias, and misinformation during the vaccination campaign (RQ2). Comparison between leaders revealed the diffusion of messages that promoted confrontation, especially in leaders representing bipartisanship. The announcement of the vaccination campaign by the socialist leader on their Twitter account emanated an institutional discourse, without ruling out the electoral brand, inherent to political communication (Gainous and Wagner 2014), which made the vaccine a key tool for not only health, but also economic recovery of the country. The government's effort to inform its citizens about active vaccination and prevention policies against the COVID-19 pandemic was accompanied by the language of emotions (Cuesta-Cambra et al. 2019), configuring a rhetorical narrative of pride for the achievements made, and of hope for the future. Institutionalization was a characteristic feature of the government's vaccination campaign and a resource to bolster the trust of citizens. However, the data showed a tendency of Pedro Sánchez, in line with other international leaders (González-Rosas et al. 2022), to prioritize the showcasing of the achievements of his management over raising awareness of vaccination.

Meanwhile, from the opposition, Pablo Casado delegitimized the vaccination campaign and, therefore, the public management, resorting to a tone of constant conflict, which promoted "blaming" the adversary as the dominant emotional trait. Despite the fact that holding the government accountable is essentially the purpose of any democratic opposition, the attitude of the conservative leader did not contribute to reducing social polarization and increasing the public confidence to overcome the health, economic and social crisis. The only common denominator between both leaders existed in expressing

support for the vaccine, in line with the opinion expressed by experts, and against the conspiratorial and negative behaviors that circulated on the networks, and identifying extreme populist ideologies. In this permanent division dynamic, a weakening of the role of other political actors, such as Unidas Podemos candidate Yolanda Díaz, was observed. It should be noted that, despite her enormous ability to go viral on Twitter, the Vice President of the government also opted to publish a small number of messages concerning vaccines and focused her attention on other issues related to her institutional management.

The non-participation of the leader of Vox in this digital debate on vaccines and the vaccination campaign could be considered an indicator of ideological bias, since silence can be considered as a strategy of hiding his attitude of rejection of the vaccine and avoiding criticism from part of the electorate against this negative position of the populist leaders. In this sense, at the end of the studied period, close to 90% of Spaniards older than 12 years had been vaccinated ([Ministry of Health 2021](#)). In addition, in relation to Vox voters themselves, it is noteworthy that, in the survey of the Spanish Center for Sociological Research ([CIS 2021](#)), the vast majority (89.1%) of far-right party voters claimed to have been vaccinated, which was slightly below the average (96.5%).

Confirmation bias ([Riva 2018](#); [Amorós 2018](#)) is also a sign of identity of the leader's strategies, prevailing the positive tone of messages of the two government representatives, and an evident sign of negativity in the tweets published by the PP candidate, who questioned the effectiveness of public policies in the health field. This cannot be overlooked, and this is reflected in the thematic and linguistic analysis of the messages posted on the network; the relevance of issues such as the purchase of vaccines and the progress of the inoculation process is an example of an electoral narrative that relegates scientific argumentation to a secondary plane. Finally, polarization can be considered a common trait of the political discourse of the candidates of the PSOE and the PP, in each case incentivizing the vaccine as a resource for defining the electoral vote. Consciousness raising as a discursive mark is part of institutional discourse, but does not manage to impose itself as a base political strategy to weaken polarization.

This research aimed to analyze the response of audiences to messages disseminated by leaders (RQ3), based on the bidirectionality criterion that defines a network such as Twitter ([Campos-Domínguez 2017](#)). From this perspective, there was a greater interaction of audiences with messages of a positive tone, compared to negative or neutral messages, which did not generate virality. The audience was also prone to comment on and spread those messages that aimed to raise awareness among citizens regarding the importance of vaccination, outnumbering those other tweets that praised the effectiveness of the government's management of the vaccination process or, in contrast, the opposition's criticism of the institutional vaccine campaign. The response of audiences to Yolanda Díaz's messages was remarkable, doubling that of Pedro Sánchez and Pablo Casado, and showing a greater interest from users in those informative messages, public gratitude, and positive tone compared to the polarization emanating from the two party leaders.

In line with the tendency of citizens to provide a greater response to emotional, empathetic, and personal messages ([Castillo-Esparcia et al. 2020b](#)), this research confirmed that political representatives were trying to lead the vaccination debate, intensifying their emotional language and, consequently, contributing to polarizing society ([Rivera Otero et al. 2021](#); [Robles et al. 2022](#)). All of this does not contribute to developing the necessary communication that helps to create a soothing effect in the face of a health, economic, and social crisis ([Xifra 2020](#)). In conclusion, this research represents a pioneering and original contribution not only with regard to the debate on COVID-19 vaccination in social networks, but also with regard to the polarizing capacity of political leaders in Twitter's digital public debate. Furthermore, the methodological proposal could be used for future research in the field of political communication.

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## References

- Ali, Muhammad-Yousuf, and Peter Gatiti. 2020. The COVID-19 (coronavirus) pandemic: Reflections on the roles of librarians and information professionals. *Health Information & Libraries Journal* 37: 158–62. [CrossRef]
- Alonso-Muñoz, Laura, Silvia Marcos-García, and Andreu Casero-Ripollés. 2017. Political leaders in (inter) action. Twitter as a strategic communication tool in electoral campaigns. *Tripos* 39: 71–90.
- Amado, Adriana. 2016. *Política Pop. De líderes Populistas a Telepresidentes*. Barcelona: Ariel.
- Amat, Francesc, Andreu Arenas, Albert Falcó-Gimeno, and Jordi Muñoz. 2020. Pandemics meet democracy. Experimental evidence from the COVID-19 crisis in Spain. *SocArXiv*, April 6. [CrossRef]
- Amorós, Marc. 2018. *Fake News. La Verdad de las Noticias Falsas*. Barcelona: Plataforma Actual.
- Baker, Paul. 2006. *Using Corpora in Discourse Analysis*. London: A&C Black.
- Bello-Orgaz, Gema, Julio Hernandez-Castro, and David Camacho. 2017. Detecting discussion communities on vaccination in Twitter. *Future Generation Computer Systems* 66: 125–36. [CrossRef]
- Betsch, Cornelia, Phillip Schmid, Dorothee Heinemeier, Lars Korn, Cindy Holtmann, and Robert Böhm. 2018. Beyond confidence: Development of a measure assessing the 5C psychological antecedents of vaccination. *PLoS ONE* 13: e0208601. [CrossRef] [PubMed]
- Bounegru, Liliana, Jonathan Gray, Tommaso Venturini, and Michele Mauri. 2017. *Field Guide To Fake News*. Amsterdam: Public Data Lab y First Draf.
- Brennen, J. Scott, Felix M. Simon, Phil Howard, and Rasmus Klein Nielsen. 2020. *Types, Sources, and Claims of COVID-19 Misinformation*. Reuters Institute for the Study of Journalism. Available online: [http://www.primaonline.it/wp-content/uploads/2020/04/COVID-19\\_reuters.pdf](http://www.primaonline.it/wp-content/uploads/2020/04/COVID-19_reuters.pdf) (accessed on 28 January 2023).
- Broniatowski, David, Amelia M. Jamison, SiHua Qi, Lulwah AlKulaib, Tao Chen, Adrian Benton, and Sandra C. Quinn. 2018. Weaponized health communication: Twitter bots and Russian trolls amplify the vaccine debate. *American Journal of Public Health* 108: 1378–84. [CrossRef]
- Burnap, Pete, Rachel Gibson, Luke Sloan, Rosalynd Southern, and Matthew Williams. 2016. 140 characters to victory? Using Twitter to predict the UK 2015 general election. *Electoral Studies* 41: 230–33. [CrossRef]
- Campos-Domínguez, Eva María. 2017. Twitter y la comunicación política. *El Profesional de la Información* 26: 785. [CrossRef]
- Cardenal, Ana, Carlos Aguilar-Paredes, Camilo Cristancho, and Silvia Majó-Vázquez. 2019. Echo-chambers in online news consumption: Evidence from survey and navigation data in Spain. *European Journal of Communication* 34: 360–76. [CrossRef]
- Carrasco-Polaino, Rafael, Ernesto Villar-Cirujano, and Laura Tejedor-Fuentes. 2018. Twitter como herramienta de comunicación política en el contexto del referéndum independentista catalán: Asociaciones ciudadanas frente a instituciones públicas. *Icono* 14 16: 64–85. [CrossRef]
- Carrasco-Polaino, Rafael, Miguel Ángel Martín-Cárdaba, and Ernesto Villar-Cirujano. 2021. Citizen participation in Twitter: Anti-vaccine controversies in times of COVID-19. *Comunicar* 69: 21–31. [CrossRef]
- Cartwright, Edward, Anna Stepanova, and Lian Xue. 2019. Impulse balance and framing effects in threshold public good games. *Journal of Public Economic Theory* 21: 903–22. [CrossRef]
- Casero-Ripollés, Andreu. 2020. Impact of COVID-19 on the media system. Communicative and democratic consequences of news consumption during the outbreak. *El Profesional de la Información* 29: e290223. [CrossRef]
- Castillo-Esparcia, Antonio, Ana-Belén Fernández-Souto, and Iván Puentes-Rivera. 2020a. Comunicación política y COVID-19. Estrategias del Gobierno de España. *Profesional De La información* 29: e290419. [CrossRef]
- Castillo-Esparcia, Antonio, Ángeles Moreno, and Paul Capriotti-Peri. 2020b. Relaciones públicas y comunicación institucional ante la crisis del COVID-19. *Revista Internacional de Relaciones Públicas* 10: 1–6. [CrossRef]
- Ceron, Wilson, Gruszynski Sanseverino, de-Lima-Santos Gabriela, Matías Felipe, and Marcos Quiles. 2021. COVID-19 fake news diffusion across Latin America. *Social Network Analysis and Mining* 11: 1–20. [CrossRef]

- Chen, Emily, Kristina Lerman, and Emilio Ferrara. 2020. Tracking Social Media Discourse About the COVID-19 Pandemic: Development of a Public Coronavirus Twitter Data Set. *JMIR Public Health and Surveillance* 6: e19273. [CrossRef]
- Cheng, Tiffany Yi-Mei, Lisa Liu, and Benjamin K. Woo. 2018. Analyzing Twitter as a platform for Alzheimer-related dementia awareness: Thematic analyses of tweets. *JMIR Aging* 1: e11542. [CrossRef] [PubMed]
- CIS. Sociological Research Center (Spain). 2021. *Barometer for December 2021*. Madrid: Ministry of the Presidency, Relations with the Courts and Democratic Memory.
- Cleary, Michelle, Jan Horsfall, and Mark Hayter. 2014. Data collection and sampling in qualitative research: Does size matter? *Journal of Advanced Nursing* 70: 473–75. [CrossRef]
- Colomina, Carme. 2021. Desconfianza en la vacuna o desconfianza en el sistema. In *Geopolítica de la Salud: Vacunas, Gobernanza y Cooperación*. Barcelona: CIDOB Report.
- Costa-Sánchez, Carmen, and Xosé López-García. 2020. Comunicación y crisis del coronavirus en España. Primeras lecciones. *El Profesional de la Información* 29: e290304. [CrossRef]
- Cuathémoc Mayorga, Alberto. 2021. Comunicación responsable durante la pandemia. In *COVID-19 y Bioética*. Ciudad de México: UNAM, pp. 457–77.
- Cuesta-Cambra, Ubaldo, Luz Martínez-Martínez, and Jose Ignacio Niño-González. 2019. An analysis of pro-vaccine and anti-vaccine information on social networks and the internet: Visual and emotional patterns. *Profesional de la Información* 28. [CrossRef]
- D'Heer, Evelien, and Pieter Verdegem. 2015. What social media data mean for audience studies: A multidimensional investigation of Twitter use during a current affairs TV programme. *Information, Communication & Society* 18: 221–34. [CrossRef]
- Dredze, Mark, David Broniatowski, Michael C. Smith, and Karen Hilyard. 2016. Understanding Vaccine Refusal: Why We Need Social Media Now. *American Journal of Preventive Medicine* 50: 550–52. [CrossRef] [PubMed]
- Fernández-Torres, María Jesús, Ana Almansa-Martínez, and Rocío Chamizo-Sánchez. 2021. Infodemic and Fake News in Spain during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health* 18: 1781. [CrossRef]
- Flowerdew, John, and John Richardson. 2017. *The Routledge Handbook of Critical Discourse Studies*. London: Routledge.
- Friedrich, M. J. 2019. WHO's Top Health Threats for 2019. *JAMA* 11: 321. [CrossRef] [PubMed]
- Gainous, Jason, and Kevin Wagner. 2014. *Tweeting to Power. The Social Media Revolution in American Politics*. Oxford: Oxford University Press.
- Getman, Rebekah, Mohamed Helmi, Hal Roberts, Alfa Yansane, David Cutler, and Brittany Seymour. 2018. Vaccine hesitancy and online information: The influence of digital networks. *Health Education Behaviour* 45: 599–606. [CrossRef] [PubMed]
- Ghenai, Amira, and Yelena Mejova. 2018. Fake cures: User-centric modeling of health misinformation in social media. *Proceedings of the ACM on Human-Computer Interaction* 2: 1–20. [CrossRef]
- González-Rosas, Erika Lourdes, Enrique Arias-Romo, and Rafael Campos-Canchola. 2022. Comunicación y liderazgo político de López Obrador con sus seguidores a través de Twitter durante el COVID-19. *Universitas-XXI Revista de Ciencias Sociales y Humanas* 37: 43–74. [CrossRef]
- Graells-Garrido, Eduardo, Ricardo Baeza-Yates, and Mounia Lalmas. 2019. How representative is an abortion debate on Twitter. Paper presented at the 10th ACM Conference on Web Science—WebSci '19, Boston, MA, USA, June 30–July 3; pp. 133–34.
- Hornsey, Matthew, Emily Harris, and Kelly Fielding. 2018. The psychological roots of anti-vaccination attitudes: A 24-nation investigation. *Health Psychology* 37: 307–15. [CrossRef]
- Howard, Philip N., Samuel Woolley, and Ryan Calo. 2018. Algorithms, bots, and political communication in the US 2016 election: The challenge of automated political communication for election law and administration. *Journal of Information Technology and Politics* 15: 81–93. [CrossRef]
- Jolley, Daniel, and Karen Douglas. 2014. The effects of anti-vaccine conspiracy theories on vaccination intentions. *PLoS ONE* 9: e89177. [CrossRef]
- Kang, Gloria J., Sinclair R. Ewing-Nelson, Lauren Mackey, James T. Schlitt, Achla Marathe, Kaja Abbas, and Samarth Swarup. 2017. Semantic network analysis of vaccine sentiment in online social media. *Vaccine* 35: 3621–38. [CrossRef]
- Kouzy, Ramez, Joseph Abi Jaoude, Afif Kraitem, Molly B. E. Alam, Basil Karam, Elio Adib, Jarka Zarka, Cindy Traboulsi, Elie Akl, and Khalil Baddour. 2020. Coronavirus goes viral: Quantifying the COVID-19 misinformation epidemic on Twitter. *Cureus* 3: 12. [CrossRef] [PubMed]
- Krippendorff, Klaus. 2012. *Content Analysis: An Introduction to Its Methodology*. London: Sage Publications.
- Larrondo Ureta, Ainara, Simón Peña Fernández, and Jordi Morales i Gras. 2021. Desinformación, vacunas y COVID-19. Análisis de la infodemia y la conversación digital en Twitter. *Revista Latina de Comunicación Social* 79: 1–18.
- Larson, Heidi J. 2020. Blocking information on COVID-19 can fuel the spread of misinformation. *Nature* 580: 306. [CrossRef] [PubMed]
- Lee, Kenneth, Kreshnik Hoti, Jefery David Hughes, and Lynne Emmerton. 2014. Dr Google and the consumer: A qualitative study exploring the navigational needs and online health information-seeking behaviors of consumers with chronic health conditions. *Journal of Medical Internet Research* 16: e262. [CrossRef]
- Lobera Serrano, Josep, and Pablo Cabrera Álvarez. 2021. *Evolución de la Percepción Social de Aspectos Científicos de la COVID-19 (Julio 2020–Enero 2021)*. Madrid: FECYT.
- López Meri, Amparo. 2016. Twitter-retórica para captar votos en campaña electoral. El caso de las elecciones de Cataluña de 2015. *Comunicación y Hombre* 12: 97–118.

- López-García, Guillermo. 2020. Vigilar y castigar: El papel de militares, policías y guardias civiles en la comunicación de la crisis del COVID-19 en España. *El Profesional de la Información* 29: e290311. [\[CrossRef\]](#)
- Lorini, Chiara, Francesca Santomauro, Martina Donzellini, Leonardo Capecci, Angela Bechini, Sara Boccalini, Paolo Bonanni, and Guglielmo Bonaccorsi. 2018. Health literacy and vaccination: A systematic review. *Human Vaccines Immunotherapeutics* 14: 478–88. [\[CrossRef\]](#)
- Manfredi-Sánchez, Juan-Luis, Adriana Amado-Suárez, and Silvio Waisbord. 2021. Presidential Twitter in the face of COVID-19: Between populism and pop politics. *Comunicar* 66: 83–94. [\[CrossRef\]](#)
- Martínez-Costa, María del Pilar, Fernando López-Pan, Nataly Buslón, and Ramón Salaverría. 2022. Nobody-fools-me perception: Influence of Age and Education on Overconfidence About Spotting Disinformation. *Journalism Practice*, October 27. [\[CrossRef\]](#)
- Más-Manchón, Lluís, and Frederic Guerrero-Solé. 2019. The use of hashtags as a political branding strategy. *Revista Internacional de Relaciones Públicas* 9: 5–24. [\[CrossRef\]](#)
- Milani, Elena, Emma Weitkamp, and Peter Webb. 2020. The visual vaccine debate on Twitter: A social network analysis. *Media and Communication* 8: 364–75. [\[CrossRef\]](#)
- Ministry of Health. 2021. *Comprehensive Management of COVID-19 Vaccination: Activity Report 12/28/2021*; Madrid: Government of Spain.
- Moret-Soler, Diana, Laura Alonso-Muñoz, and Andreu Casero-Ripollés. 2022. La negatividad digital como estrategia de campaña en las elecciones de la Comunidad de Madrid de 2021 en Twitter. *Prisma Social* 39: 48–73.
- Negredo, Samuel, Avelino Amoedo, Alfonso Vara-Miguel, Elsa Moreno, and Jurg Kaufmann. 2020. *Digital News Report España 2020*. Pamplona: Servicio de Publicaciones de la Universidad de Navarra. [\[CrossRef\]](#)
- Pérez-Curiel, Concha, and Andreu Casero-Ripollés. 2022. La lucha contra la desinformación en la sociedad post-pandemia: Un reto para el periodismo y más allá. In *El Problema de la Verdad. Retos y Riesgos en la Comunicación*. Salamanca: Comunicación Social. Ediciones y Publicaciones, pp. 85–100.
- Pérez-Curiel, Concha, and Mar García-Gordillo. 2020. Del debate electoral en TV al ciberdebate en Twitter. Encuadres de influencia en las elecciones generales en España (28A). *El profesional de la Información* 29: e290405. [\[CrossRef\]](#)
- Pérez-Curiel, Concha, and Pilar Limón-Naharro. 2019. Influencers de la Política. Estudio de la marca personal de Donald Trump en Twitter y efectos en medios y usuarios. *Communication & Society* 32: 57–76. [\[CrossRef\]](#)
- Pérez-Curiel, Concha, José Rúas-Araujo, and Rubén Rivas-de Roca. 2022a. When politicians meet experts: Disinformation on Twitter about COVID-19 vaccination. *Media and Communication* 10: 157–68. [\[CrossRef\]](#)
- Pérez-Curiel, Concha, Ricardo Domínguez-García, and Ana-María Velasco-Molpeceres. 2021. High-quality journalism in the face of Donald Trump's theory of electoral fraud: The information strategy of the media in the 2020 US presidential election. *El Profesional de la Información* 30: e300619. [\[CrossRef\]](#)
- Pérez-Curiel, Concha, Rubén Rivas-de-Roca, and Ricardo Domínguez-García. 2022b. Facing Conspiracies: Biden's Counter-Speech to Trumpist Messages in the Framework of the 2020 US Elections. *Societies* 12: 134. [\[CrossRef\]](#)
- Pérez-Dasilva, Jesús, Koldobika Meso-Ayerdi, and Terese Mendiguren-Galdospín. 2020. Fake news y coronavirus: Detección de los principales actores y tendencias a través del análisis de las conversaciones en Twitter. *El profesional de la Información* 29: e290308. [\[CrossRef\]](#)
- Ramonfaur, Diego, David Eugenio Hinojosa-González, Gloria Paulina Rodríguez-Gomez, David Alejandro Iruegas-Nuñez, and Eduardo Flores-Villalba. 2021. COVID-19 vaccine hesitancy and acceptance in Mexico: A web-based nationwide survey. *Revista Panamericana de Salud Pública* 45: 1–9. [\[CrossRef\]](#)
- Riva, Giuseppe. 2018. *Fake News*. Bolonia: Il Mulino.
- Rivera Otero, José Manuel, Nieves Lagares Diez, Erika Jaráiz Gulías, and Paulo Carlos López López. 2021. Emociones y engagement en los mensajes digitales de los candidatos a las elecciones generales de 2019. *Cultura, Lenguaje Y Representación* 26: 229–45. [\[CrossRef\]](#)
- Robles, José-Manuel, Juan Antonio Guevara, Belén Casas-Mas, and Daniel Gómez. 2022. When negativity is the fuel. Bots and Political Polarization in the COVID-19 debate. [Cuando la negatividad es el combustible. Bots y polarización política en el debate sobre el COVID-19]. *Comunicar* 71: 63–75. [\[CrossRef\]](#)
- Rosenberg, Hans, Shahbaz Syed, and Salim Rezaie. 2020. The Twitter pandemic: The critical role of Twitter in the dissemination of medical information and misinformation during the COVID-19 pandemic. *Canadian Journal of Emergency Medicine* 22: 418–21. [\[CrossRef\]](#)
- Salaverría, Ramón, Nataly Buslón, Fernando López-Pan, Bienvenido León, Ignacio López-Goñi, and María-Carmen Erviti. 2020. Desinformación en tiempos de pandemia: Tipología de los bulos sobre la COVID-19. *El Profesional de la Información* 29: e290315. [\[CrossRef\]](#)
- Shapiro, Gilla K., Anne Holding, Samara Perez, Rhonda Amsel, and Zeev Rosberger. 2016. Validation of the vaccine conspiracy beliefs scale. *Papillomavirus Research* 2: 167–72. [\[CrossRef\]](#) [\[PubMed\]](#)
- Silverman, David. 2016. *Qualitative Research*. London: SAGE.
- Thelwall, Mike, Kayvan Kousha, and Sasheeda Thelwall. 2021. COVID-19 vaccine hesitancy on English-language Twitter. *El Profesional de la Información* 30: 1–13. [\[CrossRef\]](#)
- Tomeny, Theodore, Christopher Vargo, and Sherine El-Touky. 2017. Geographic and demographic correlates of autism-related anti-vaccine beliefs on Twitter, 2009–2015. *Social Science & Medicine* 191: 168–75. [\[CrossRef\]](#)
- Van Dijk, Teun. 2015. Critical discourse studies. A sociocognitive Approach. *Methods of Critical Discourse Studies* 3: 63–74.

- Waisbord, Silvio. 2018. The elective affinity between post-truth communication and populist politics. *Communication Research and Practice* 4: 17–34. [CrossRef]
- Wang, Tao, Markus Brede, Antonella Ianni, and Emmanouil Mentzakis. 2017. Detecting and characterizing eating-disorder communities on social media. Paper presented at the Tenth ACM International Conference on Web Search and Data Mining, Melbourne, VIC, Australia, February 11–15; pp. 91–100. [CrossRef]
- Wardle, Claire. 2017. *Fake News. It's Complicated*. First Draft. Available online: <https://firstdraftnews.org:443/latest/fake-news-complicated/> (accessed on 28 January 2023).
- Westphalen, Marie-Helene, and Thierry Libaert. 2008. *La communication Externe de L'entreprise [External Communication of the Company]*. Paris: Dunod.
- Wilson, Kumanan, Katherine Atkinson, and Shelley Deeks. 2014. Opportunities for utilizing new technologies to increase vaccine confidence. *Expert Review of Vaccines* 13: 969–77. [CrossRef]
- Xifra, Jordi. 2020. Comunicación corporativa, relaciones públicas y gestión del riesgo reputacional en tiempos del COVID-19. *El profesional de la información* 29: e290220. [CrossRef]
- Yeste, Elena, and Pere Franch. 2018. Trump vs. los medios. Tratamiento de la prensa desde la cuenta de Twitter del presidente de EUA. *El Profesional de la Información* 27: 975–83. [CrossRef]

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