


Article

Official Information on Twitter during the Pandemic in Spain

Soledad García-García ¹ and Raquel Rodríguez-Díaz ^{2,*}

¹ Social and Legal Sciences, Escuela Internacional de Doctorado (EID), Universidad Rey Juan Carlos de Madrid, 28933 Madrid, Spain

² Dpto de Periodismo y Comunicación Corporativa, Universidad Rey Juan Carlos de Madrid, 28942 Fuenlabrada, Spain

* Correspondence: raquel.rodriguez@urjc.es

Abstract: This article shows the use of Twitter that the main official spokespersons of the Spanish government made during the first weeks of the pandemic, with the aim of analyzing how government health campaigns were managed during the exceptional period of the state of alarm to deal with the COVID-19 pandemic and whether the instructions in terms of institutional management of communication to combat the infodemic set by the World Health Organization (WHO) were followed. This research considers the diffusion of official information in different phases of the first three months of the government's action (102 days) from the outbreak of COVID-19 in Spain (March 2020) and how it developed its approach to crisis communication using the Twitter accounts of the President of the Spanish government (@sanchezcastejon), front-line leaders and the Ministry of Health (@sanidadgob), the main public institution responsible for health crisis management with the hashtags #EsteVirusLoParamosUnidos and #COVID-19. The results of a sample of 750 tweets reveal how the official sources used a model of online communication with a particular emphasis on informative and motivational tweets from leaders aimed at audiences (media and the general public). At the same time, there is also an instructive function about the pandemic towards audiences (general public and companies), with the Ministry and health authorities playing a key, proactive role in an attempt to achieve informative transparency to mitigate the pandemic and infodemic.

Keywords: Twitter; COVID-19; pandemic; infodemic; crisis communication; political communication; social media



Citation: García-García, S.; Rodríguez-Díaz, R. Official Information on Twitter during the Pandemic in Spain. *Societies* **2023**, *13*, 91. <https://doi.org/10.3390/soc13040091>

Academic Editors: Paulo Carlos López-López, Daniel Barredo-Ibáñez and Erika Jaráz Gulías

Received: 30 January 2023

Revised: 24 March 2023

Accepted: 29 March 2023

Published: 2 April 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

The use of social networks, in general, and Twitter, in particular, goes beyond the idea of a mere network to link the press and the audience, or politicians and citizens. Twitter was set up as a space where users can express their opinions, ideas and feelings about public issues of global importance [1–3]. Any citizen using networks can access the work of politicians and communicate criticism, suggestions or doubts [4–6]—undoubtedly, that leads to greater transparency [7]. At the same time, they can give an opinion about the news stories that the media prioritize and question their approach—that facilitates freedom of expression [8,9].

Conventional communication processes have been joined by digital ones with the number of social networks and followers multiplying [10]. At the same time, politicians have introduced networks into their communication strategy as an element of transparency [11,12], where citizens can reply—with the risk that that entails. In that sense, political communication adds social networks to any action taken by the party. New parties have been created and are reaping great electoral results thanks to their use of social media [13,14]. Several studies [15] show the strategies of Trump and Johnson on Twitter during the pandemic, revealing that that platform was, and is, a reference in non-substantiated communication despite the fact that it may lead to an increase in misinformation. That was the conclusion

of those studies, which stated that the populist discourse of leaders on Twitter regarding COVID-19 generated disinformation.

Twitter is a network that is particularly popular in the political sphere given its impact on users and also how it has become part of the agenda management of the media [16,17]. Similarly, it has become a very useful tool for managing institutional communication, particularly during the COVID-19 pandemic [18–21]. Twitter, amongst other things, is now a channel of information of governments sharing and consuming relevant information in real time. Other authors [22,23] indicate that this network makes it possible to apply an online, institutional communication model with a public relations strategy based on transparency and a constant trickle of information.

The goal of this piece of work is to show how the Spanish government managed the public health campaigns during the early phases of the COVID-19 pandemic in 2020, based on the messages published on the institutional Twitter accounts that the socialist government of Pedro Sánchez used for that purpose in Spain.

1.1. Twitter, Pandemic and Infodemic

From another point of view, Twitter plays host to a three-way game in which politicians, media and citizens communicate their messages directly to the general public [24,25]. This scenario of interdependence was all the more evident during the pandemic when social networks provided content for the media [26–28], being considered by journalism and consultants as an entry point for the measures taken by those responsible for managing the crisis and the news broadcast by traditional media regarding the pandemic [29,30].

Before the COVID-19 pandemic, there were precedents for the use of Twitter as a platform for communication during other health crises, for example, the bird flu in 2009 and Ebola in 2014 [31]. Similarly, other concepts linked to online health care, telemedicine [32] or the relation between pharmaceutical laboratories and the media itself [33] are evidence of the usefulness of different media strategies in the area of health, both from the traditional and the digital perspectives.

Focusing on the pandemic caused by the SARS-CoV-2 coronavirus, some studies conclude that the use of Twitter for informing the public by the leaders of the G7 was a predominant feature, coupled with its use for strengthening public morale [23,34]. Other studies [35] point out that 65% of the leaders of United Nations countries have posted tweets about the pandemic at some point, at the same time increasing their number of followers.

In moments of crisis, leaders not only bring social networks into their political communication strategies, but they also increase the number of messages that they post on them, being fully aware of the importance of how they influence the general public and the electorate [36,37]. The COVID-19 pandemic was one of those moments when we fought to combat the virus and also infodemic, i.e., the need for, and excess of, information, with a proliferation of fake news [38,39], where social media in general, and Twitter in particular, were a receptive scenario for it [40,41]. Some studies hold that Twitter contributed in a different way by favoring disinformation at the same time as it published accurate health information [20,42]. For that reason, other authors [43,44] claim that the benefits of this network at an institutional level depend on it being managed correctly to counteract disinformation, since its ability to connect institutions (both public and private) with individuals in a swift, direct and bidirectional way is obvious.

Despite the fact that the COVID-19 pandemic is an example of crisis communication from an institutional standpoint, some authors [45] warn that it is an unprecedented situation that breaks the models of crisis communication management in which social media hold a key function, incorporating transparency and the publishing of reliable information as opposed to information regarding the virus that has not been corroborated or is false [46].

In one of its reports [47], the WHO stated that communication was fundamental for public health systems when it comes to providing the population with information, since a lack of it meant a loss of confidence and reputation, a negative economic impact and an

increase in deaths. The organization expressed its concern about the excess of non-verified information about COVID-19 on the Internet and social networks, calling this phenomenon an “infodemic” and warned that it should be fought in the same way as pandemics. In that sense, it appealed to different political leaders to carry out an institutional management of communication that included answers and guidelines to follow in the case of a health emergency. These were to include the following recommendations:

R1. Identifying spokespersons and involving the general public in cutting edge decision-making with clear arguments [48].

R2. The publishing of coherent messages in all sectors; sharing information regularly (every day at the same time).

R3. Using stories, photos and videos to illustrate key messages.

R4. Guiding the population to where they can obtain trustworthy information.

R5. Providing transparent communication via the channels that are most used by the general public (traditional media and social networks) [49].

Citizens’ need for information and the overwhelming amount of information—both corroborated and uncorroborated—have been the subject of many pieces of research [50–52]. Despite that, the COVID-19 pandemic has brought about a social infodemic with a high percentage of disinformation in which it was difficult for the general public to find reliable information. There are pieces of research that analyze, among other issues, the credibility and perception of the COVID-19 vaccinations [53,54], the move to online training and education during the pandemic [55–57], the use of masks [58] or even churches dealing with COVID-19 [59] from different perspectives.

The joint existence of true and false information makes it difficult to find reliable sources and recommendations [19,47]. At the same time, technology has allowed Twitter to become the most used social media platform by international institutions and governments as part of their digital communication strategies [60–62].

1.2. Objectives and Hypotheses

The main objective of this work is to explore how political leaders and public institutions were using Twitter in response to COVID-19, establishing Twitter as the official source of direct information, and to observe whether or not the WHO recommendations to combat the infodemic were followed.

Bearing in mind these main elements, the specific aims are:

OE1: To observe how regularly information was shared on Twitter, measuring periodicity, number of tweets and times, to consider if there was a communication strategy over the course of the time framework.

OE2: To identify the volume of interactions for the messages in terms of the number of “comments”, “likes” and “retweets” in order to determine the rates, highlighting the rate of “engagement”.

OE3: To classify and determine the type of format of content (images, graphs, gifs, links and videos), taking into account the number of views of the videos.

OE4: To determine what the main thematic content posted on Twitter is.

In the research design, the following hypotheses were the starting point:

Hypothesis 1 (H1). *The communicative activity of the account of President Pedro Sánchez and the Spanish Health Ministry in the management of the crisis became very active by means of Twitter. The continual presence of information from these official sources became a strategy for controlling official, ratified information for the general public, companies and the media.*

Hypothesis 2 (H2). *The communication strategy of the Spanish government revealed a differentiated split between informative and motivational content, which was more closely linked to the president’s Twitter account (@sanchezcastejon) as opposed to instructions and/or educational content, which featured more in the Health Ministry’s account (@sanidadgob).*

2. Materials and Methods

Irrespective of how Twitter is used, or by whom, there is no doubting that the content created and shared by Twitter users—be they public or private—leaves a permanent digital footprint and, as such, one which may be recovered for social research [63]. The analysis of data on this network has contributed to many studies of diverse topics: electoral campaign and political debate, information and disinformation, opinion trends and opinion leaders in political conversation. Consequently, it has given rise to studies that shed light in scenarios of crisis, among other issues of importance [64–68].

In this context, the advanced Twitter search¹ used to select tweets were selected based on a filter of two governmental hashtags with a sample of the messages posted on Twitter during the 102-day study period. The result was 750 tweets, of which 133 came from the president's account, @sanchezcastejon, and 617 from the Ministry of Health account, @sanidadgob. The choice of sample was carried out analyzing the content of the two main hashtags that accounted for the information regarding the virus: #COVID-19 and #EsteVirusLoParamosUnidos in the period from 12 March 2020 to 21 June 2020, which corresponds to the state of alarm and represents the time of analysis of this research. One of the main interests of the study is the communication strategy deployed as a first reaction to a state of alarm, where mobility is restricted and the population is forced to remain confined in a quarantine that lasted more than 3 months—an unprecedented, exceptional state.

On 11 February 2020, the WHO named the SARS-CoV-2 coronavirus COVID-19 (coronavirus disease), and the hashtag #COVID-19 quickly appeared and spread through social media, to the point of being the most mentioned hashtag in 2020 on Twitter with more than 400 million uses, by unique authors, worldwide.²

The hashtag #EsteVirusLoParamosUnidos is the slogan of the institutional campaign set up by the Spanish government on 15 March 2020. Hashtags on Twitter contribute to the creation of ad hoc publics [69] about specific topics and issues, and they make it possible to debate breaking news stories and other events of social importance. The president's press office, aware that communication "is mightier than action" [70], sought a slogan that pervaded the whole of the motivational discourse of the crisis communication. On the 13th of March, at a brief press conference, the President of the Government revealed that a state of alarm would be decreed the following day and finished his speech with the phrase: "together, we will stop this virus". The following day it appeared as a hashtag on his twitter account, and on the 15th of March, as was stated above, it became part of a grand campaign launched on all traditional media (written press, radio and television) and also online with the hashtag: #EsteVirusLoParamosUnidos ("Together we will stop this virus").

With the extracted sample, content analysis was carried out [71–74] in which variables and categories were adjusted to the subjects of study set out, which allowed us to know how communication was conducted from the main official sources and the public spokespersons in the aforementioned social network: the President of the Spanish Government and the Spanish Ministry of Health. The accounts chosen were @sanchezcastejon, President of the Spanish Government and spokesperson of the highest degree of governmental communication, and @sanidadgob, which belongs to the Spanish Ministry of Health, led by the Minister, Salvador Illa. The Ministry of Health was the body of maximum authority of the four that had been named by the government as appropriate Ministries (the others being: Home Office, Ministry of Defence and Ministry of Transport, Mobility and Urban Agenda) to manage the health crisis of the pandemic caused by the SARS-CoV-2 coronavirus.

Once the data had been gathered, and with a view to building the code book correctly, a pre-test was created, proportionally made up of 25% of the sample and taking into account the following phases, as observed in the government's communicative strategy:

Phase 1 (F1) State of alarm and lockdown: 12 March 2020 to 18 April 2020 when the goal was to flatten the curve.

Phase 2 (F2) Scaling down: 19 April 2020 to 16 May 2020 when the goal was for the number of positives to exceed the number of hospital admissions.

Phase3 (F3) Recovery and re-building: 17 May 2020 to 21 June 2020 when the aim is for the number of cases to fall sharply.

The coding paper or manual was based on that pre-test, which verified the choice of variables and categories. As a first step, we contrasted the regularity (WHO R2) in both accounts of the number of tweets per day and the time period in which they were published. The format of the tweets (WHO R3-R4)—text-only or including some other audio-visual element, such as, images, graphs, videos, gifs or links—was recorded. As a second step, we measured engagement (WHO R5), which, in the context of Twitter, refers to all those posts that give or receive some form of interaction (a retweet from another account, links to a website, videos from other accounts or platforms, tweet cards or different hashtags). Similarly, we took into account the percentage of the content of the hashtag, which was dependent upon the press conference participation (WHO R1) of President Pedro Sánchez, Health Minister Salvador Illa or Fernando Simon, the head of the Center for the Coordination of Health Alerts and Emergencies (CCAES).

We also counted the interactivity of all possible network actions that serve to boost the reach of tweets, called “KPI”s (key performance indicators): ‘comments’, indicating that the user has added a written comment, ‘retweets’, a marker that appears when the user has shared the tweet on their own Twitter account, and ‘likes’, indicating that the Twitter user appreciates the content of the tweet. With these figures, we calculated the score for comments, viralization and support, as well as the level of engagement—a metric used to determine to what extent social network users are involved with any given account and its content.

To complement the previous section and contrast the hypotheses, we carried out content analysis with the initial split of the communication strategies expressed by the two official accounts (@sanchezcastejon and @sanidadgob). Two large blocks of analysis were established, thus allowing us to observe if the tweet was of an informative–communicative nature or if, by contrast, it was instructive–educational. The Table 1 below shows the ranking of the sub-topics in the main categories with the most prominent values in the discourse of each account.

Table 1. Ranking of the issues linked to the official communication strategy.

Informative/Communicative	Instructive/Educational
A. Informing about the state of alarm	E. Instructions for the general public
B. Communicating data	F. Assessing data
C. Announcing economic measures	G. Sharing health measures
D. Communicating scientific breakthroughs	H. Teaching about the message of unity
V. Others	O. Others

Source: authors’ own material.

3. Analysis and Results

In this section, we analyze the most relevant results, some of them related to the WHO recommendations, in terms of leadership, regularity, interactivity, format of posts and content analysis.

3.1. Leadership

The official spokespersons of the crisis communication in the official Twitter accounts analyzed are clearly identified (WHO R1); below are three of them ranked in terms of prominence from greatest to least:

- The President of the Government Pedro Sanchez has a constant presence in the first phase of the pandemic (12 March 2020 to 18 April 2020), 68% of the total, through videos of his appearances, photos and messages, decreases in the remaining two months (19 April 2020 to 21 June 2020).
- The Minister of Health, Salvador Illa, gained presence from 20 March 2020 as that of the President of the Government diminished. The tweets show the minister’s daily

appearances before citizens and the media and weekly appearances in Congress before politicians.

■ Lastly, the director of the CCAES, Fernando Simón, plays a visible role as spokesperson, with a technical profile, in contrast to the political profile of the two previous, sharing the spotlight with the Minister of Health, with a practically daily presence as of 1 April 2020.

3.2. Regularity

Table 2 shows the main descriptive statistics of the tweets analyzed between 12 March 2020 and 21 of June 2020. As was stated above, the president's account has a lower number of tweets (133) than that of the Ministry of Health (617), with the account of the President of the Spanish Government (@sanchezcastejon) registering a daily average of 1.3 and the account of the Spanish Ministry of Health (@sanidadgob) registering 6.05.

Table 2. Descriptive statistics for tweets analyzed between 12 March 2020 and 21 June 2020.

Twitter Accounts	Tweets	Average per Day	Standard Deviation	Max. T/D	Min. T/D
@sanchezcastejon	133	1.3	0.44	8	0
@sanidadgob	617	6.05	0.06	15	0
Total	750				

Source: Twitter and own elaboration.

This observation is interesting as one of the first results of the study, revealing that the bulk of social network activity was carried out by the account of the Ministry of Health.

As regards maximum activity, as measured by the number of tweets in a single day, in President Sanchez's account it was eight tweets on the 17 March 2020 the day on which Pedro Sánchez announced in his press conference "the largest mobilization of economic resources in the history of Spain to create a social shield at the service of the Spanish population of 200,000 million euro" (17 March 2020). As far as the account of the Spanish Health Ministry is concerned, the peak of activity was 15 tweets and it was reached on two days: the 2 April 2020, the day on which the Health Minister, Salvador Illa, appeared, at his own request, before the Commission of Health and Consumption of the Congress to inform about how the situation was evolving and the measures being taken as regards #COVID-19. The other date with 15 tweets posted on the @sanidadgob account was the 4th of May 2020, and it coincided with the announcement of a new extension of the state of alarm and the beginning of the process of easing restrictions in which most of the Spanish territory entered Phase 0 and the use of face masks became compulsory.

The president's Twitter account @sanchezcastejon was created on 25 August 2009, and in June 2020, it had 1,219,911 followers and 26,439 tweets posted, whereas the Ministry of Health's Twitter account @sanidadgob had 553,541 followers in June 2020 and had posted 25,247 tweets since its creation in December 2010. During the pandemic, the number of followers rose in both accounts—by more than 100,000 in the first month of the pandemic, specifically, 105,000 for @sanchezcastejon and 160,000 for @sanidadgob. The number of followers fell for both accounts, and in the month of April 2020, the accounts gained 81,000 and 56,000 followers, respectively. In May 2020, they gained 41,000 and 33,000, respectively. The most significant fall was in June: 28,157 on @sanchezcastejon, with @sanidadgob experiencing an even greater fall—it only gained 7783 followers in June 2020 [75,76].

3.2.1. Activity on Each Twitter Account

Other, more significant results recorded in this study can be extracted by comparing the activities of the Twitter accounts of the president and the Ministry, as set out in Figure 1. As regards the regularity of the information, the graph shows the distribution of the messages posted on each account and the aggregate of these over the time period.

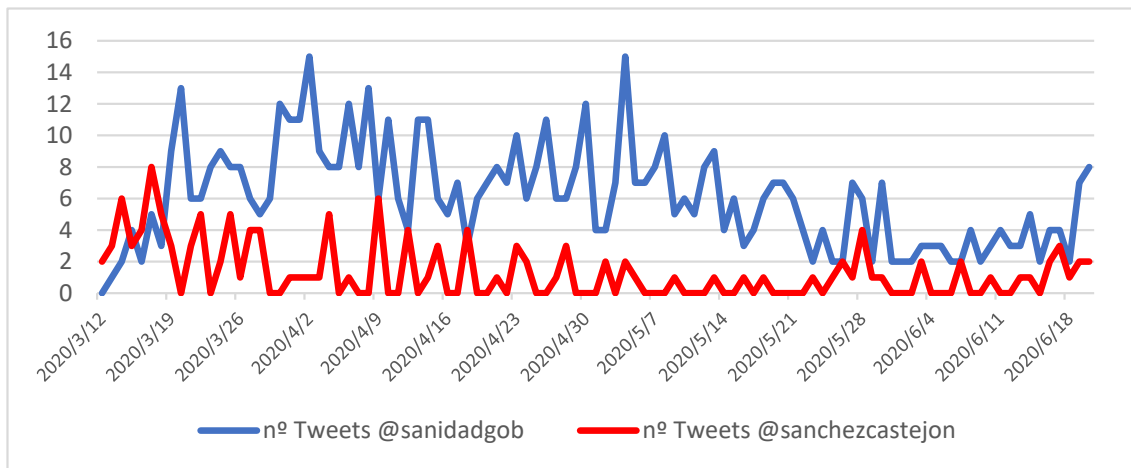


Figure 1. Comparison of activity on the accounts @sanchezcastejon and @sanidadgob. Source: Twitter and own elaboration.

The first peaks of activity on the president's account @sanchezcastejon appear on the 14th and 17th of March, coinciding with the declaration of the state of alarm and the mobilization of EUR 200,000 million as a social shield. One day later, on the account of the Ministry @sanidadgob, on the 15th and 18th of March, these peaks were repeated with a view to strengthening those messages.

Secondly, it is interesting to note the evolution of the number of posts on the Twitter account of the Ministry of Health—far above the activity of the president's Twitter account. The account of the Ministry went from posting one tweet in the first days of the pandemic to a peak of 13 posts on 20 March 2020 with a battery of recommendations as to what to do in the face of the pandemic. The highest peak in posts of @sanidadgob was 15 tweets, which was reached on two days: the 12th of April and the 4th of May. From that date on, the activity of the Ministry's account fell during the month of May, recording only two peaks of activity—the 27th of May, when 10 days of official mourning were decreed for the victims of COVID-19, and the 30th of May, when Phase 3 of the new normality was reached. In the month of June, the activity of the Ministry's account was very low and remained so until the 20th of June (8 tweets), the eve of the opening of borders to receive people arriving in Spain from the EU (except Portugal) when the Ministers Illa (Health) and Ábalos (Transport, Mobility and Urban Agenda) visited Madrid-Barajas airport to check the controls that visitors would undergo.

As regards the account of the President of the Government @sanchezcastejon, its highest activity was on 17 March 2020, with eight posts. Thereafter, we can appreciate an irregular curve with peaks of activity coinciding with the president's appearances at press conferences and the subsequent extensions of the state of alarm, declining in the same way as the Ministry's in the month of May, recording a small peak of activity with four tweets on 28 May 2020, related to the attempt to promote an effort in conjunction with the United Nations. The idea was to reduce the impact of the pandemic in the most vulnerable nations.

Another of the elements that can be appreciated in this analysis of results, and which is reflected in Figure 2 below, is the activity of the two Twitter accounts separated into the three phases of the period studied: flattening the curve (F1), number of people leaving hospital exceeds the number of cases (F2) and the fall in cases (F3).

The first phase, from 12 March 2020 to 18 April 2020—the most critical phase of the pandemic when cases rose at a great rate, rising from 2968 on the 12 March [77] to 191,726 on the 18 April [78]—is the period in which the most extreme measures were taken: the decree of the state of alarm, lockdown and the restricting of movement in the whole of Spain for non-essential activities. In F1, the strategic objective of the government was to flatten the curve, so it is necessary to inform the general public and attempt to make the

measures taken effective enough to promote social discipline. It is the phase with most activity in both accounts as is shown in the previous graph.

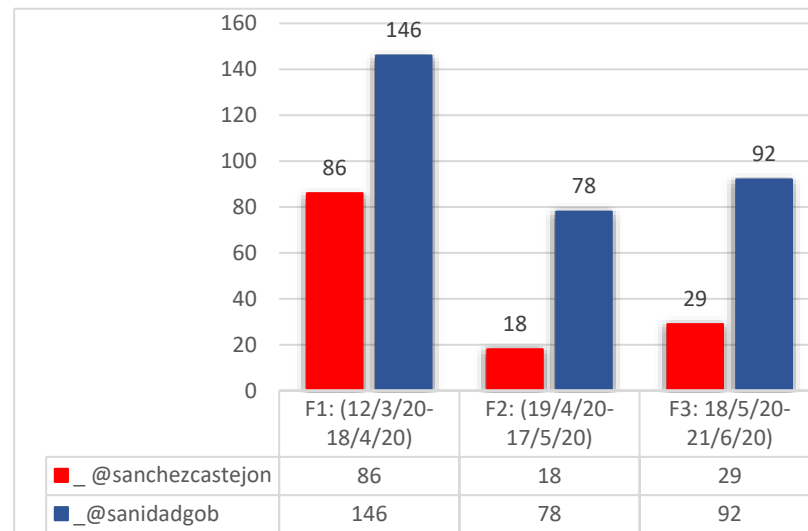


Figure 2. Comparison of activity @sanchezcastejon and @sanidadgob by time period. Source: Twitter and own elaboration.

In the second phase—that of easing restrictions—from 19 April 2020 to 16 May 2020, the strategic objective of the Government of Spain was for the number of people leaving hospital to be greater than the number of admissions of COVID-19 cases. In F2, we can see a significant decrease in the activity of each account, however; whereas the Ministry account fell by 50% in its activity, the president’s fell by 80%. The president lost presence and protagonism in the second phase, both on Twitter and in appearances.

In the third and final phase, from 15 May 2020 until 21 June 2020, the stage of recovery and rebuilding, the activity of each account increased significantly. During this phase, there is a considerable fall in cases, and activities begin to resume; on 28 May 2020, there is a new hashtag on the @sanidadgob account: #NoLoTiresPorLaBorda (“don’t throw it all away”). In those tweets, both the president (spokesperson–leader) and the Ministry (institution with highest responsibilities) made an extra effort to ensure the efficacy of the extreme measures that had been taken and which had been strongly criticized by the rest of the political groups. They were backed up by subsequent extensions of the state of alarm. For that reason, the message on both accounts is uniform: “A new stage is beginning . . . but the warning is clear: the virus may reappear . . . let’s not drop our guard, let’s continue to be as responsible as possible” (Tweet from the account @sanchezcastejon on 20 June 2020 at 15:05 h) and: “The whole population of Spain has made great efforts to stop #COVID-19. You’ve given your all, we can’t go back now and lose all we’ve achieved. Each gesture counts #NoLoTiresPorLaBorda” (Tweet from the account @sanidadgob on 8 June 2020 at 20:00 h).

3.2.2. Timing of the Posting of Tweets

Another variable which serves as an analytical metric when it comes to studying regularity of posts on social media are the time periods, particularly in order to have a presence on social media at the time of maximum activity. Without doubt, the study period is an atypical one during the first month of the pandemic, according to sources from the social network Twitter; the total number of active users increased by 23%, reaching 164 million in one quarter when, in the previous year (2019), in the same month, there were 134 million registered users. The same sources say it is the greatest inter-yearly increase in the figure in all its history [79]. This significant increase in activity during the health crisis reveals the importance of Twitter when intervening on the social media, which is favored by users for creating content and being informed. In Spain, this increase was reflected by a total of 4.1 million users in 2020.

Figure 3 shows a fragmentation in five time periods in which we can see the activity of the Twitter accounts of the President of the Government and the Health Ministry of Spain.

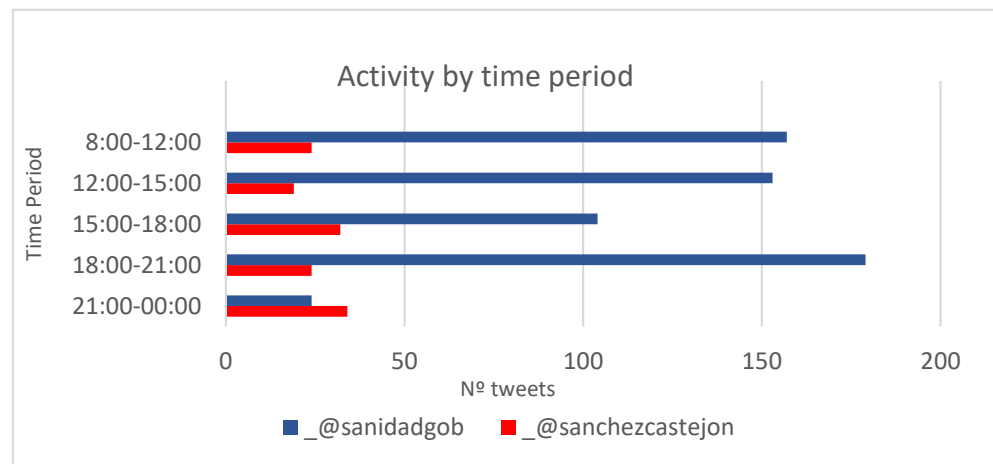


Figure 3. Activity of @sanchezcastejon and @sanidadgob by time period. Source: Twitter and own elaboration.

The president’s Twitter account peaked with 34 tweets posted between 9 p.m. and midnight, in other words, “prime time”. On the other hand, the account of the Ministry of Health registered 24 tweets in the same time period—the lowest recorded score in terms of activity. Prime time for the account belonging to the Ministry of Health was between 6 p.m. and 9 p.m., with 179 tweets, a period in which the @sanchezcastejon account recorded an average of 24 tweets. In other words, in the time periods when the Ministry has a lot of activity, the account of the president has medium activity and vice versa—in the time periods in which the @sanchezcastejon account posts more tweets, the @sanidadgob account has medium or low activity. These results show that regularity (every day at the same time) in a trickle of information, as indicated by the WHO R2, is essential to combat misinformation.

3.3. Formats Used on the Twitter Accounts

Table 3 shows the formats that appear in the posts of the Twitter accounts analyzed. We have counted images (mostly photographs), videos, graphs, links (to other accounts or websites) gifs and text-only tweets.

Table 3. Formats used on the Twitter accounts of the Spanish government.

	@sanchezcastejon		@sanidadgob	
	n°	%	n°	%
Images	6	5%	31	5%
Videos	90	68%	267	43%
Graphs	9	7%	255	41%
Links	9	7%	283	46%
Gifs	0	0%	22	4%
Text-only	19	14%	22	4%

Source: Twitter and own elaboration.

After coding the formats, it was noticed that there is a considerable number of videos on both accounts, more so in the case of @sanchezcastejon with 68% of tweets of those analyzed (90). Many of these videos show short clips of appearances of the President Pedro Sánchez at press conferences, which were posted on Twitter shortly afterwards.

As regards the @sanidadgob account, we can highlight the number of both graphs and links used—41% (255 tweets) for the former and 46% (283 tweets) for the latter. The websites featured in the links are, in descending order: the Ministry of Health ³, followed by the

website of the Government of Spain ⁴, also the Moncloa (presidential residence) website and, finally, the website of the relevant Ministries ⁵. To a lesser extent, some of the posts contain links to official organisms such as the Boletín Oficial del Estado (Official State Bulletin) ⁶, where the measures passed by Government are published, or the YouTube channel of the Congress of Deputies ⁷, where people can follow a live link of the interventions at Congress of different leaders to give account and explain the situation with the COVID-19 pandemic. Both accounts use stories, graphics, photos and videos to illustrate and make information about COVID-19 more understandable. However, it is the Ministry's account that contains more links to guide citizens to where to obtain accurate information, as indicated by WHO recommendations (R3 y R4).

3.4. Interactivity of Users with the Twitter Accounts

In this section, we analyzed the interactivity of the followers of the Twitter accounts analyzed and Twitter users in general using "comments", "retweets", "likes" and views of videos from the posts of @sanchezcastejon and @sanidadgob. The numbers for each type of interaction (comments, viralization, support and engagement) are shown in Table 4.

Table 4. Interactivity of the Twitter accounts of the Spanish government.

Twitter Accounts	@sanchezcastejon	@sanidadgob
Followers on 21 June 2022	1,219,911	553,541
Tweets analyzed	133	617
Comments	166,970	39,883
Retweets	158,712	177,403
Likes	446,419	564,104
Videos played	14,964,100	15,988,867
Rate of comments	14%	7%
Rate of viralization	13%	32%
Rate of support	37%	102%
Rate of engagement	63%	141%

Source: Twitter and own elaboration.

Observing the results shown in Table 4, the first figure worth highlighting is the total number of views recorded by the videos. The 90 videos posted on the president's account registered nearly 15 million views (14,964,100), while the 267 videos on the Health Ministry's account received almost 16 million views (15,988,867). Of the most-viewed videos on the @sanchezcastejon account, two stand out with over 1 million views: on 14 March 2020, when the President of the Government of Spain appeared to announce the state of alarm (1,400,000 views) and a video of the president and the Health Minister on 21 March 2020, in which the Scientific Committee for following COVID-19 was set up. The text of that tweet expressed the government's gratitude to scientists for their effort to defeat coronavirus (1,400,000 views).

In the Twitter account of the Ministry of Health, @sanidadgob, there is a video that amassed 4 million views on 17 March 2020. The video is a montage of real images of people in lockdown only three days after the state of alarm was declared. The text of the tweet acknowledges that "these are tough days, but thanks to the sacrifice of all, we will overcome. Each day that goes by brings us closer to stopping this, closer to enjoying our families and friends once again. We'll do it! Together #EsteVirusLoParamosUnidos".

The scores for interactivity and interaction are shown in Figure 4 below.

The analysis reveals a high level (63%) of "engagement" in the president's Twitter account, anything over 25% being considered "high" [3]. Having said that, an even more remarkable score is the 141% for "engagement", registered by the account of the Ministry of Health. That figure shows that not only the followers of the @sanidadgob account but also other Twitter users interact with the Ministry's account with "likes" (564,104), "retweets" (177,403) and, to a lesser degree "comments" (39,883). Interestingly, interactivity by "comments" on the president's account (166,970) is higher than on the Ministry account.

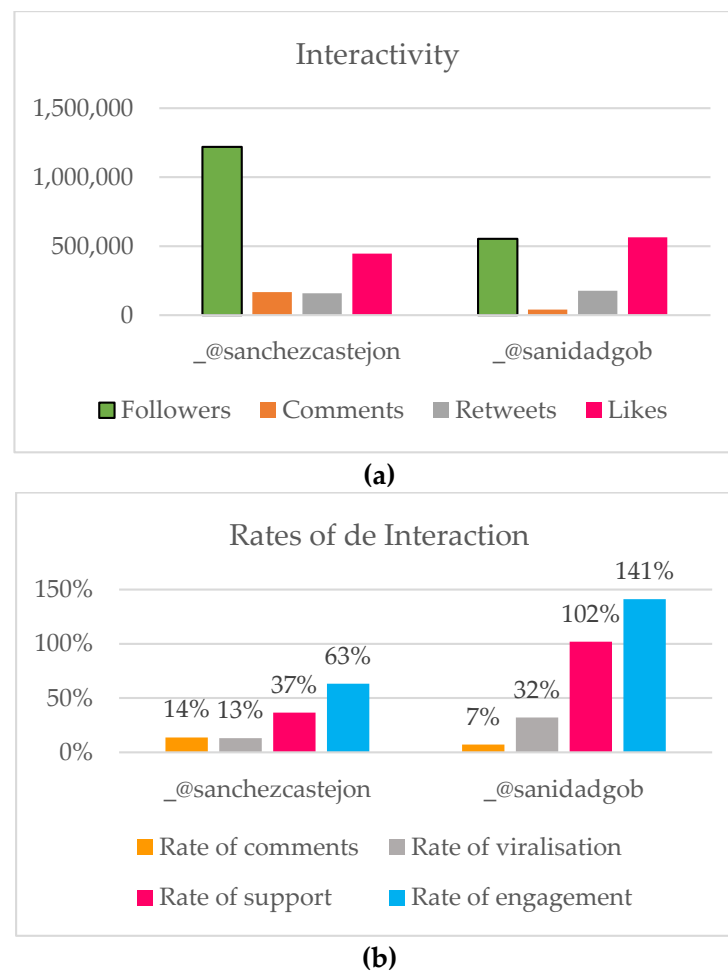


Figure 4. (a) Interactivity of the Twitter accounts @sanchezcastejon and @sanidadgob. (b) Rates of interaction of the Twitter accounts @sanchezcastejon and @sanidadgob. Source: Twitter and own elaboration.

Applying other approaches to the analysis, it is worth pointing out that a large percentage of the tweets from both accounts are interactive: 69% (92) of Sanchez’s account and 68% (419) of the Ministry account, at the same time bearing in mind that any tweet that was a retweet from the content of another account or contained a link to a video was considered “interactive”. Of the 133 tweets in the sample from the @sanchezcastejon account, the results of this study reveal that most of them summarize the interventions of the President—66 tweets (50%)—and the decisions taken at the Council of Ministers—39 tweets with the label “CMin” (26%).

It should also be noted that, of the 617 tweets from the account of the Ministry @sanidadgob, appearances (60%) are one of the most important contents, accounting for 10% more than on the account of the president. This difference is due to the fact that the Ministry account registers both the appearances of the Minister for Health, Salvador Ills (political spokesperson), and those of Fernando Simón (technical spokesperson), the head of the Center for the Coordination of Health Alerts and Emergencies (CCAES).

3.5. Content Analysis of the Twitter Accounts: By Focus

Finally, in terms of a consideration of the results, this study carried out a content analysis of the sample. Below, in Table 5, we see the two approaches in terms of their focus, categorized as: informative–communicative, which covers information regarding the state of alarm, data, economic and health measures and scientific breakthroughs. The other scale shows the instructive—educational focus, which explains the issues, using them for

teaching purposes, assesses and analyzes the data, establishes guidelines for action, offers advice and shares a motivational discourse in order to promote national unity and social discipline in the face of the virus.

Table 5. Focus of the content of the accounts @sanchezcastejon and @sanidadgob.

Twitter Accounts:	@sanchezcastejon		@sanidadgob	
Focus	n° Tweets	%	n° Tweets	%
Informative/Communicative	66	50%	245	40%
Instructive/Educational	67	50%	372	60%
Totals:	133		617	

Source: Twitter and own elaboration.

Of the total number of messages on the Twitter account of the President of the Government of Spain, Pedro Sánchez, the analysis concludes that 50% have an informative–communicative focus, and the focus of the other 50% is instructive–educational, whereas the focus of the content of the Ministry account is mainly instructive–educational (60%).

3.5.1. Informative–Communicative Focus

If we break down the different items used to categorize the informative–communicative focus, the results obtained are shown in Figure 5.

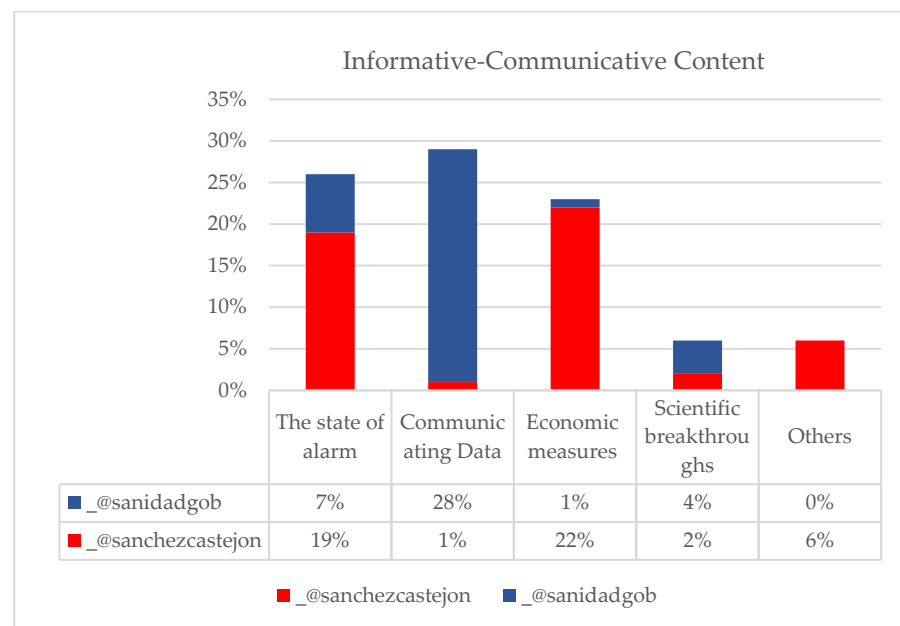


Figure 5. Tweets with informative–communicative content on the Twitter accounts of the Government of Spain. Source: Twitter and own elaboration.

If the focus of the analysis is on informative–communicative content (Figure 5), and bearing in mind the table from the categories set out in the code book, in the president’s account @sanchezcastejon, the highest percentage of posts (22%) focus on communicating the economic measures that the Government of Spain passed to alleviate the crisis (as opposed to 1% in the Ministry account). The communication of action, i.e., proactive content, rests with the figure of the president, strategically speaking, on the Twitter social media.

On the Ministry account @sanidadgob, the most numerous informative tweets (28%) focused on informing and communicating the data of the pandemic: number of cases, deaths, number of people leaving the hospital and number of tests carried out. However, this type of content is virtually non-existent in the tweets from the account of the president—only 1%.

As regards the remaining items of a communicative–informative focus, the president’s account has a higher percentage of content related to information about the state of alarm (19%). It also informs about the measures it entails, how any extension must be requested at Congress and the benefits it brings despite the criticism it received from other political parties outside government. Finally, in terms of scientific breakthroughs, there was very little content on both accounts during the first three months of the pandemic (4% on @sanidadgob and 2% on @sanchezcastejon).

To illustrate these results, two tweets are shown in Figure 6. They are two examples of communicative acts: one belongs to the Ministry Twitter account and the other to the president’s.



Figure 6. (a) An example of communicative action using the data for the COVID-19 pandemic. Source: Twitter, @sanidadgob, tweet from 20 April 2020 at 12:18. (b) Example of communicative action about the extension of the state of alarm. Source: Twitter, @sanchezcastejon, tweet on 25 March 2020 at 10:44 p.m.

In the tweet on the left, Figure 6a, from the Ministry of Health account, there is a graph showing the situation of Spain for COVID-19 with the number of confirmed cases (200,120), people who recovered (80,587) and people who have died (20,852), as well as a link to find detailed, further information for each autonomous community.

In the tweet on the right, Figure 6b, from the president’s account, there is a video of Sánchez at Congress, and the text refers to that event: “myself appearing before @Congreso_Es to request an extension of the State of Alarm in lockdown”. It is a communicative action in which the president asks for time “to defeat the virus”. As the WHO (R5) warned nations with high COVID-19 on the use of clear arguments and consistent messages in all channels: the Ministry’s account reports on the evolution of epidemiological data with simple supporting graphics and the president’s account reports on the difficult decisions to be made with simple arguments.

3.5.2. Instructive- Educational Focus

Secondly, with the emphasis on an instructive–educational approach (Figure 7), we can observe a clear dominance of three of the instructive–educational items in the case of the Twitter account of the Ministry compared to the president’s account, except in messages of unity.

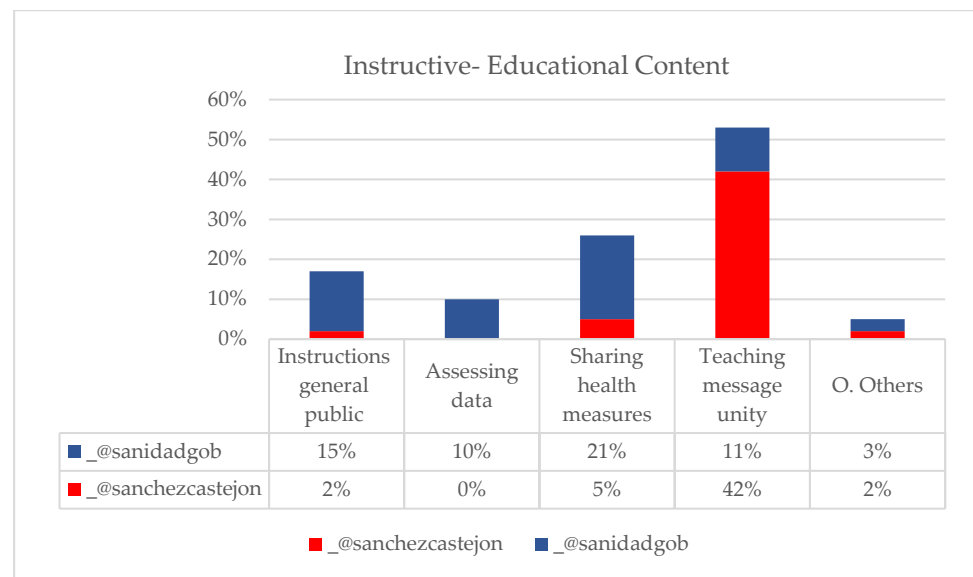


Figure 7. Tweets with an instructive–educational focus from the accounts of the Government of Spain. Source: Twitter and own elaboration.

The first item, related to instructions regarding coronavirus as communicated to the general public and companies by the Ministry of Health, accounted for 15% of all content of posts, whereas the score on the president’s account @sanchezcastejon was only 2%.

In second place—an assessment of data—the Ministry account assigned 10% of its content to that, whereas in the case of the president’s, it was 0%. It is striking that no assessment content appears in the president’s posts, but it is even more striking that the tweets that appear on the Ministry account related to this area is a task assigned to a spokesperson figure and not a political one. It fell to the head of the CCAES, Fernando Simon, to explain and make epidemiological assessments—on Twitter it was conducted using videos with summaries of some of his interventions. Thirdly, with the sharing of health measures, it is the Ministry account, with 21%, rather than 5% for the president’s, which assumes responsibility for this task.

The data indicate that the communicative task assigned to the Health Ministry’s Twitter account is one of sharing, explaining and using the health measures being introduced to prevent the spread of SARS-CoV-2 for teaching purposes—the so-called 6“M’s” (alliteration in Spanish): use of face masks, hand-washing, social distancing (1.5 m), less contact, more ventilation and stay at home.

Other posts from the Ministry explain other issues, for example: how to recognize the illness and not mistake it for others, what to do with a case, the importance of early detection with a test, how to protect the most vulnerable and, most importantly, instructing about the efficacy of the coming vaccinations which represent—for the government’s action strategy—the final victory.

Before looking at two examples of tweets from each account as instructive–educational actions, one other relevant result should be pointed out: 42% of tweets from the @sanchezcastejon account are identified with the category of messages for “uniting”. These messages that appear on the Twitter account of the highest-ranking spokesperson are messages of unity steeped in a strong educational style. They strengthen the morale of the nation with a motivational discourse: we will stop this virus together, we go out and come in together, we protect the most vulnerable, we appreciate those who work on the front line, we feel sorrow and mourn the victims and a call to political and social unity (the governments of autonomous communities, political parties and players in society).

This discourse also goes beyond the national sphere and seeks to feed the idea that Spain is not alone in this struggle, but, rather, it has the backing of the EU and the guidelines

and advice of the WHO and the UN. Sánchez was promoting global unity in the face of a crisis of global proportions, from Twitter.

Figure 8 represents two examples of tweets from each account as instructive–educational actions. The image on the left, Figure 8a, is from a tweet published on the account of the Ministry of Health recommending the use of face masks beside an explanatory video of how to use them properly, in what is clearly an action to instruct.



Figure 8. (a) Example of an instructive action about the appropriate use of face masks. Source: Twitter, @sanidadgob, tweet on 25 April 2020 at 06:16 p.m. (b) Example of a motivational instructive action. Source: Twitter, @sanchezcastejon, tweet on 1 April 2020 at 08:56 p.m.

The image on the right, Figure 8b, is from a tweet posted on the account of the President of the Government in which he appreciates the efforts citizens are making with video. He speaks of Spain as a great country, with a united and supportive society, but it must not drop its guard. It is a clear example of a communicative action to motivate.

4. Conclusions and Discussion

In the general context of this piece of research, the information in circulation during the first phases of the pandemic was copious. The data available and which were being shared by different sources—both public, official and of a different nature—made the public vulnerable to news stories, in particular fake news. In that sense, the considerable increase in the circulation of information where information confirmed by official sources appeared alongside fake or unsubstantiated news, led to confusion, which, in turn, could have given rise to a public health risk [80]. Faced with a worldwide emergency, in a situation of uncertainty, information became a central element when it came to tackling the pandemic with social networks playing a key role [22]. The different specific objectives set out in this study reflect what type of information was shared and produced by the officialdom of the Twitter accounts of the President of the Government of Spain and the Ministry of Health and collected in hashtags. The data offered on the accounts @sanchezcastejon and @sanidadgob show a constant stream of information during the period analyzed, coinciding with the beginning of the pandemic, with the Spanish Ministry of Health taking on a greater leadership role. On the Twitter account, @sanidadgob, the online communication strategies were put into practice with greater intensity during the period studied than on the @sanchezcastejon account, and both stood as a governmental information channel [18]

to contain the pandemic when it was necessary to maintain lockdown and flatten the curve of cases (F1). After the over-exposure of the president in the first phase, he took a step back, letting other political leaders come to the fore: the Minister for Health, Salvador Illa, and more technical players, Fernando Simón, head of the CCAES. The results show that the messages of the President of the Spanish Government were fewer, albeit with greater visibility, being clear, convincing and resolute (F2 y F3).

The COVID-19 crisis was on a world scale, and information, lack of information and fake news, among other features, had a key role. From the perspective of the diffusion of false content on a large scale, social networks have made a contribution to that scenario, generating negative consequences in many ways [81]. The large dimensions of the pandemic meant that the WHO warned of a problem of infodemic, which had to be tackled since several dysfunctional elements were present at the same time, such as, disinformation, fake news and conspiracy theories [82], which hindered the efficacy of the preventative measures recommended to governments. The official sources of the Government of Spain analyzed in this research work collect the recommendations of the WHO [47], (Table 6):

Table 6. Checklist of WHO recommendations to combat infodemic.

Who Recommendations	Study Results
R1.1 Identification of spokespersons.	-Govt. President; Health Minister; CCAES Technical Dir.
R1.2 Informing decisions with clear arguments.	-President informs of the measures/Minister and Technician explain situation and measures.
R1.3 Consistent messages in all sectors.	-Coherence in the two Twitter accounts.
R2. Regularity (same day at the same time).	-Alternate time slots for President and Minister.
R3.1 Use stories, photos, videos.	-High content in both accounts.
R4. Guide the citizen to truthful information.	-Links to web M. Sanidad, La Moncloa, other M., BOE.
R5. Use the channels used by citizens.	-Accounts increased number of followers and their content, high engagement rate and high number of reproductions.

Source: WHO and own elaboration.

About the importance of regularity when publishing messages constantly and frequently, in the results pertaining to the time periods, it was observed that there is a continuity between the Twitter accounts of the President Pedro Sánchez and that of the Spanish Ministry of Health, which complement the official discourse over different time periods. That indicated a calculated strategy in which each leader–spokesperson had their prime time broadcast slot: @sanidadgob from 18:00 h to 21:00 h and @sanchezcastejon from 21:00 h to 00:00 h.

The fight against the pandemic and infodemic revealed the need for official information published by world leaders, in which Twitter was to have a strong presence [35]. In the case of Spain, the two accounts studied saw their number of followers rise by over 250,000 [75,76], and the rate of ‘engagement’ or rate of commitment was equally high: 68% @sanchezcastejon, 142% @sanidadgob.

This suggests that the tendency in the community of followers with their comments, retweets and likes has been loyal to the content posted on both accounts, and, in addition, the number of plays of the videos posted was close to 15 million in each account.

Regarding the first hypothesis, the increase in activity in a continued and systematic way in both accounts analyzed confirms a communication strategy of the Spanish government where official information is not only verified and aimed at citizens, but also companies and the media. The constant publishing of tweets on both accounts consolidates the leaders and the government as official sources with substantiated information, which is backed by clips of their interventions in Congress, in press conferences and other actions. There is also a feeding of content with links to the rest of official websites (competent Ministries), providing citizens, companies and the press with updated content on a daily basis.

With the second hypothesis, focused on a split communicative strategy of the Spanish government, where a more informative and motivational function on the president's account was presumed and a more instructive–educational one with the Ministry of Health, there do not appear to be major differences in that respect with the president's Twitter account. Sánchez divides his content equally between informative content: announcements about political measures (state of alarm), economic measures (social shield), and health measures (purchase of health material and obligatory use of face masks), and educational content to strengthen public morale (we will stop this together, united we are stronger).

The informative interventions on the president's Twitter account are linked to aspects of political action, related to government decisions and are more of a journalistic action with their own headline, an image (photo or video) aimed at the media, while educational actions are linked to more civic aspects such as unity, appealing to the Spanish public's responsibility and social discipline, and they are aimed at the general public, taking advantage of the fact that Twitter can connect quickly, directly and in both directions the institutions (public and private) to the media and individual [43].

At the same time, it can be said that the account of the Spanish Ministry of Health has a content that is mainly instructive and educational (60%); it aims its messages at the general public and companies, explaining the measures that the President has announced. It interprets and assesses the data, backing up the health measures with a high percentage of tweets posted containing links (46%) to other official websites that contain data and press releases. The study has discovered that the communicative–informative actions of (@sanidadgob) focus on the communication of data (25% of content), one of the hardest informative tasks during the COVID-19 pandemic and one that was never strategically designed for the account nor the appearances of the President of the Government. Other studies [83] reach similar conclusions when analyzing the content of the Twitter accounts and interventions in press conferences of the President and Minister Illa.

These results show that the crisis communication strategies of the Government of Spain, applying a model of institutional communication in the traditional media and the social networks, Twitter, are public communication strategies founded on transparency and a constant informative presence. They serve to bring the public closer to the official sources, thus tackling the pandemic and the infodemic at the same time [84,85].

Author Contributions: Conceptualization, S.G.-G. and R.R.-D.; methodology S.G.-G. and R.R.-D.; data collection y formal analysis, S.G.-G.; validation, S.G.-G. and R.R.-D.; investigation, S.G.-G. and R.R.-D.; resources, S.G.-G. and R.R.-D.; writing—original draft preparation, S.G.-G. and R.R.-D.; writing—review and editing, S.G.-G. and R.R.-D.; supervision, R.R.-D.; project administration, S.G.-G. and R.R.-D. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

Notes

¹ <https://twitter.com/search-advanced> (accessed on 10 October 2022).

² https://blog.twitter.com/es_es/topics/insights/2020/asi-hemos-vivido-juntos-el-2020-en-twitter (accessed on 10 October 2022).

³ <https://www.sanidad.gob.es> (accessed on 10 October 2022).

⁴ <https://administracion.gob.es> (accessed on 10 October 2022).

⁵ <https://www.interior.gob.es>; <https://www.defensa.gob.es>; <https://www.mitma.gob.es> (accessed on 10 October 2022).

⁶ <https://www.boe.es> (accessed on 10 October 2022).

⁷ @CanalParlamento-Congreso_Es

References

1. Rogers, E.M.; Singhal, A.; Quinlan, M.M. In Diffusion of innovations. In *An Integrated Approach to Communication Theory and Research*; Stacks, D.W., Salwen, M.B., Eds.; Routledge: New York, NY, USA, 2008; Chapter 27; pp. 432–448. [CrossRef]
2. Castells, M. *La Sociedad Red: Una Visión Global*; Alianza Editorial: Madrid, Spain, 2006.
3. We Are Social and Hootsuite. Digital 2021: Global Digital Overview. We Are Social. January 2021. Available online: <https://wearesocial.com/digital-2021> (accessed on 3 March 2023).
4. Vergeer, M. Twitter and political campaigning. *Sociol. Compass* **2015**, *9*, 745–760. [CrossRef]
5. Campos, E. Twitter y la comunicación política. *Prof. Inf.* **2017**, *26*, 785–794.
6. Stewart, B. Twitter as method: Using Twitter as a tool to conduct research. In *The SAGE Handbook of Social Media Research Methods*; Sloan, L., Quan Haase, A., Eds.; SAGE Publishing: New York, NY, USA, 2017; pp. 251–265.
7. McNair, B. *An Introduction to Political Communication*; Routledge: London, UK, 2017.
8. Parmelee, J.H.; Bichard, S.L. *Politics and the Twitter Revolution: How Tweets Influence the Relationship between Political Leaders and the Public*; Lexington Books: Plymouth, UK, 2012.
9. Larsson, A. Online all the time? A quantitative assessment of the permanent campaign on Facebook. *New Media Soc.* **2016**, *18*, 274–292. [CrossRef]
10. Gainous, J.; Wagner, K.M. *Tweeting to Power: The Social Media Revolution in American Politics*; Oxford University Press: Oxford, UK, 2014.
11. Alonso-Muñoz, L.; Casero-Ripollés, A. Transparencia y monitorización en el entorno digital. Hacia una tipología de las plataformas impulsadas por la ciudadanía. *Rev. Lat. Comun. Soc.* **2017**, *72*, 1351–1366. [CrossRef]
12. Casero, A.; Feenstra, R.A.; Tormey, S. Old and new media logics in an electoral campaign: The case of Podemos and the two-way Street mediatization of politics. *Int. J. Press/Politics* **2016**, *21*, 378–397. [CrossRef]
13. Alonso-Muñoz, L.; Casero-Ripollés, A. Populism against Europe in social media: The eurosceptic discourse on Twitter in Spain, Italy, France, and United Kingdom during the campaign of the 2019 European Parliament Election. *Front. Commun.* **2020**, *5*, 54. [CrossRef]
14. Bouza, L.; Tuñón, J. Personalización, distribución, impacto y recepción en Twitter del discurso de Macron ante el Parlamento Europeo el 17/04/18. *Prof. Inf.* **2018**, *27*, 1239–1247.
15. González, S.T.; Pérez-Curiel, C. Populismo político en tiempos de COVID. Análisis de la estrategia de comunicación de Donald Trump y Boris Johnson en Twitter. *Rev. SEECI* **2021**, *54*, 1–24. [CrossRef]
16. Montoya, P.; Vandehey, T. *The Brand Called You. Create a Personal Branding That Wins Attention and Grows Your Business*; McGraw-Hill: London, UK, 2009.
17. Rampersad, H. *Authentic Personal Branding: A New Blueprint for Building and Aligning a Powerful Leadership Brand*; IAP: San Bernardino, CA, USA, 2009.
18. Gong, X.; Lane, K.M.D. Institutional Twitter Usage among U.S. Geography Departments. *Prof. Geogr.* **2019**, *72*, 219–237. [CrossRef]
19. Tuñón, J.; Carral, U. Has COVID-19 promoted or discouraged a European Public Sphere? Comparative analysis in Twitter between German, French, Italian and Spanish MEPSs during the pandemic. *Commun. Soc.* **2021**, *34*, 135–151. [CrossRef]
20. Rosenberg, H.; Syed, S.; Rezaie, S. The Twitter pandemic: The critical role of Twitter in the dissemination of medical information and misinformation during the COVID-19 pandemic. *Can. J. Emerg. Med.* **2020**, *22*, 418–421. [CrossRef] [PubMed]
21. Manfredi, J.L.; Amado, A.; Waisbord, S. Presidential Twitter in the fase of COVID-19: Between populism and pop politics. *Comunicar* **2021**, *29*, 83–94. [CrossRef]
22. Pulido-Polo, M.; Hernández-Santaolalla, V.; Lozano-González, A.-A. Uso institucional de Twitter para combatir la infodemia causada por la crisis sanitaria de la COVID-19. *Prof. Inf.* **2021**, *30*, 296–310. [CrossRef]
23. Rufai, S.R.; Bunce, C. World leaders' usage of Twitter in response to the COVID-19 pandemic: A content analysis. *J. Public Health* **2020**, *42*, 510–516. [CrossRef] [PubMed]
24. Cuesta-Cambra, U.; Martínez-Martínez, L.; Niño-González, J.I. An analysis of pro-vaccine and anti-vaccine information on social networks and the internet: Visual and emotional patterns. *Prof. Inf.* **2019**, *28*, 1–17. [CrossRef]
25. Kavada, A. Social Media as Conversation: A Manifesto. *Soc. Media Soc.* **2015**, *1*, 205630511558079. [CrossRef]
26. Hua, Y.; Jiang, H.; Lin, S.; Yang, J.; Plasek, J.M.; Bates, D.W.; Zhou, L. Using Twitter Data to Understand Public Perceptions of Approved versus Off-Label Use for COVID-19-Related Medicatio (4)(ns). *J. Am. Med. Inform. Assoc.* **2022**, *29*, 1668–1678. [CrossRef] [PubMed]
27. Marcec, R.; Likic, R. Using Twitter for Sentiment Analysis towards AstraZeneca/Oxford, Pfizer/BioNTech and Moderna COVID-19 Vaccines. *Postgrad. Med. J.* **2022**, *98*, 544–550. [CrossRef] [PubMed]
28. Ponmani, K.; Thangaraj, M. Clustering Based Sentiment Analysis on Twitter Data for COVID-19 Vaccines in India. *Int. J. Health Sci.* **2022**, 4732–4748. [CrossRef]
29. Castillo-Esparcia, A.; Fernández-Souto, A.-B.; Puentes-Rivera, I. Comunicación política y COVID-19. Estrategias del Gobierno de España. *Prof. Inf.* **2020**, *29*, 88–109. [CrossRef]
30. Casero-Ripollés, A. Impact of COVID-19 on the Media System. Communicative and democratic consequences of news consumption during the outbreak. *Prof. Inf.* **2020**, *29*, 35–45. [CrossRef]
31. Kullar, R.; Goff, D.A.; Gauthier, T.P.; Smith, T.C. To tweet or not to tweet—A review of the viral power of twitter for infectious diseases. *Curr. Infect. Dis. Rep.* **2020**, *22*, 14. [CrossRef]

32. Corral-Cumbreras, M.; Rodríguez-Díaz, R. La telemedicina en los medios de comunicación españoles: Prensa generalista y especializada = Telemedicine in the Spanish media: General and specialized press. *Rev. Esp. Común. Salud* **2016**, *7*, 89–103. [CrossRef]
33. Moreno Sesmero, A.; Rodríguez Díaz, R. Relaciones Entre laboratorios y medios de comunicación. fármacos y enfermedades en la prensa: El caso de la disfunción eréctil, Viagra y Cialis = Relations Between Laboratories and Media. Drugs and Diseases in the Press: The Case of Erectile Dysfunction, Viagra and Cialis. *Rev. Esp. Común. Salud* **2018**, *9*, 32–45. [CrossRef]
34. Soedarsono, D.K.; Mohamad, B.; Akanmu, M.D.; Putri, I.P. Political leaders and followers' attitudes: Twitter as a tool for political communication. *J. Crit. Rev.* **2020**, *7*, 1244–1252.
35. Haman, M. The use of Twitter by state leaders and its impact on the public during the COVID-19 pandemic. *Heliyon* **2020**, *6*, e05540. [CrossRef]
36. Gelpi Texeira, R. Política 2.0: Las Redes Sociales (Facebook y Twitter) Como Instrumento de Comunicación Política. Estudio caso Uruguay. Ph.D. Thesis, Universidad Complutense, Madrid, Spain, 2018. Available online: <https://eprints.ucm.es/id/eprint/49515/> (accessed on 10 October 2022).
37. Ganesh, B.; Froio, C. A “Europe des Nations”: Far right imaginative geographies and the politization of cultural crisis on Twitter in Western Europe. *J. Eur. Integr.* **2020**, *42*, 715–732. [CrossRef]
38. Das, R.; Ahmed, W. Rethinking Fake News: Disinformation and Ideology during the Time of COVID-19 Global Pandemic. *IIM Kozhikode Soc. Manag. Rev.* **2022**, *11*, 146–159. [CrossRef]
39. Elías-Pérez, C.; Catalan-Matamoros, D. Coronavirus: Fear to “official” Fake News Boosts WhatsApp and Alternative Sources. *Media Commun.* **2020**, *8*, 462–466. [CrossRef]
40. Salaverría, R.; Buslón, N.; López-Pan, F.; León, B.; López-Goñi, I.; Erviti, M.-C. Desinformación en tiempos de pandemia: Tipología de los bulos sobre la COVID-19. *Prof. Inf.* **2020**, *29*, 110–124. [CrossRef]
41. Tuñón, J.; Bouza, L. Europa en Tiempos de Desinformación y Pandemia. In *Periodismo y Política Paneuropeos Ante la Crisis del COVID-19 y Las Fake News*; Comares: Granada, Spain, 2021.
42. Bélanger, M.-E.; Lavenex, S. Communicating Mobility Restrictions During the COVID-19 Crisis on Twitter: The Legitimacy Challenge. *Swiss Political Sci. Rev.* **2021**, *27*, 822–839. [CrossRef]
43. McGravey, K. Digital Public Forums: Power and Representation in the Internet's Public Squares. *New Political Sci.* **2020**, *42*, 253–271. [CrossRef]
44. Conde, M.A.; Prada-Espinel, O.A.; Pullaguari-Zaruma, K.P. Comunicación gubernamental pre-COVID de los presidentes hispanohablantes en Twitter. *Univ.-XXI Rev. Cienc. Soc. Hum.* **2021**, *34*, 63–86. [CrossRef]
45. Xifra, J. Comunicación corporativa, relaciones públicas y gestión del riesgo reputacional en tiempos del COVID-19. *Prof. Inf.* **2020**, *29*, 17–34. [CrossRef]
46. Wu, A.W.; Connors, C.; Everly, G.S. COVID-19: Peer Support and Crisis Communication Strategies to Promote Institutional Resilience. *Ann. Intern. Med.* **2020**, *172*, 822–823. [CrossRef] [PubMed]
47. World Health Organization. Risk Communication and Community Engagement Readiness and Response to Coronavirus Disease (COVID-19). Interim Guidance. 19 March 2020. Available online: <https://apps.who.int/iris/bitstream/handle/10665/331513/WHO-2019-nCoV-RCCE-2020.2-eng.pdf> (accessed on 25 October 2022).
48. Fernández Zarza, L. Analysis of the Infodemic on COVID-19 in Spain [Análisis de la infodemia sobre la COVID-19 En España]. *Rev. Esp. Comun. Salud* **2022**, *13*, 219–228. [CrossRef]
49. Ogbodo, J.N.; Onwe, E.C.; Chukwu, J.; Nwasum, C.J.; Nwakpu, E.S.; Nwankwo, S.U.; Nwamini, S.C.; Elem, S.; Ogbaeja, N.I. Communicating health crisis: A content analysis of global media framing of COVID-19. *Health Promot. Perspect.* **2020**, *10*, 257–269. [CrossRef]
50. Higgins, T.S.; Wu, A.W.; Sharma, D.; Illing, E.A.; Rubel, K.; Ting, J.Y.; Alliance, S.F. Correlations of online search engine trends with coronavirus disease (COVID-19) incidence: Infodemiology Study. *JMIR Public Health Surveill.* **2020**, *6*, e19702. [CrossRef]
51. Cousins, H.C.; Cousins, C.C.; Harris, A.; Pasquale, L.R. Regional infoveillance of COVID-19 case rates: Analysis of search-engine query patterns. *J. Med. Internet Res.* **2020**, *22*, e19483. [CrossRef] [PubMed]
52. Casino, G. Comunicación en tiempos de pandemia: Información, desinformación y lecciones provisionales de la crisis del coronavirus. *Gac. Sanit.* **2022**, *36*, S97–S104. [CrossRef] [PubMed]
53. Gehrau, V.; Fujarski, S.; Lorenz, H.; Schieb, C.; Blöbaum, B. The Impact of Health Information Exposure and Source Credibility on COVID-19 Vaccination Intention in Germany. *Int. J. Environ. Res. Public Health* **2021**, *18*, 4678. [CrossRef] [PubMed]
54. Götz, G.; Herold, D.; Klotz, P.-A.; Schäfer, J.T. Efficiency in COVID-19 Vaccination Campaigns—A Comparison across Germany's Federal States. *Vaccines* **2021**, *9*, 788. [CrossRef] [PubMed]
55. Thakur, N. A Large-Scale Dataset of Twitter Chatter about Online Learning during the Current COVID-19 Omicron Wave. *Data* **2022**, *7*, 109. [CrossRef]
56. Thakur, N.; Han, C.Y. An Exploratory Study of Tweets about the SARS-CoV-2 Omicron Variant: Insights from Sentiment Analysis, Language Interpretation, Source Tracking, Type Classification, and Embedded URL Detection. *COVID* **2022**, *2*, 1026–1049. [CrossRef]
57. Waheeb, S.A.; Khan, N.A.; Shang, X. Topic Modeling and Sentiment Analysis of Online Education in the COVID-19 Era Using Social Networks Based Datasets. *Electronics* **2022**, *11*, 715. [CrossRef]

58. He, L.; He, C.; Reynolds, T.L.; Bai, Q.; Huang, Y.; Li, C.; Zheng, K.; Chen, Y. Why Do People Oppose Mask Wearing? A Comprehensive Analysis of U.S. Tweets during the COVID-19 Pandemic. *J. Am. Med. Inform. Assoc.* **2021**, *28*, 1564–1573. [CrossRef]
59. Leśniczak, R. News Coverage of Christian Churches and Other Religious Bodies Dealing with the COVID-19 Pandemic: An Analysis of Newspapers in German and English. *Church Commun. Cult.* **2022**, *7*, 175–195. [CrossRef]
60. Park, M.J.; Kang, D.; Rho, J.J.; Lee, D.H. Policy role of social media in developing public trust: Twitter communication with government leaders. *Public Manag. Rev.* **2015**, *18*, 1265–1288. [CrossRef]
61. Tuñón-Navarro, J.; López-Álvarez, S. Marcos Comunicativos En La Estrategia Online De Los Partidos políticos Europeos Durante La Crisis Del Coronavirus: Una Mirada poliédrica a La Extrema Derecha. *Prof. Inf.* **2022**, *31*, 108–126. [CrossRef]
62. Vieten, U.M. The “New Normal” and “Pandemic Populism”: The COVID-19 Crisis and Anti-Hygienic Mobilisation of the Far-Right. *Soc. Sci.* **2020**, *9*, 165. [CrossRef]
63. Marres, N. *Digital Sociology: The Reinvention of Social Research*; John Wiley & Sons: Hoboken, NJ, USA, 2017.
64. Hartley, J.; Burgess, J.; Bruns, A. *A Companion to New Media Dynamics*; John Wiley & Sons: Hoboken, NJ, USA, 2015.
65. Peña-Gómez, A.; Rodríguez-Díaz, R. ¿La información sobre salud está condicionada por la nacionalidad de los enfermos? El ébola como estudio de caso. *Saúde Soc.* **2019**, *28*, 253–266. [CrossRef]
66. Ante, L. How Elon Musk’s twitter activity moves cryptocurrency markets. *Technol. Forecast. Soc. Chang.* **2023**, *186*, 122112. [CrossRef]
67. Scherpereel, J.A.; Wohlgemuth, J.; Schmelzinger, M. The Adoption and Use of Twitter as a Representational Tool among Members of the European Parliament. *Eur. Politics Soc.* **2017**, *18*, 111–127. [CrossRef]
68. Navarro, J.T.; Vilar, U.C. Twitter Como solución a La comunicación Europea. Análisis Comparado En Alemania, Reino Unido y España. *Rev. Lat. Comun. Soc.* **2019**, *74*, 1219–1234. [CrossRef]
69. Bruns, A.; Burgess, J. # ausvotes: How Twitter covered the 2010 Australian federal election. *Commun. Politics Cult.* **2011**, *44*, 37–56.
70. Costa, J. *La Comunicación en Acción: Informe Sobre Nueva Cultura de la Gestión*; Paidós Ibérica: Barcelona, Spain, 1999; ISBN 84-493-0763-5.
71. Silverman, C. *Manual de Verificación: Una Guía Definitiva para Verificar Contenido Digital al Cubrir Emergencias*; European Journalism Centre: Maastricht, The Netherlands, 2016; Volume 187, pp. 191–196.
72. Krippendorff, K. *Content Analysis: An Introduction to Its Methodology*; Sage Publications, Inc.: London, UK, 2003.
73. Neuendorf, K.A. Content analysis: A contrast and complement to discourse analysis. *Qual. Methods* **2004**, *2*, 33–36.
74. Nocetti, O.R. *Falacias y Medios de Comunicación. El Discurso Como Arma*; Humanitas: Buenos Aires, Argentina, 1990.
75. Social Blade. Available online: <https://socialblade.com/twitter/user/sanchezcastejon> (accessed on 25 October 2022).
76. Social Blade. Available online: <https://socialblade.com/twitter/user/sanidadgob> (accessed on 25 October 2022).
77. Web del Departamento de Seguridad Nacional. Gabinete de la Presidencia del Gobierno. Gobierno de España. Available online: <https://www.dsn.gob.es/es/actualidad/sala-prensa/coronavirus-covid-19-12-marzo-2020> (accessed on 25 October 2022).
78. Web del Departamento de Seguridad Nacional. Gabinete de la Presidencia del Gobierno. Gobierno de España. Available online: <https://www.dsn.gob.es/es/actualidad/sala-prensa/coronavirus-covid-19-18-abril-2020> (accessed on 25 October 2022).
79. Vives, J. El Coronavirus Dispara el Número de Usuarios de Twitter, s.f. (Barcelona, Spain). *La Vanguardia*. 24 March 2020. Available online: <https://www.lavanguardia.com/tecnologia/20200324/4882705311/coronavirus-dispara-numero-usuarios-twitter.html> (accessed on 25 October 2022).
80. García-Borrego, M.; Casero-Ripollés, A. ¿Qué nos hace vulnerables frente las noticias falsas sobre la COVID-19? Una revisión crítica de los factores que condicionan la susceptibilidad a la desinformación. *Estud. Sobre Mensaje Periodístico* **2022**, *28*, 789–801. [CrossRef]
81. Allington, D.; Duffy, B.; Wessely, S.; Dhavan, N.; Rubin, J. Health-protective behaviour, social media usage and conspiracy belief during the COVID-19 public health emergency. *Psychol. Med.* **2021**, *51*, 1763–1769. [CrossRef]
82. Gabarron, E.; Oyeyemi, S.O.; Wynn, R. COVID-19-related misinformation on social media: A systematic review. *Bull. World Health Organ.* **2021**, *99*, 455–463A. [CrossRef] [PubMed]
83. García-García, S. Estrategias de comunicación del Gobierno de España en la pandemia del COVID-19 para combatir las *fake news*. In *Comunicación Política, de Gobierno y Redes Sociales*; Tirant lo Blanch: Madrid, Spain, 2023; pp. 131–162.
84. Hameleers, M.; Minihold, S. Constructing discourses on (un) truthfulness: Attributions of reality, misinformation, and disinformation by politicians in a comparative social media setting. *Commun. Res.* **2020**, *49*, 1176–1199. [CrossRef]
85. García-García, S. Cómo la pandemia de la COVID-19 cambia los formatos de comunicación entre los líderes políticos y los medios. In *Visiones Contemporáneas: Narrativas, Escenarios y Ficciones*; Carrero Márquez, O., Parras Parras, A., Eds.; Hernández Martínez, E. (Coord.); Fragua: Madrid, Spain, 2023; pp. 110–126.

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.