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**Submitted**  
November 4th, 2022  
**Approved**  
April 28th, 2023

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© 2023  
Communication & Society  
ISSN 0214-0039  
E ISSN 2386-7876  
doi: 10.15581/003.36.3.153-174  
[www.communication-society.com](http://www.communication-society.com)

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2023 – Vol. 36(3)  
pp. 153-174

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**How to cite this article:**  
Jiménez Alcarria, F. & Tuñón Navarro, J. (2023). EU digital communication strategy during the COVID-19 vaccination campaign: Framing, contents and attributed roles at stake, *Communication & Society*, 36(3), 153-174.

## EU digital communication strategy during the COVID-19 vaccination campaign: Framing, contents and attributed roles at stake

### Abstract

If in recent years the European Union (EU) has had to face complex and multifactorial “poly-crises” (such as Brexit, refugees or the euro), the pandemic caused by COVID-19 has been an unprecedented event on a global scale with important implications at all levels. Indeed, it has reinforced public health issues aimed at protecting the population as nodal elements of the policies implemented by this organization. This research aims to analyze the different organizational communication strategies on Twitter implemented by the main EU institutions during the COVID-19 vaccination campaign, in order to examine the presence of this exceptional milestone. This study has been carried out using an eminently quantitative methodology, based on a content analysis to quantify the different variables and indicators established for the publications of the official profiles of the European Commission, the European Parliament and the European Council. The proposed categories focus on exploring their predominant thematic areas, as well as main purposes/attributed functions. In the light of the results obtained, it is concluded that the vaccination campaign is a milestone with a considerable volume of publications by all profiles. However, among the attributed functions, the distribution of aseptic information has been predominant, which is why it is discussed

whether these institutions have sufficiently taken advantage of the possibilities offered by the digital environment of Twitter for the dissemination of the European message.

### Keywords

**European communication, organizational communication, EU, Twitter, social networks, COVID-19.**

### 1. Introduction

The health emergency caused by the advent of the COVID-19 pandemic, as well as the subsequent global crisis triggered by it, represent an unprecedented milestone in the history of the challenges that the European Union (EU) has had to face recently. If in recent times the supranational policies of the European institutions have been analyzed in relation to the latest “poly-crises” that have occurred within its borders (Brexit, refugees and the euro, mainly), as of March 2020 the EU has made public health the central focus of all its actions (Greer & Ruijter, 2020).

On December 21, 2020, the President of the European Commission (EC), Ursula von der Leyen, announced the provisional authorization granted by the European Medicines Agency (EMA) to the first vaccine, as well as the start date of the vaccination campaign in the Member States. Therefore, on December 27, the first vials patented by BioNTech/Pfizer began to be administered in all European territories (European Commission, 2021). In this context, we seek at assessing in detail the communication strategies in relation to this exceptional milestone, within a framework characterized by the recurrent EU failure in the application of different communication campaigns (Barisione & Michailidou, 2017; Caiani & Guerra, 2017), and whose solution might be addressing a profound reform of organizational communication. In addition to this factor, other authors such as Clark (2014), or Papagiannenas (2017) have highlighted in their studies the manifest incapacity that the EU has shown over time to involve citizens in the communication of the previous major events that have taken place in Europe at different levels. These shortcomings are added to the growing political disaffection developed by citizens towards the European project, which has crystallized in the emergence of manifestly Eurosceptic political parties in certain parts of the continent (Spoon & Williams, 2017).

Against this backdrop, this study addresses the digital organizational communication strategies implemented by the three main institutions of the European Union (i.e., the European Commission, the European Parliament and the European Council) through a tool now considered essential in the field of political and organizational communication: the social network Twitter (Parmelee & Bichard, 2012). Although several scholars in the field have also doubted its effectiveness as a pan-European communication mechanism (De Wilde *et al.*, 2014), some others have recently endorsed its growing potential for the creation of a European communication infrastructure capable of overcoming many of the drawbacks that have traditionally been pointed out (Tuñón & Carral, 2019). Moreover, the current technological context implies multidirectional communication between institutions and citizens (Túñez López *et al.*, 2018). In this sense, no organization can nowadays conceive of a communication strategy that does not involve the use of digital narratives, especially when these networks are specifically adapted to the changing characteristics of new audiences (Scolari *et al.*, 2012). Therefore, it is necessary to embrace emerging technological methodologies in order to analyze strategies whose main characteristic feature is currently hybridization and multiplatform convergence (Guerrero & Scolari, 2016). Moreover, with the undoubted progress of Eurosceptic and populist currents, it is essential that EU institutions focus their attention on developing their own digital narratives linked to the European message they intend to convey to the new generations.

Taking all of the above into account, this research aims to analyze the EU's strategic digital communication with the fundamental objective of discriminating the type of content disseminated and the priorities of its thematic agenda with respect to the vaccination milestone (framing), but also to quantify the different variables that account for its attributed functions derived from the organizational communication strategies used in Twitter and, in a more descriptive way, the application of digital narratives. As for the conceptual framework of the study, the definition of framing proposed by previous research will be taken (Gamson, 1989, 1992; Lakoff, 2004), all of which agree in conceptualizing framing as the idea that frames the essence of a particular issue. The framing perspective, therefore, inescapably focuses on analyzing how issues are constructed at the discursive level in the public sphere.

In order to achieve the objectives proposed, a quantitative content analysis that groups qualitative categories has been developed, combining manual and computerized procedures for systematic data collection, from which trends and patterns of use are extracted. In this way, the main purpose of this research consists on testing the different mechanisms deployed by European supranational bodies to engage their audiences in one of the greatest challenges in contemporary world history.

## 2. Digital organizational communication strategies

### 2.1. Digital institutional campaigns: Twitter

From here on, we will take into consideration the interpretation of organizational communication provided by Andrade (2005), who defines it as “a set of techniques and activities that serve to develop a strategy aimed at facilitating and streamlining the flow of messages between its members and between the organization and the different audiences” (p. 15).

Moreover, the studies carried out by several authors on communication in the public sphere (Jackson & Lilleker, 2011; Parmelee & Bichard, 2012; Gainous & Wagner, 2014; Jivkova *et al.*, 2017) have traditionally focused on politics, voter mobilization and participation, electoral campaigns, or the construction of the public image of the institution in question. Grunig *et al.* (2003), for their part, have already pointed out that the application of concepts such as branding in the external communication plan of any public entity entails important benefits, as it is the different communicative actions coordinated in a strategic manner that result in the generation of a positive link on the part of external audiences.

Public institutions, as well as citizens and private entities, have not escaped the reach of the notorious development in the field of new information and communication technologies (ICT), which has brought with it an unprecedented revolution in terms of communication phenomena and the multilevel transmission of information. Therefore, in recent years it has been possible to move towards a kind of multidirectional communication between organizations and the different audiences that make up civil society, bringing with it the rise of concepts such as citizen participation, transparency and audience feedback over and above the mere unidirectional dissemination of the message (Castells, 2006; Molina Cañabate, 2017; Túñez López *et al.*, 2018).

The proliferation of social networks with different characteristics and attributions, in addition to the growing popularity associated with their creation, have made them decisive in the structure of content generation linked to the phenomenon that various authors define with the term user generated content (Scolari *et al.*, 2012), as well as in the relational dynamics between senders and receivers (Fernández Castrillo, 2014; Duggan, 2015; Sloan & Quan Haase, 2017; Steward, 2017). In any case, the advent of social networks and their rapid development have meant that they now constitute a backbone of organizational communication strategies, especially those aimed at attracting younger audiences and reducing the psychological and geographical distance that distances them from institutions (Gleason, 2018; Carral & Tuñón, 2020).

In this context, although Facebook continues to be the online network with the largest community of registered users on a global scale (Duggan, 2015; Gurevich, 2016), Twitter is the preponderant social network by its very nature both for the debate and implementation of communication strategies of political organizations and for scientific studies in the area of Social Sciences in this field (Fernández Crespo, 2014; Steward, 2017; López Meri *et al.*, 2017). Among other issues, the conclusions of the aforementioned research indicate that the increasing presence of Twitter in the daily agenda of citizens forces public institutions (such as those that make up the EU) to maintain permanent communication fluxes and constant updates, as it has been demonstrated that digital interactions have a notable influence on the offline behavior of organizations and vice versa (Boulianne, 2015; Halpern *et al.*, 2017).

The beginning and subsequent rise of systematic studies on the use of Twitter in the political communication of parties and their leaders (an object of study that would later be extended to governmental organizational communication) is linked to Obama's successful campaign during the 2008 US presidential elections (Núñez, 2009), when the importance of these channels as fundamental intermediaries in the transmission of specific messages created for the purpose of projecting precise concepts to the public about a candidate and mobilizing the vote of certain sectors was confirmed (Jivkova *et al.*, 2017).

Most of the scientific articles and monographs published in this field focus on the study of the different frequencies of Twitter use, the predominant themes addressed by the different messages posted or the motivations that have led to its predominant use by organizations (Bouza & Tuñón, 2018, p. 1240). However, other minority publications have preferred to opt for the analysis of other aspects focused on the main “functions attributed/expected to the social network by organizations” (Carral & Tuñón, 2020, p. 4).

Within the framework of online communication dynamics in social networks, it is also interesting to emphasize the use of new languages and narratives as fundamental elements for the effectiveness of different communicative actions (Maarek, 2011; D’Adamo & García Beaudox, 2016). Therefore, digital narratives linked to the development of ICTs and the Internet are now an indivisible part of the online organizational communication strategies of institutions, having evolved from the first eminently textual attempts to the current multi-platform convergences (Guerrero & Scolari, 2016). In the field of political communication, one of the terms most commonly used to highlight the need for these new forms of communication using emerging technological media has been coined by Antoni Gutiérrez Rubí (2014), “technopolitics.” This research will also focus on evaluating the techno political uses of social networks and the narrative strategies deployed by the EU to communicate the vaccination campaign.

## 2.2. Digital Health Campaigns: Management of Institutional Pandemic and Vaccination Strategies

In addition to institutional communication, it is worth highlighting the vaccination processes at the European level. It has been pointed out that, despite their proven effectiveness in saving lives and containing and eradicating diseases (Andre *et al.*, 2018), vaccines have often remained surrounded by controversy (Dubé *et al.*, 2015) and have even, in many cases, faced frontal opposition (Hornsey *et al.*, 2018). The reasons for this distrust stem, among others, from a postmodern cultural context that questions the legitimacy of science, the pharmaceutical industry, and medical authority (Bertin *et al.*, 2020), and from a number of controversies about the possible negative side effects associated with vaccines.

COVID-19 has attracted the attention of academic literature since its inception, which has resulted in an increase of articles in scientific journals over time. In the field of social networks, which are increasingly used to report on public health measures, attention has focused mainly on what has come to be known as the two pandemics: the coronavirus pandemic and the misinformation pandemic (Tuñón, 2021). However, research has also been conducted from a political and institutional approach (Tuñón & Bouza, 2021).

In this regard, Wu *et al.* (2020) [48] recommended that institutions take into account three strategic principles in their response to the pandemic. First, provide resilience-based leadership. Second, articulate crisis communications to provide the most up-to-date data on the coronavirus and anticipate potential questions from citizens. Finally, provide ongoing support to healthcare workers.

In the specific case of vaccination, scholars have also addressed misinformation, focusing on vaccine reluctance and anti-vaccine movements (Bonnevie *et al.*, 2020). Despite the relevance of social media in political and institutional communication, the literature related to the communicative strategies played by both political actors and public institutions around vaccines is scarce. However, and closely related to the above, there are more numerous works with a more or less broad transnational approach that have focused on the analysis of the acceptance of the COVID-19 vaccine (Sallam, 2021) or the willingness to use it (Neumann-Böhme *et al.*, 2020), also as a consequence of institutional campaigns to promote it.

To the extent that having a vaccine does not automatically imply that it will be used, it is recommended to address the extent of doubts about the COVID-19 vaccine in various countries as an initial step to build confidence in vaccination efforts against this disease.

Therefore, it is important to understand whether or not people are willing to be vaccinated against COVID-19, as this may have important implications for the success of institutional vaccination strategies worldwide, with potentially significant health and economic consequences (Antonini *et al.*, 2022).

The EU institutional strategy and the call for action had to address 27 Member States with different levels of acceptance of the COVID 19 vaccine and willingness to voluntarily receive doses. In fact, countries such as Germany or Spain showed one of the highest levels of vaccine acceptance (Graeber *et al.*, 2021). For example, reliable information from experts and campaigns by health authorities were highlighted as the main factors promoting acceptance and vaccination rates in Germany. Therefore, a close cooperation between health experts, health authorities and mass media in terms of information dissemination is conducive to vaccination campaigns and to the fight against misleading claims about COVID-19 vaccines (Gehrau *et al.*, 2021). Similarly, the recent research by Herrera *et al.* (2021) is worth mentioning. The study analyzes a sample of Spanish-language tweets of the hashtag #yomevacuno published between December 8 and December 23, 2020. Five of the most influential users belonged to official profiles of the European Union (European Medicines Agency) and the Spanish Government (Ministry of Health and La Moncloa). According to the research, institutions should lead public health communication through social networks by providing contrasted information. In contrast, member states such as France and Italy have shown much lower vaccination acceptance rates. For the French case, the analysis of Cambon *et al.* (2022) has identified, among the four pillars of vaccination strategy failure, (institutional) communication on the importance of herd immunity.

In short, it is necessary to refer to online institutional communication on vaccination in the context of the pandemic on a European scale, as already highlighted by Benis *et al.* (2021) in the United States. This research analyzes intentions towards vaccination against COVID-19 on networks, including Twitter, and highlights the importance for governments to include social media as part of their communication strategy to convey information about vaccines, build trust in vaccines and thus increase vaccination rates.

### **3. European Union communication and transnational European discourse**

Based on the above premises on organizational communication in social networks, the aim here is to transpose this conceptual framework to the supranational organizational communication actions carried out by the EU institutions. Although transnational approaches to organizational communication and public relations are still far from commonplace in academia (especially when it comes to governmental information), this research ascribes to Canel and Sanders' (2012) conceptual prerogatives of symmetrical communication, reputation and branding as viable alternatives for effective European communication.

Indeed, the fields of comparative politics, international relations or political communication, have also traditionally not lent themselves to the analysis of transnational perspectives on the communication of European political organizations. This is why this study follows in the footsteps of some others, whose main objective is to fill the existing theoretical gap in this area, based on theoretical approaches that address this phenomenon from different points of view from different disciplines (Valentini, 2006; Gullo & Tuñón, 2009; Cervera Crespo & Cruz Rodríguez, 2010; Brüggemann & Wessler, 2014). In the same vein, it should also be noted that the study of organizational communication in public institutions within the social sciences suffers to some extent from a theory of overreaching that limits the methodological paradigms to be followed or the level of analysis to be approached (Graber, 2003). Therefore, as we intend to proceed in this research, the most reasonable approach is to follow different multidisciplinary theoretical approaches related to the application of milestone studies to European communication (Gower, 2006; Canel & Sanders, 2012).

Firstly, it is worth arguing that several authors have highlighted the failure of the communication policy followed by the EU in light of the latest “poly-crisis” that have occurred within its borders in recent times (the most pressing until the arrival of COVID-19 had been those already mentioned of Brexit, refugees or the euro), altering the future of the system of international relations and also those between member states (Papagiannenas, 2017; Tuñón, 2017; Tuñón & Carral, 2019). This is why the operability of European communication, in general terms, has been widely discussed (De Wilde *et al.*, 2014; Barisione & Michailidou, 2017; Caiani & Guerra, 2017).

For them, this failure of the EU’s institutional organizational communication highlights the fact that effective European political communication must necessarily involve a profound reformulation of the same, emphasizing central issues such as the creation of a European public sphere, the identity crisis, the fragmentation derived from the conflict of multilingualism, the challenge currently represented by Euro-myths (now renamed fake news), grassroots communication and the application of European branding itself. Seoane (2013), moreover, agrees that the different structural shortcomings of European political communication are due to the way in which the EU itself has been constructed and governed, as well as to the type of community it has generated, characterized by a decisive lack of identification with European affairs.

In addition to these issues, some of the theoretical expectations faced by this study regarding the factors involved in the lack of homogenization of the European message are related to inter-institutional competition, a lack of hybridization in terms of the distribution of information referring to European public policies and, finally, a multiplicity of speakers communicating different messages, all of them lacking a common communicative strategy (Papagiannenas, 2017; Tuñón, 2017; Tuñón & Bouza, 2021; Fazekas *et al.*, 2020).

European communication, therefore, is not a trivial issue, because if the public institutions belonging to the governments of the Member States have the obligation to transmit information related to European affairs to citizens, the EU itself must respond to their actions in the same way, through the different online and offline platforms available for this purpose (Scherpereel *et al.*, 2016). In short, despite the fact that the above obstacles listed by scholars in the field place the EU at a crossroads in the field of organizational communication, the necessary opening of its communication policy towards emerging technological methodologies constitutes a unique opportunity to modernize, segment and unify the message, redirecting it appropriately according to the characteristics of the new audiences (Hänska & Bauchowitz, 2019).

#### **4. Research objectives and hypotheses**

The main objective of this research is to analyze the digital organizational communication strategies implemented by the main EU institutions on Twitter during the key months of the COVID-19 vaccination campaign.

This general objective is further broken down into the following specific objectives:

- O1. To determine the frequency of Twitter use and the predominant thematic areas (frames) in each profile during the period studied, in order to verify the centrality of this milestone in their communication strategy.
- O2. To investigate and explore in depth how these profiles have articulated the use of the potential, capacities and functions attributed to this social network to carry out digital communication on the vaccination milestone.

Based on the objectives set for this research, the following two hypotheses are established:

- H1. the main EU institutions have given notable importance to organizational communication strategies on Twitter through digital narratives to disseminate the vaccination campaign milestone, with this issue constituting one of the main axes of their thematic agenda.

- H2. as in other previous crises, these institutions have prioritised the distribution of aseptic information on this milestone as the main purpose of their publications, without carrying out a real campaign that appealed to citizen mobilization on Twitter in favour of vaccination.

## 5. Data and methods

In order to proceed in an adequate manner to contrast the different hypotheses put forward, the use of methodological approaches of a quantitative nature is favored. The central method on which this study is based is content analysis, as it is the most appropriate technique for carrying out a descriptive and interpretative analysis of the manifest or latent content of the messages broadcast (Eiroa & Barranquero, 2017), allowing for the subsequent establishment and generalization of the different explicit and implicit digital communication patterns (Iyengar & Simon, 2000). Moreover, its reliability and reproducibility has been confirmed by several authors, and it has become the predominant technique for communication studies (Wimmer & Dominick, 1996; Martínez Nicolás, 2008).

In the first instance, a preliminary analysis and floating reading of the digital organizational communication content published by different European institutional profiles on the social network was carried out in order to narrow down the sample of publications to be coded. For this purpose, purposive sampling techniques have been used, from which the Twitter accounts to be studied have been delimited, following two fundamental criteria: the observation of the number of followers (and, therefore, potential reach) and the level of importance of the profile in question within the organization chart of the European institutional network. Therefore, the analysis of publications is limited to the profiles of the European Commission (@EU\_Commission; 1.5 million followers), the European Parliament (@Europarl\_EN; 767,600 followers) and the European Council (@EUCouncil; 596,000 followers), during the first three months of the vaccination campaign: from December 21, 2020, to March 27, 2021. In total, 1,014 tweets were counted (N=1,014), during the 97 days covered by the aforementioned period. The sample selected responds to the main objective of this research, as it is a question of exploring the communication strategies of digital organization during the months of the start of the aforementioned campaign and not only those aimed at directly communicating aspects of the campaign. This framework is established since in the pretest and floating reading phase it was concluded that the tweets explicitly aimed at the vaccination campaign are complemented by those which, also linked to the pandemic context, address issues of vital importance for the success of the campaign. Therefore, establishing specific filters or hashtags could distort the conclusions of the study and the rest of the thematic areas enrich the results on the digital organizational communication strategies employed in this period. It should also be noted that the coding has been carried out only with publications in English, as the objectives of this work are linked to the evaluation of a series of indicators present in the transnational public space. In order to carry out monthly comparisons between the periods that make up the quarter, it has been decided to divide it into three uniform sub-periods.

This temporal determination is justified by the concurrence of several factors: on December 21, 2020, the EMA grants provisional authorization to the first BioNTech/Pfizer vaccine, with the subsequent speech by the President of the Commission, Ursula von der Leyen. It is therefore significant to take into account the week prior to the start of vaccination in terms of organizational communication, as its mechanisms are activated from this first public intervention. In any case, the first doses were administered in the Member States on December 27th. The two key milestones of this campaign were also covered during the three consecutive months. One is the approval of the main vaccines currently in circulation (BioNTech/Pfizer, Johnson & Johnson-Janssen, Oxford-Astrazeneca and Moderna). On the

other hand, there are also the two crises with the greatest institutional resonance: the EU's opacity in export contracts to third countries and the adverse effects caused by Astrazeneca.

Once the sample of publications had been delimited, the different categories of analysis were defined in the relevant coding protocol, which incorporates qualitative indicators corresponding to the different theoretical expectations and hypotheses to be evaluated. This has been drawn from the available material provided by previous studies in the field of organizational and/or political communication (in particular, Pfetsch *et al.*, 2010; Congosto, 2015; Calvo *et al.*, 2017; Tuñón & Carral, 2019; Tuñón & Catalán, 2020). Specifically, the protocol defined for the predominant thematic areas (Table 1) is defined by previous research that has defined similar categories to address the digital organizational communication of European institutions and political parties (Pfetsch *et al.*, 2010; López Meri *et al.*, 2017; Tuñón & Carral, 2019). For the attributed functions (Table 2), a series of mutually exclusive variables have been generated from the findings of previous studies in the field of political and organizational communication whose analysis protocol contained the variables determined for this study (Parmelee & Bichard, 2012; Gainous & Wagner, 2014; Jivkova *et al.*, 2017; Bouza & Tuñón, 2018). Finally, in order to define the variables belonging to the formal/hypertextual dimension, due to their specificity, the postulates contributed by research focused on digital narratives in social networks have been considered (Guerrero Pico & Scolari, 2016). However, in order to establish the categories related to the COVID-19 milestones and vaccination, it has been necessary to extract them conceptually ad-hoc, based on the examination of the material studied in the pre-analysis phase, in order to exhaust all possible casuistries and not to overlook any relevant indicator for the research. These categories were examined and subjected to a detailed evaluation by experts and researchers in organizational and digital communication, using a Likert scale to assess their relevance, with an average score of 4 out of a possible 5 points. In this way, it was possible to obtain and narrow down the categories corresponding to the predominant thematic areas, the attributed purposes/functions of the publications and the typology of content (in its formal/hypertextual dimension). Likewise, to calculate the intercoder's reliability, the Cohen's Kappa statistical measure was applied, a formula commonly used in the field of communication studies to measure the degree of agreement between two researchers who carry out the coding protocol in the framework of a qualitative content analysis (Oleinik *et al.*, 2014). In this case, the sample was coded independently by the two researchers who signed the study. This coefficient was calculated for each of the three variables, the categories of which are mutually exclusive: predominant subject areas, attributed functions and formal/hypertextual strategy. The first and second variables yielded a similar result of  $K=0.7$ , with the indicator increasing in the third case to  $K=0.8$ . Considering that the maximum degree of agreement between the two researchers would be  $K=1$ , the interpretation of the above figures allows us to endorse the validity of the established coding protocol.



**Table 1.** Coding protocol of predominant thematic areas.

<b>PREDOMINANT THEMATIC AREAS</b>
01. COVID-19 (general)
02. Vaccination campaign
03. EU-Member States Relations
04. EU-Citizen Relations
05. Economic policy
06. Social policy (education, migration, gender, social rights...)
07. Digital transition
08. Identity/belonging
09. Environmental policy (energy, agri-food, ecologism, sustainability...)
10. European foreign policy
11. European regulation
12. Other frames (cultural policy, civil society...)

Source: Own elaboration.

**Table 2.** Coding protocol of attributed purposes/functions.

<b>PREDOMINANT ATTRIBUTED PURPOSES / FUNCTIONS</b>
01. Distribution of general information of the development and degree of implementarion of the vaccination campaign
02. Epidemiological information (COVID-19)
03. Political agenda
04. Call to action/mobilization of European citizenship
05. Achievements
06. EU policies/program
07. Emotional exaltation
08. Service information (administrative procedures and formalities)
09. Other purposes (self-promotion, branding...)

Source: Own elaboration.

**Table 3.** Coding protocol of formal/hypertextual dimension of the publications.

<b>CONTENT (FORMAL/HIPERTEXTUAL DIMENSION)</b>
01. Text and link to their own website without multimedia elements
02. Text and link to their own website with multimedia elements (web cards or similar formats)
03. Text and link to communication media
04. Text and photographic/infographic material
05. Text and audiovisual multimedia (video/audio)
06. Only text
07. Text and link to other websites

Source: Own elaboration.

## 6. Results

First of all, the general results of the comparative study will be presented in relation to the different variables, in order to obtain some initial indicators that allow a comparison between the three institutions. In the following three sub-headings, to facilitate the analysis and subsequent comparison of the different indicators, the results corresponding to the specific sample fraction of the vaccination campaign are presented in relation to the overall percentages of the complete sample for each institution.

With reference to the predominant thematic areas, the vaccination campaign emerges as the topic with the highest number of tweets in the total sample, accounting for 21.9% of the publications (see Annex 1 for full results). The percentages maintain the same proportions in the samples relating to the different institutions, except in the case of the European Council, which only accounts for 14% of the tweets posted by the profile, with a much higher number of publications dealing generically with different aspects related to COVID-19 (24.4%). The vaccination campaign is not the most adopted frame by the European Parliament either, surpassed in this case by tweets addressing relations between the European Union and citizens (25.5%).

In terms of the functions attributed, the distribution of general information on the vaccination campaign or on the epidemiological situation of the COVID, both in the total sample and in the different institutions, are in low percentages that in no case exceed 15% of the corresponding totals. The three institutions prioritize the objectives of informing about European Union policies and programmes (42.2%; 44.6%; 39.9%) in the different thematic areas mentioned above. On the other hand, publications aimed at making a call to action by appealing directly to users, as well as those that clearly aim at emotional exaltation, have much lower percentages (10.7%; 15.3%; 8% and 5.9%; 9.6%; 6.1%, respectively).

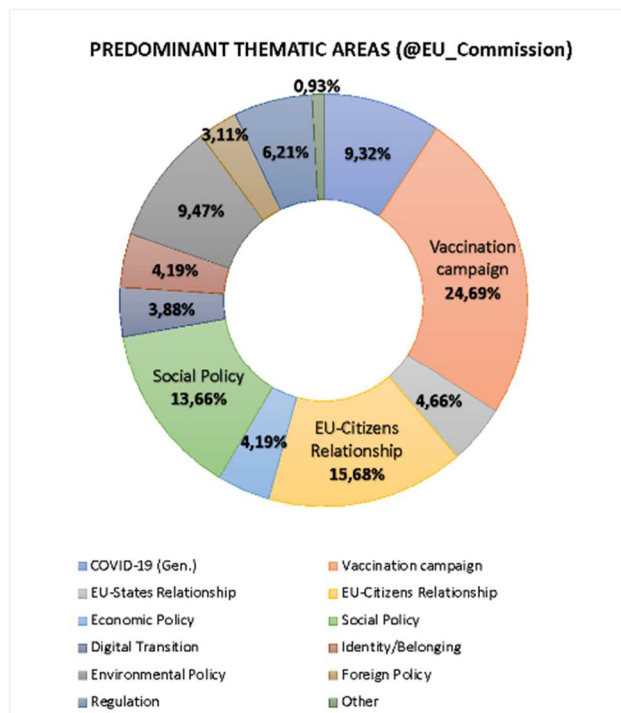
Finally, the results on the formal/hypertextual dimension of the publications reveal that the predominant publication format in the three institutions is webcard: a content structure through which the profiles include text, links to their own websites and multimedia elements in the tweets (55.4%; 66.9%; 75.6%). Therefore, from the point of view of the formal strategy of message elaboration, the institutional accounts studied take advantage of Twitter's potential by articulating their content around the digital narratives allowed by the platform.

### 6.1. European Commission (@EU\_Commission)

This institutional profile has the highest posting frequency during the period under study, with a total of 644 tweets and an average of 6.71 tweets per day. In addition, its potential reach is determined by its high number of followers, amounting to 1.5 million. The distribution of messages over the three-monthly periods analyzed has remained stable, with 206, 205 and 233 posts respectively. In the same order, each month accounted for 31.99%, 31.83% and 36.18% of the overall total of tweets, with the last monthly count in February–March constituting a slight peak.

In terms of the predominant thematic areas, the vaccination campaign emerged as the main focus of the publications, with a total of 159 tweets dedicated to this issue. This is by no means a majority percentage, nor is it excessively distant from the rest of the topics that form the backbone of the conversation, as it is positioned as the leading topic, accounting for 24.69% of the total number of messages. This is followed by those tweets dealing with the European Union’s relations with citizens (15.68% of the total) and those on social policy (13.66%). The rest of the variables maintain their contribution below 10%, including the one that groups together messages that deal generically with COVID-19 in its different dimensions.

**Figure 1.** Distribution of tweets from the European Commission with respect to the predominant thematic areas.



Source: Own elaboration.

During the first month, the publications on this campaign came to occupy a much more privileged position, constituting 42.72% of the total number of tweets that the institution published with respect to the monthly total. Moreover, it maintained a much more pronounced distance from the next category, “EU-Citizen Relations,” which remained in second position with 10.68% of the publications. In the second month, the percentage of posts dedicated to this campaign dropped drastically, by 50% compared to the previous period, practically halving (21.46%), while the percentage of the second variable listed above increased notably, reaching 17.07%. In the last monthly period, despite the crisis of confidence with which the EU had to deal (caused by the aforementioned adverse effects of the AstraZeneca

vaccine), this percentage continued to fall steadily by almost another ten percentage points (11.59% of the total number of tweets published during the month), being surpassed by the indicators “EU-Citizen Relations” and “Social Policy” (both with 18.88% of the total).

The formal strategies used in the publications on the vaccination campaign show a similar division to the general one: from the total number of publications on this subject, 45.91% of the total number of tweets on vaccination are made up of text, links to their own website and multimedia elements, 23.27% use only photographic or infographic elements in addition to the text itself, and 27.04% tweets combine a combination of text and the insertion of a video (see annex 2 for consulting the publication format most commonly used by each institution for publications on the vaccination campaign). Therefore, with respect to the overall totals, the dissemination of messages with photographs and infographics decreased slightly and those in which the reproduction of audiovisual material was inserted alongside the text increased by almost ten percentage points. For the most part, these pieces consist of small audiovisual pills with information on how the different vaccines work. On the other hand, 89.93% of the messages on this thematic area use tags or hashtags.

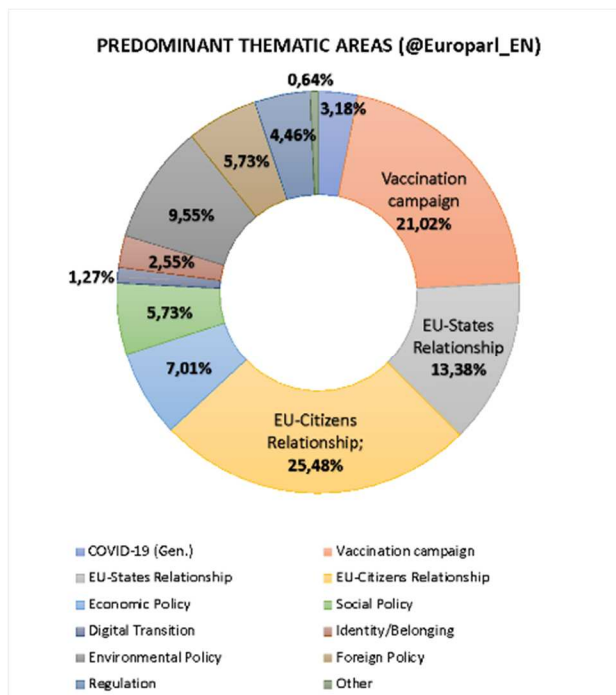
In terms of the purposes and functions attributed to the coded sample, of the 159 publications linked to the vaccination campaign, 47.7% are dedicated to the distribution of general information about the development of this process within the EU. With much lower percentages with respect to the general average are the messages that aim to highlight the implementation of certain supranational policies or programs related to this milestone without being specifically related to the informative purposes of the first group (15.72%), although in relation to the general average of publications, those that aim to directly mobilize citizens for an effective mass vaccination increase slightly (14.47%).

## **6.2. European Parliament (@Europarl\_EN)**

The profile of the European Parliament had 771,800 followers (at the time of data extraction) and a total of 157 publications during the months studied. Its posting frequency is the lowest of the three profiles, with a daily average of 1.64 tweets. This has been increasing over the months, with a distribution of 38, 52 and 67 posts in each month, contributing respectively 24.20%, 33.12% and 42.67% to the overall total of tweets. The growth is sustained and upward in each of the monthly periods, increasing by around nine percentage points with respect to the previous month.

In terms of thematic areas addressed, the vaccination campaign is the second highest number of publications (21.02%), surpassed only by those grouped under the indicator “EU-Citizen Relations” (25.48%). Behind these are, with significantly lower percentages, publications dealing with the EU’s relationship with the different member states (13.38%), environmental policy (9.55%), and economic policy (7.01%).

**Figure 2.** Distribution of tweets from the European Parliament with respect to the predominant thematic areas.



Source: Own elaboration.

The monthly evolution obtained with reference to the dissemination of publications focused on the different areas of the vaccination campaign is particularly significant. 66.66% of the messages under this heading are published during the first period of December-January, which represents, however, the monthly period with the lowest overall frequency of publication of the three studied. The drop is sustained during the two consecutive months, with the second month recording almost half of the publications on this topic (36.36%). The number of messages fell by half in the third month (18.18%).

The hypertextual/formal dimension of the publications on vaccination continues and, to a certain extent, endorses the general trend, following a strongly unified strategy based on two types of messages: one grouping textual elements, multimedia and links (63.64%) and the other including the dissemination of videos (33.33%). On the other hand, only 12.12% of the total number of publications issued under this theme use some kind of hashtag (see annex 2 for consulting the publication format most commonly used by each institution for publications on the vaccination campaign).

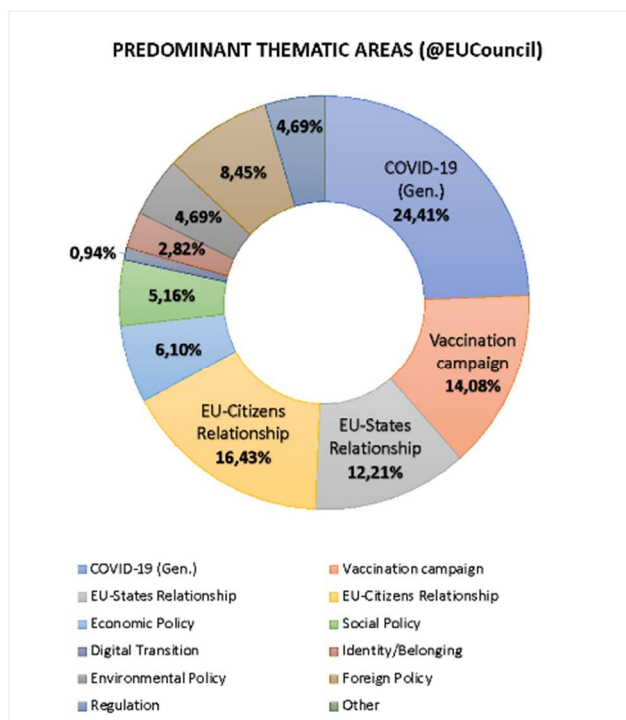
With regard to the main purposes or attributed functions detected in this theme, the one that stands out is mainly aimed at distributing general information about the degree of implementation and development of the vaccination campaign itself (69.70%), followed to a much lesser extent by those messages focused on mobilizing citizens (9.09%) or reporting on the political agenda (6.06%). The number of messages related to the dissemination of specific EU policies or programs, other than those aimed at informing about the development of the campaign, is significantly lower than the general average. Although this category accounts for 44.59% of the total number of tweets published in the three months, it only corresponds to 2 messages categorized as vaccination (barely 6% of the total number of publications on the subject). Both posts are linked to possible future strategies and programs to distribute vaccines produced within the EU more equitably and effectively in third countries, in the framework of a debate held in the European Parliament during an appearance by Emer Cooke, the executive director of the EMA, on 26 January 2021 (see annex 3).

### 6.3. European Council (@EUCouncil)

Finally, the profile of the European Council has 604,000 followers and an average posting frequency of 2.22 tweets per day. Over the entire period under study, the absolute number of the sample amounts to 213 publications. The monthly contribution to the total is uneven over time, with 52, 64 and 97 messages issued in each of the months (24.41%, 30.05% and 45.53% of the total number of tweets published by this account, respectively). Therefore, there is an upward trend with reference to the frequency indicator, with the last month accounting for almost half of the publications.

The thematic areas reveal a less central position for the specific framing of the vaccination campaign with respect to the main theme of this account, led by information related to general aspects of the COVID-19 pandemic (24.41%). This is followed by the group of publications dealing with the EU's relationship with citizens (16.43%), and the aforementioned campaign, in third place (14.08%). In any case, vaccination continues to be one of the main thematic axes on which this account disseminates content. The temporal distribution of messages with this framework is concentrated in the first month (66.66% of the total number of publications on this topic), followed by the third month (23.33%). During the second period, only 10% of tweets are published on this campaign.

**Figure 3.** Distribution of tweets from the European Council with respect to the predominant thematic areas.



Source: Own elaboration.

The formal dimension from which the publications on vaccination are articulated does not differ greatly from the general percentages of the profile: 76.66% of the messages belonging to this frame are in the second category, combining textual elements, multimedia and links to their own website. On the other hand, 10% contain only text, and 6.67% combine text and video clips. The rest of the indicators remain with eminently marginal scores. In addition, 24 tweets use some kind of tag or hashtag, 80% of the total number of publications under this thematic line (see annex 2 for consulting the publication format most commonly used by each institution for publications on the vaccination campaign).

The functions attributed to this group of publications stand out for maintaining a mainly informative purpose, as 19 of them are aimed at distributing general information on the implementation of the vaccination campaign (63.33% of those with this framework and 8.92% of the overall total). Behind, 10% aim to inform about political agenda issues, and another 10% have the function of bringing the public closer to possible future EU programs regarding the distribution of vaccines. Only 3.33% directly appeals to citizen mobilization, explicitly encouraging users to go to the vaccination points established by the different Member States.

## 7. Discussion and conclusions

The main point of discussion of the research consists of contrasting the different hypotheses formulated, while at the same time highlighting the main evidence of the present study: although it is true that the thematic area of the vaccination campaign is very present in the publications of the sample, these institutions have not focused their discourse on calls to action aimed at their audiences, nor have they been challenged towards a pro-vaccination citizen mobilization.

Firstly, the results analyzed above allow us to validate Hypothesis 1: the main EU institutions have given considerable importance to organizational communication strategies on Twitter through digital narratives to disseminate this milestone, making this issue one of the main axes of their thematic agenda. In all three accounts, the frames related to the vaccination campaign remain in the top positions, albeit unevenly. In the case of the European Commission, this is the category with the highest percentage of the sample (159 tweets / 24.69%), while in the European Parliament it is the second topic with the highest volume of messages (33 tweets / 21.42%), and in the European Council it is the third most published topic (30 tweets / 14.08%). Despite their notable difference in terms of frequency of use of this social network (with an average of 6.71, 1.64 and 2.22 tweets per day during the period studied, respectively), the percentage results attest and endorse that these institutions have given significant relevance to the communication of this milestone by means of digital strategies on Twitter, since a total of 12 thematic frames have been counted and in none of the three accounts studied does the volume of publications corresponding to vaccination represent marginal or minority percentages. In this sense, it should be noted that these results are in line with the techno political uses highlighted by Gutiérrez Rubí (2014) and Jeppesen (2021), implemented by these institutions in their strategic communication through social networks. An exhaustive comparative analysis of the content disseminated in the different social networks where these profiles have a presence would be necessary to determine whether, as authors such as Steward (2017) or Jivkova *et al.* (2017) state, the use of Twitter has been privileged over the rest of the platforms available for the implementation of these strategies.

In another sense, the diversity of techniques used in the formal construction of the different publications described in the previous section confirms that the main institutions of the European Union take into account the new digital narratives in the articulation of their online organizational communication strategies. Their use is certified insofar as all the accounts rely on the different hypertextual, visual and audiovisual elements available on the social network. Following the same order as in the previous paragraph, 45.91% / 63.64% / 76.67% of the total publications of each account that deal with vaccination incorporate all the formal and narrative elements available on the social network: the text of the publication, a multimedia element and a direct link to its website.

This finding broadens the field of study for future research that emphasizes this phenomenon, since in the light of the evidence presented in this and other recent research, a progressive evolution can be seen in terms of the deficit in the use of new digital narratives pointed out by Papagiannas (2017) or Bouza & Tuñón (2018). For their part, Krzyżanowski (2018) or Tuñón, Bouza & Carral (2019) already report an incipient professionalization of online communication by European institutions. In line with these postulates, the results

described here could confirm a certain overcoming of their professional deficits in online communication. However, on the other hand, other studies should not be overlooked, as they still reveal a certain conservatism in the European Union's digital strategies, as well as a negligible volume of responses from these institutions to users of social networks who comment on their publications (Belluati, 2020; Rivas de Roca, 2020). This disparity and certain ambivalence between the two trends suggests further studies to analyze in detail the specific typology of digital narratives implemented by EU institutions during current and future events of transnational importance. In this way, it will be possible to continue recording progress and setbacks in their digital communication policies. Moreover, further research focusing on the specificity of the digital narratives implemented by these institutions in the context of Twitter will make it possible to corroborate or refute the analysis carried out by different authors regarding a definitive professionalization in the dissemination of the European message through this channel. Another alternative approach that goes beyond the scope of this research is to combine the above with an in-depth qualitative review of the different texts and multimedia elements on the vaccination campaign from the point of view of Health Communication, in order to assess their relevance from this other perspective.

With regard to Hypothesis 2 (these institutions have prioritized the distribution of aseptic information on this milestone as the main purpose of their publications, without carrying out a real campaign that appealed to citizen mobilization on Twitter in favor of vaccination), the results analyzed allow us to conclude that, despite the high volume of publications on the subject, these institutions have not focused their discourse on calls to action aimed at their audiences, nor have they been challenged towards a pro-vaccination citizen mobilization. The main function attributed to these institutions was that of distributing general information, in an aseptic manner, on the composition of vaccines and the development of the strategy launched at the end of December 2020.

Following the above order, 47.7% of the publications with this framework of the European Commission have this purpose, together with 69.70% corresponding to the European Parliament and 63.33% to the European Council. The number of publications aimed at making this call to action or mobilizing European citizens is much lower (14.47% / 9.09% / 3.33% of the total number of tweets on the subject, for each of the accounts). These indicators, together with the comparative analysis of the temporal distribution of the publications on this thematic area, allow us to certify and corroborate the above hypothesis. The latter distribution shows that during the biggest crisis of confidence in vaccines caused by Astrazeneca's adverse effects (in March 2021), only the European Council posted more frequently (from 3 to 7 tweets with this thematic framing, compared to the previous month), while the European Commission and the European Parliament continued their steady decline, both with fewer posts on the campaign than during the previous monthly period.

In any case, the validation of this hypothesis does not contradict what was argued above for the first hypothesis. The EU institutions have taken advantage of the potential of Twitter in the elaboration of their communications, making use of the multiple publishing tools available on the platform. However, the strategic direction of their discourse has consisted primarily in the distribution of aseptic information on the development of the vaccination campaign, and not in the promulgation of messages constructed as a call to action that would directly appeal to a favorable mobilization of European national public opinion. In this sense, the exposed results align with one of the issues argued by Caiani & Guerra (2017) and Papagianneas (2017) that need to be reformulated within EU institutional communication, namely the absence of a real mobilization campaign against a major event such as Brexit. However, more recent studies such as the one carried out by Rivas de Roca (2020) on the 2019 European Parliament elections suggest that the EU planned political communication strategies on Twitter with the aim of overcoming its structural problems, encouraging the politicization of EU events to promote voting under the slogan "This time I'm voting." However,



this attempt to politicize European affairs in their online communication strategies to involve citizens contrasts with the conclusions drawn in the same study, which once again reveal the low degree of achievement of these objectives, especially in those member states most affected by the different crises that have occurred in recent years. Following this argument, the research carried out here on the vaccination campaign continues to highlight the obvious shortcomings of the digital communication strategies implemented by the EU when it comes to effectively involving and mobilizing European citizens, prioritizing the use of Twitter and digital narratives for information purposes and without taking into account the decisive potential of this social network for the creation of interpretative frameworks on a given issue.

The hypothesis testing was also subject to certain limitations. This research was carried out with the aim of analyzing the digital communication strategies on Twitter implemented for a campaign that was still ongoing at the end of the study. Therefore, the results may be affected and their validity limited by strategic modifications that may have arisen during successive periods. In any case, it is worth noting that during the process of narrowing down the sample (in the first phase of pre-analysis) it was possible to observe superficially how the publication trends during April and May continued the patterns found during the months finally chosen, with no major events of great resonance that altered the strategic digital communication implemented by the EU for this campaign.

In short, this study has allowed us to conclude the proven intentionality of the major European Union institutions to incorporate the vaccination milestone into the strategic thematic agenda of their Twitter profiles, amply demonstrated by the high volume of publications on the subject using various elements of the digital narratives provided by this social network. Despite this, their attributed functions have been based on the distribution of aseptic information, rather than carrying out a real call to action and politicization of the issue. The results, therefore, show that many of the traditional shortcomings identified by various authors with regard to the management, broadcasting and dissemination of the European message are still present. A future line of research from which we intend to complement and contrast this study will attempt to establish the relevant comparison of these data with those obtained by the profiles of the different offices corresponding to these institutions present in the different Member States, with the aim of analyzing whether these shortcomings are still present in these profiles or whether different discourses and strategies have been articulated with respect to the communication of the vaccination campaign. Furthermore, transcending this first descriptive dimension, the results obtained are intended to be contrasted in future research work with the different digital engagement indicators obtained for each of the profiles, as they are essential metrics for verifying the degree of effectiveness of the digital organisational communication strategies implemented by the profiles of the different institutions to disseminate the vaccination campaign.

This article is part of both European Chairs funded by the Education, Audiovisual and Culture Executive Agency (EACEA), belonging to the European Commission, Jean Monnet (Erasmus+), “Future of Europe Communication in times of Pandemic Disinformation” (FUTEUDISPAN), Ref: 101083334-JMO-2022-CHAIR) <https://www.uc3m.es/research/futeudispan>, directed between 2022 and 2025, from the University Carlos III of Madrid, by Jorge Tuñón. However, the content of this article is the sole responsibility of the authors and EACEA cannot be held responsible for any use which may be made of the information contained therein.

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## Annex

General results - total sample/three sub-samples.

<https://www.doi.org/10.6084/m9.figshare.22780031.v3>

Publication format most commonly used by each institution for publications on the vaccination campaign. <https://www.doi.org/10.6084/m9.figshare.22780094.v1>

Live broadcast of Emer Cooke's hearing on January 26, 2021.

<https://www.doi.org/10.6084/m9.figshare.22780109.v1>