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The UME on X/Twitter: strategic communication and national security in the forest fires of 2025

Abstract

This article analyses the strategic communication of the Military Emergency Unit (UME) on X (formerly Twitter) during the forest fires that affected Spain in July and August 2025, in one of the most serious episodes in recent decades. The study is based on the premise that institutional communication on social media is a fundamental resource for reinforcing transparency, legitimacy and public trust in crisis situations that compromise national security.

The corpus of analysis includes 175 tweets published by the official @UMEGob account, collected through scraping and examined using a mixed approach. A descriptive analysis of frequency and engagement was carried out, along with a thematic classification adapted to the literature on crisis communication and a semantic analysis using Graphext data analysis software.

The results show that the UME's communication strategy was eminently reactive and operational, with peaks of activity coinciding with the most serious moments of the fires. Informative messages about deployments and resources predominated, obtaining the highest level of citizen interaction. Institutional values and territorial references reinforced the legitimacy of the institution. However, the scarcity of preventive messages indicates an approach focused on immediate response rather than citizen preparedness.

Keywords

Strategic communication, Social media, Climate emergencies, National security, Information dissemination

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I Introduction

In recent decades, forest fires have become one of the main strategic threats in Spain, both because of their environmental and social impact and because of their implications for national security. According to data from the Ministry for Ecological Transition and Demographic Challenge (Romero and Camarasa, 2025), Spain is among the European countries most affected by this type of emergency due to its Mediterranean climate, rural depopulation and the accumulation of plant fuel, factors that increase vulnerability to extreme conditions.

The summer of 2025 highlighted the magnitude of the challenge: more than 400 000 hectares were burned between July and August, making it the worst scenario in decades (Planelles, 2025). A report by World Weather Attribution (Devereux, 2025) attributed this extreme episode to climate change, noting that heat waves and atmospheric dryness increased the probability of conditions favourable to the spread of fires on the Iberian Peninsula by up to forty times. These conclusions coincide with scientific literature warning of the growing link between global warming and the intensification of natural hazards in the Mediterranean area (San-Miguel-Ayán *et al.*, 2023; Turco *et al.*, 2018).

The human and material consequences were significant: thousands of people evacuated, infrastructure destroyed and damage to protected ecosystems. In addition, the crisis took on a political dimension, generating debates about the adequacy of resources, institutional coordination and the role of the Armed Forces in disaster response (Pizarro, 2025). In this scenario, the Military Emergency Unit (UME) positioned itself as a key player, deploying thousands of personnel and technical resources; its role was not only operational but also communicative, given that in crisis situations official information is a strategic resource for reducing uncertainty, legitimising government action and strengthening social cohesion (Coombs, 2015; Frandsen and Johansen, 2016).

It is worth placing this role within a broader framework. During the fires of 2025, units from the Army, Air Force, and Navy also intervened, resulting in a joint action by the Armed Forces in support of civil emergency management. In this operational framework, the UME served as the main communication liaison, acting as a visible and centralised channel for public information.

In this sense, social media has transformed the crisis communication ecosystem. Social network X, in particular, allows for immediate, two-way, wide-reaching dissemination, making it an essential tool for public and security agencies (Austin and Jin, 2022). Since its inception in 2006, this platform has established itself as one of the main digital spaces for governments and institutions (Castillo-Esparcia *et al.*, 2020). Despite this, its use poses challenges related to dialogue management, the credibility of sources and the proliferation of disinformation (Rodríguez and Ortega, 2025).

Analysing the UME's communication strategy in this context is particularly relevant because academic research on institutional military communication in large-

scale emergencies remains limited. Although there are studies on security forces and civil protection, the communication activities of specialised military units such as the UME have received less attention. This article contributes to filling this gap by offering empirical evidence on how the institutional narrative is articulated during a crisis that directly compromises national security.

Therefore, we propose to study the communication developed by the UME on its official X channel during July and August 2025, with the aim of evaluating its effectiveness as a strategic communication tool in the management of crises linked to national security.

2 Theoretical framework

2.1 Institutional communication in critical contexts

Institutional communication in crisis contexts has grown in importance over the years and with the evolution of hyperconnected societies, as it has become an essential tool for transmitting information quickly, clearly and effectively to the public. In emergency situations—such as natural disasters, pandemics, or social crises—public institutions act as reliable sources of reference and play a decisive role in information management (Pulido-Polo *et al.*, 2021).

Situational Crisis Communication Theory (SCCT), initially developed by Coombs (2015) and expanded by various researchers following the COVID-19 pandemic (Chen and Holladay, 2023; Haupt, 2021; Macnamara, 2021), provides a useful framework for understanding the logic of communication in critical scenarios. This theory emphasises the need to adapt communication strategies to circumstances, to carefully manage the institutional narrative and to make appropriate use of official channels.

Along these lines, Cannaerts (2020) highlights that effective communication requires diversifying messages according to the stages of the crisis and the different stakeholders, as well as ensuring coordinated use of internal and external media tools. Social media has become an essential resource for this type of communication. According to Hagen *et al.* (2018), these platforms allow messages to be disseminated in real time and facilitate direct interaction with citizens, which is crucial for answering questions and reducing uncertainty at critical moments.

Poell *et al.* (2019) frame this phenomenon within the logic of platformisation, understood as the process by which digital platforms reconfigure infrastructures and social, cultural and economic processes, generating new opportunities but also challenges for the institutional sphere. Similarly, Viola *et al.* (2021) emphasise the need to consider audience connectivity and participation, encouraging synchronous interaction and the use of relational messages that promote consistent behaviour and reduce the gaps between available information and citizen practices. Based on the case of the pandemic, the researchers highlight the relevance of media literacy and the impact of asymmetric information on the effectiveness of institutional messages.

According to Mayo-Cubero and Chivite (2023), crisis communication can be understood as the set of strategies designed by public bodies to inform, guide and reassure the population affected by an adverse event. Its essential characteristics include immediacy, reliability, accessibility and empathy, the latter being a key element in strengthening relations between institutions and citizens and improving both reputation and crisis management.

The purpose of communication in critical situations is to reduce uncertainty, provide relevant information, strengthen social trust and promote citizen action (Mwandembo, 2024), which requires institutions to establish themselves as reliable sources and maintain strategic control over the narrative they convey through official channels.

In this area, research has identified different communicative functions that are often articulated in institutional responses: operational or informational messages, focused on actions and resources; preventive or educational messages, aimed at citizen preparedness; adjustment or recognition messages, which integrate empathy and emotional support; institutional or reputational messages, linked to coordination and public image; and messages based on identity values, which reinforce the legitimacy of the organisation (Coombs, 2007; Austin *et al.*, 2012; Houston *et al.*, 2015). This typology, widely used in crisis communication studies, allows for the evaluation of the strategic coherence of the institutional response and constitutes the conceptual foundation of the classification applied in this research.

In the case of the Military Emergency Unit (UME), these principles took on particular relevance during the forest fires in Spain in July and August 2025. The magnitude of the disaster placed the UME at the centre of communications; therefore, its activity in X serves as an example for analysing how crisis communication strategies are implemented in real time, how transparency and institutional legitimacy are managed, and to what extent social media can reinforce public confidence in a national emergency context (Hernández, 2021).

2.2 *National security in a scenario of unconventional risks*

Over the last two decades, national security has evolved towards a broad and comprehensive concept that incorporates unconventional risks such as natural disasters, pandemics, cyber threats and economic crises. This approach recognises that phenomena associated with climate change—especially high-intensity forest fires, droughts and extreme weather events—can directly affect territorial stability, public safety and the continuity of essential services (Lipsy, 2020; Slawotsky, 2021).

In the case of Spain, the 2021 National Security Strategy explicitly identifies forest fires as a strategic risk of the first order. It emphasises the need to strengthen prevention, response and public communication mechanisms, as well as to ensure coordination between civil administrations, civil protection agencies and the Armed Forces. This broader vision reflects the interdependence between environmental security and national security, positioning climate emergencies as a systemic threat that requires versatile state capabilities and rigorous communication management.

Within this framework, the Armed Forces have taken on a multifaceted role that combines traditional defence with intervention in internal emergencies. Their deployment in crisis situations helps to ensure the protection of the population, territorial stability and support for civil authorities (Cheek *et al.*, 2021; Wilén and Strömbom, 2021). This expansion of functions also implies new communication responsibilities, as military presence in non-war scenarios requires the transmission of clear, verifiable and transparent information that is appropriate to citizens' demands and the requirements of institutional legitimacy in democratic societies.

The Military Emergency Unit (UME) is the main operational instrument of this strategy in Spain. Designed as a rapid response unit for forest fires, floods, snowfalls, health crises and other serious risks, the UME coordinates with regional and local authorities as well as with other units of the Army, Air Force and Navy. Its role is not limited to technical support in the field; it also integrates public communication functions that seek to reinforce the perception of the state's effectiveness, coordination and transparency in emergency situations (Hernández, 2021).

Recent literature has highlighted that the UME's digital presence helps to project both its operational dimension and its institutional identity. Research such as that by Martín García, Buitrago and Martín García (2023) has shown that the unit uses social media to articulate values such as service, commitment and humility, which act as symbols of cohesion in risk scenarios. This combination of operational messages and institutional values allows the UME to reinforce its legitimacy and generate public trust, especially when the emergency has a broad territorial impact and high media coverage.

In highly complex situations, such as the forest fires of 2025, public communication thus becomes an essential component of the security apparatus. Citizens demand constant information on the evolution of the risk, the resources deployed and the effectiveness of the response, and this need places the UME in a strategic role that combines technical action, inter-institutional coordination and communication management. The convergence between national security, climate emergencies and institutional communication constitutes a particularly relevant area of analysis for understanding how public narratives are articulated in contexts of increasing environmental vulnerability.

2.3 Social media and public opinion in times of crisis

The role of social media in shaping public opinion is complex and multidimensional. These platforms offer a space for greater citizen participation, but they also generate risks linked to polarisation, the spread of misinformation and the fragmentation of public discourse. In this sense, a critical and balanced approach is required to harness their innovative potential while mitigating the negative effects that can result from their intensive use.

Given their omnipresence in today's society, various studies have highlighted the relationship between these platforms and emergency management, emphasising

the need to design information technologies that promote participation, volunteer mobilisation and citizen access to reliable data (Veil *et al.*, 2011). One of their main advantages lies in their ability to disseminate news directly and on a massive scale, without the mediation of journalists, which gives messages a perception of greater credibility in certain situations (Colley and Collier, 2009).

Social media has significantly reduced barriers to communication, allowing a wide range of actors—ordinary citizens, opinion leaders, governments, and organisations—to participate in global conversations. This phenomenon contributes to the democratisation of discourse, aided by virality, which enables ideas, news and opinions to spread rapidly and reach mass audiences in a matter of hours (Ortega and Rodríguez, 2021). This influences processes such as ‘agenda setting’, as topics that gain relevance on social media often carry over into traditional political and media debate. Consequently, these platforms act as a ‘social thermometer’ that reflects collective concerns and interests in real time (Yu *et al.*, 2020).

However, along with their advantages, social media also fuels polarisation dynamics. Pariser (2011) introduced the concept of ‘the filter bubble’ to explain how personalisation algorithms generate closed information environments that reinforce prior beliefs, reducing exposure to alternative perspectives. This limitation, which restricts access to diverse information, raises ethical dilemmas of great relevance to democracy and public discourse.

Critically, Morozov (2013) warns of the risks of ‘technological solutionism’, understood as the tendency to propose simple technological responses to complex social problems, ignoring ethical and political dimensions such as privacy or individual autonomy. Similarly, Lovink (2019) analyses how these platforms are designed to encourage constant consumption and addiction, which has a negative impact on users’ well-being and mental health, and highlights the urgent need to redesign them based on ethical parameters that prioritise neutrality and functionality over emotional manipulation.

Finally, the use of algorithms that prioritise content related to individual interests encourages the creation of ‘information bubbles’, where interactions with similar views predominate and the chances of exposure to other perspectives are reduced. This process intensifies the fragmentation of public discourse and hinders the building of social consensus (Patino, 2020). Hence the importance of public bodies managing these platforms appropriately, especially in times of crisis, when institutional credibility and clarity of information are essential.

3 Objectives and methodology

The main objective of this research is to analyse the institutional communication strategy of the Military Emergency Unit (UME) on X/Twitter (@Umegob) during the forest fires that affected Spain in July and August 2025, in order to determine the timeliness, effectiveness and strategic orientation of the messages issued in a national security context. This gives rise to specific objectives:

1. To identify the volume, frequency and evolution of the UME's publications during the different phases of the emergency.
2. Classify messages according to a typology adapted to the UME context (operational/informative, preventive/educational, recognition/adjustment, institutional/reputational and institutional values), evaluating the predominant communicative function.
3. Study thematic clusters and narrative frameworks through exploratory analysis with Graphext and lexical-discursive analysis with T-Lab.
4. Evaluate the engagement generated by the messages, taking into account citizen interaction and the effectiveness of the narrative resources used.
5. Analyse the use of symbolic resources (hashtags, mentions) and their contribution to the visibility and institutional legitimacy of the UME.

This research also adopts a mixed content analysis approach. The study corpus consists of 175 messages, corresponding to all those published by the UME's official account (@UMEGob) in July and August 2025. Data extraction was carried out using the *ExportComments* tool, a software that allows the collection of posts and interactions on X without the need for API access, following a procedure similar to that of other scraping programmes used in research (Marres and Weltevrede, 2013; Bruns and Stieglitz, 2013). The data obtained includes both the full text of the tweets and the date of publication and associated interaction metrics—retweets, likes, and comments—enabling a comprehensive analysis of the institution's communication activity.

The dataset underwent an additional cleansing process to ensure its analytical validity. This included the removal of duplicate posts derived from retweets from the institutional account itself, the standardisation of time formats, and the manual review of textual inconsistencies. These operations were performed using Python libraries designed for data pre-processing.

Once the messages had been collected, they were cleaned and organised using Python libraries, which allowed duplicates to be removed, formats to be standardised, and the data to be prepared for analysis. Initially, a descriptive study was carried out focusing on the frequency of publication, the temporal evolution of the messages, and the levels of interaction generated. This initial step provided a general approximation of the UME's communicative intensity in relation to the emergency and allowed the identification of peaks of activity associated with critical moments.

At a second level, the analysis focused on the thematic and functional classification of the messages. To this end, a typology was developed based on the literature on crisis communication (Coombs, 2007; Spence *et al.*, 2007; Austin *et al.*, 2012; Jin *et al.*, 2014; Houston *et al.*, 2015; Eriksson, 2018), which made it possible to differentiate five main types of publications: operational or informational messages, linked to the deployment of personnel and the evolution of the fires; preventive or educational messages, which include recommendations addressed to the public; messages of recognition or adjustment, expressing support for those involved and gratitude to

the population; institutional or reputational messages, intended to reinforce the image of the UME and highlight coordination with other institutions; and messages of institutional values, which explicitly appeal to the unit's identity principles. In some cases, a subcategory referring to technology and resources was also included, focusing on the use of drones, aircraft and depots. The coding of these categories was initially validated through a manual review of a representative sample of tweets and was subsequently applied to the entire corpus in a supervised manner.

The coding was validated through a double review procedure. Two researchers independently performed the initial categorisation of a representative sample of messages and, after a round of comparison and joint resolution of discrepancies, a high degree of conceptual agreement was reached. Due to the small size of some categories, it was not feasible to calculate reliability coefficients such as Krippendorff's alpha, but the triangulation process ensured the consistency of the classification system applied to the entire corpus.

The third level of analysis focused on exploring discursive and semantic patterns using digital tools. Graphext was used to construct thematic graphs based on the co-occurrence of terms, using the *k-nearest neighbours* methodology and applying the ForceAtlas2 algorithm (Jacomy *et al.*, 2014) for the spatial arrangement of nodes, as well as the Louvain algorithm (Traag *et al.*, 2019) for community detection. This procedure made it possible to identify discursive clusters and examine their evolution over the period analysed.

This analysis was complemented by a manual inspection of the detected clusters in order to verify the semantic coherence of the groupings produced by the algorithm. The process allowed us to identify key terms and recurring conceptual relationships, reinforcing the interpretative validity of the automatically generated discursive patterns.

Finally, the engagement of the posts was evaluated through the relationship between the interactions obtained (retweets, likes and comments) and the number of followers of the account, following the formula proposed by Sued *et al.* (2021) and taken up by Gong and Lyford (2022). In cases where the exact number of followers for each date was not available, relative and comparative values were used to identify the messages that generated the greatest resonance among the public and to assess the real scope of the communication strategy.

Given that the volume of posts per category is uneven—for example, there was only one preventive message compared to more than seventy operational messages—the results related to engagement should be interpreted in a strictly descriptive manner. This imbalance prevents proportional comparisons or statistical inferences between categories, so the values are used only to identify general trends in communication resonance.

4 Results

The analysis of the institutional communication of the Military Emergency Unit (UME) on X/Twitter during July and August 2025 allows us to observe both the

intensity of the digital strategy deployed and the orientation of the messages in a crisis context marked by forest fires.

The weekly evolution of the posts shows a pattern clearly linked to the dynamics of the forest fires (see figure 1). In July, activity was intermittent, with peaks of fourteen and eighteen messages in the middle weeks, followed by a minimum of just four tweets at the end of the month, reflecting less operational pressure during that period. From August onwards, communication intensified steadily: the first week already saw twenty-five messages, a figure that remained high in the second week (twenty-three) and peaked in the third week with forty-four posts, coinciding with the moments of highest incidence of fires and media coverage.

After this peak, activity began to decline, although it remained high in the fourth week (twenty-nine tweets) before closing the month with seventeen. The graph shows that the UME's strategy was essentially reactive, adjusting the volume of messages to the severity of the emergency and reinforcing its digital presence on the days of greatest public visibility.

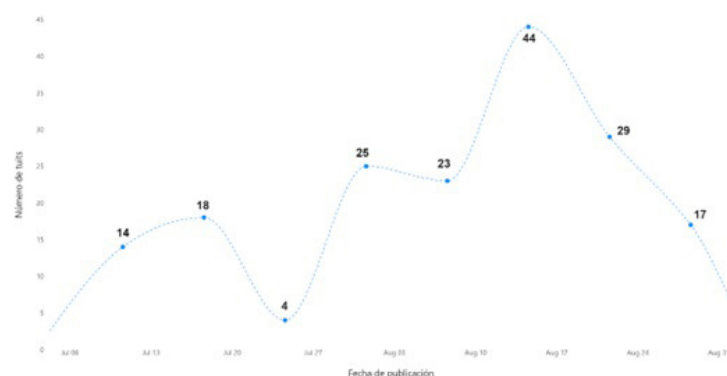


Figure 1. Evolution of the number of tweets published by the UME during July and August 2025.

Source: author's own elaboration

The thematic graph generated from the tweets allows us to visualise the main areas of discourse that structured their communication during the fires (see figure 2). Each colour corresponds to a semantic cluster, i.e. a set of words that appear repeatedly in the same messages and which, as a result, form a specific axis of conversation.

At the centre of the graph are the clusters most closely linked to the operational management of the emergency. These include 'Fire Management and Control Strategies' and 'Forest Fires and Prevention', which group together messages about brigade deployments, fire perimeters, and extinguishing actions. At the top is the cluster 'Extinguishing Missions and Incorporation into Operations', which concentrates narratives about the arrival of personnel at the various scenes. These clusters are interconnected with other supporting topics such as 'Land Drones', reflecting interest in the technological resources used in firefighting.

On the margins of the graph, more peripheral clusters can be seen, such as 'Localities of León and Ourense', which show how fires in specific territories also generated a significant volume of publications. Likewise, the category of 'Military

Operations and Strategic Location' highlights the more institutional and symbolic dimension of the UME, linking its emergency response to the strategic role of the Armed Forces.

The size of the nodes indicates the number of retweets received by each message. Thus, the largest nodes correspond to posts with the greatest public impact, making it possible to identify which topics went most viral. In this case, the clusters directly related to forest fires and the UME's operational management are those that concentrated the messages with the greatest reach, confirming that the public responded more intensely to practical and visual information about the deployment on the ground.

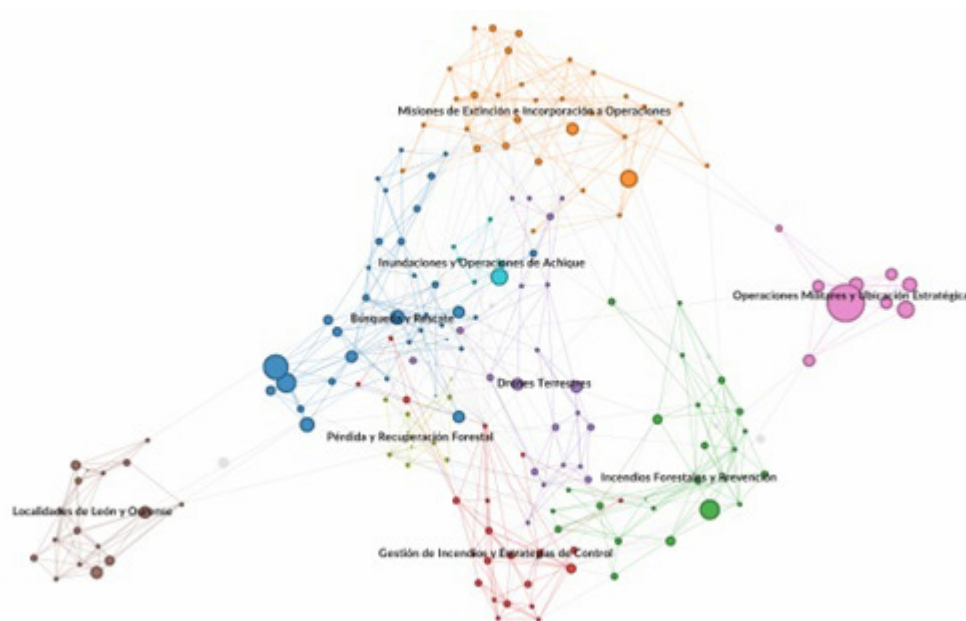


Figure 2. Thematic graph of UME tweets during the fires in July and August 2025. The size of the nodes varies according to the number of retweets obtained. *Source:* author's own elaboration

The analysis of relative engagement allows us to refine the previous results (see figure 3). Although operational messages accounted for the highest absolute number of interactions, when weighted by the number of followers of the UME account (211 400), they are also the ones with the best proportional performance, with an average engagement rate of 0.44%. This figure shows that, compared to other types of messages, informative posts about deployments and actions were the most successful in eliciting a response from the public.

Preventive messages and those appealing to institutional values achieved a very similar average performance, around 0.33%. In other words, both the educational and identity dimensions have the capacity to connect with the audience, even though their volume is lower.

For their part, messages of recognition, despite generating high interaction in absolute terms, have a slightly lower relative engagement (0.28%). This indicates that, although the emotional component mobilises part of the public, it does not always ensure the same virality as operational information.

Institutional posts have the lowest proportional performance (0.23%), reflecting the fact that the public shows less interest in this type of formal content linked to visits or coordination with authorities.



Figure 3. Types of messages published by the UME and their relative engagement during the fires of July and August 2025.
Source: author's own elaboration

Meanwhile, analysis of the hashtags (see figure 4) confirms that the UME's communication combined institutional identity tags with references to affected territories and operational units. The most recurrent tag was #UME (ninety-seven appearances), which acted as an identity mark in almost all messages and ensured the traceability of the conversation.

Next in prominence were military values tags: #Service (seventy-three), #Humility (sixty-six) and #Commitment (forty-four). Their frequent use shows how the UME reinforced its identity narrative, projecting principles associated with the military ethos in parallel with emergency management.

The third block of hashtags corresponds to geographical locations directly affected by the fires: #León, #Ourense, #Zamora, #Asturias and #Cáceres, as well as specific tags for specific fires such as #IFYeres, #IFPorto and #IFBarniedoDeLaReina. This demonstrates a strategy of territorial contextualisation, linking each deployment to its local setting and facilitating citizen identification with the operation.

There are also tags related to the intervention brigades (such as #BIEM5), which reinforce the technical and operational component of the messages.

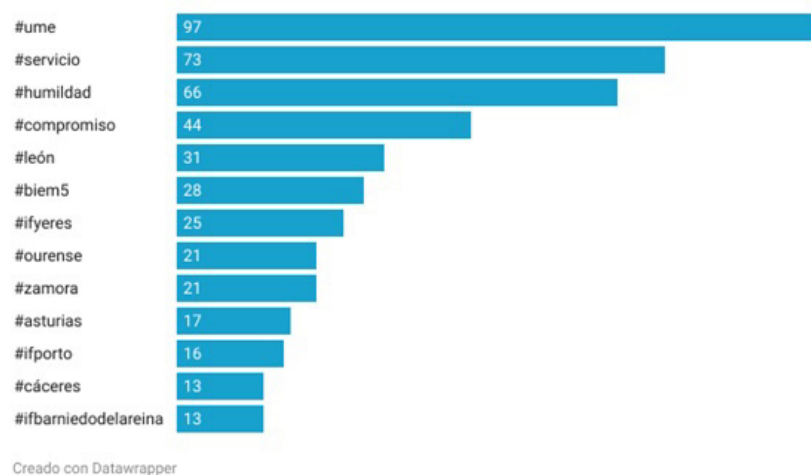


Figure 4. Main hashtags used by the UME in X during the fires of July and August 2025.
Source: author's own elaboration

Analysis of the ten tweets with the highest engagement rate (see table 1) confirms the trend observed in the overall results: the messages that achieve the greatest resonance are those that combine operational information with a strong symbolic component.

The most prominent post, with an engagement rate of 2.26%, reports on a massive deployment of troops—1400 military personnel in direct attack and 2000 in support—accompanied by specific figures on resources and locations. These types of messages, which show the magnitude of the operation, were perceived as highly relevant by the public.

Close behind in terms of impact are messages with emotional hashtags, such as #JuntosEnLaLuchaMilitares (Together in the Military Struggle), which achieved an engagement rate of 2.06%. Here we see how the narrative of unity and shared effort reinforces the connection with the audience. Something similar occurs with posts that incorporate institutional values such as #Compromiso, #Servicio and #Humildad, present in several of the top ten tweets and associated with engagement figures of between 1.2% and 1.5%.

Other examples that generated significant interaction were those that showed the technology used in the emergency, such as the twelve-thousand-litre water tank or the use of FAMET aircraft, messages that offered a component of novelty and operational effectiveness that was highly valued by users.

TABLE 1. TOP 10 POSTS WITH THE HIGHEST ENGAGEMENT.

Message	Author	Engagement rate
'Deployment of the #UME now: 🧑 Military personnel in direct attack: 1,400 🧑 Military personnel on support missions: 2,000 🚚 Total resources: 450 🐦 #IFCangasDelNarcea #Asturias 🐦 #IFSomiedo #Asturias 🐦 #IFYeres #León 🐦 #IFBarniedoDeLaReina #León 🐦 #IFCanalejas #León 🐦 #IFEIPayo #Salamanca'. Source: https://t.co/kMKyCFOjgS	@Umegob	2.26%
'#TogetherInTheFight Military personnel from the #UME carry out a direct attack on the #IFAliseda #Cáceres.@PLANINFOEX@JuntaEx112 #Commitment #Service #Humility'. Source: https://t.co/W5rSB761Io	@Umegob	2.06%
'The #UME has installed a 12,000-litre water tank in the #LaBaña area, allowing helicopters 🚁 to shorten their journeys, optimising time and thus multiplying the number of drops at #IFPorto#Commitment #Service #Humility'. Source: https://t.co/GG5tjfdotI	@Umegob	1.45%
'#IFRequeixoChandreaDeQueixa #OurenseLa #UME carrying out a direct attack on one of the flanks of the 🧑 #IF near the town of #Placín.@incendios085@112Galicia#Commitment #Service #Humility'. Source: https://t.co/nTwg5jOXMi	@Umegob	1.34%
'Soldiers from the Third Intervention Battalion #BIEM3 are currently flying from #Valencia to #León with the mission of reinforcing the #UME units deployed in the north-west of the peninsula.@EjercitoAire @Defensagob #Commitment #Service #Humility'. Source: https://t.co/fhmGlzPqs2	@Umegob	1.26%
'Almost a thousand #UME military personnel are currently deployed on forest firefighting missions in different parts of our country. Deployment 📉#Commitment #Service #Humility'. Source: https://t.co/QQ8Zdlfm4N	@Umegob	1.25%
'#IFPorto, #Zamora #UME military personnel continue with direct attack tasks. A #Dozer machine from the 11th Specialised Engineers Regiment #REI11 of the @EjercitoTierra joins in missions to open firebreaks.#TogetherWeAddUp'. Source: https://t.co/qZiWpJ7ZaF	@Umegob	1.02%
'🚁 COMMITMENT To be where we are needed. The #FAMET air resources of the @EjercitoTierra are transporting military and emergency personnel with fast and efficient flights that reinforce the fight against 🧑 #LCIF campaign#'. Source: https://t.co/7RL2VLISf2	@Umegob	1.01%

Message	Author	Engagement rate
'#UME deployment at this time: 🧑 Military personnel in direct attack: 1,200 🧑 Military personnel on support missions: 2,200 📡 Total resources: 420 📡 #IFCangasDeNarcea #Asturias 📡 #IFJarilla #Cáceres 📡 #IFYeres #León 📡 #IFMaceda #Ourense 📡 #IFRequeixoChandreaDeQueixa #Ourense'. Source: https://t.co/O6vrDAPoU4	@Umegob	0.95%
'📡 #WeContinueMilitary personnel from the #UME carrying out direct attack missions and eliminating secondary hotspots with hand tools at the 📡 #IFOimbra #Ourense.@incendioso85@112Galicia #Commitment #Service #Humility'. Source: https://t.co/r6ndpXZ69T	@Umegob	0.92%

Source: author's own elaboration.

The map shows the territorial distribution of tweets published by the UME during the forest fires of summer 2025 (see figure 5). The analysis shows that mentions were concentrated in a few provinces directly linked to the main emergency hotspots.

The province of León appears as the most prominent territory, with the highest number of mentions in institutional communication. It is followed by Ourense, Zamora and Asturias, all of which were severely affected by the forest fires and accounted for much of the UME's operational activity. In second place are Cáceres, Tarragona, Zaragoza, Salamanca and Toledo, where significant actions were also recorded, although with a lower volume of posts.

The territorial pattern confirms that the UME adapted its digital communication to the geographical location of the fires, reinforcing its visibility where it deployed the most personnel. In this sense, the map shows how the X strategy was closely linked to the operational reality on the ground, prioritising explicit reference to the provinces where the main firefighting operations were taking place.

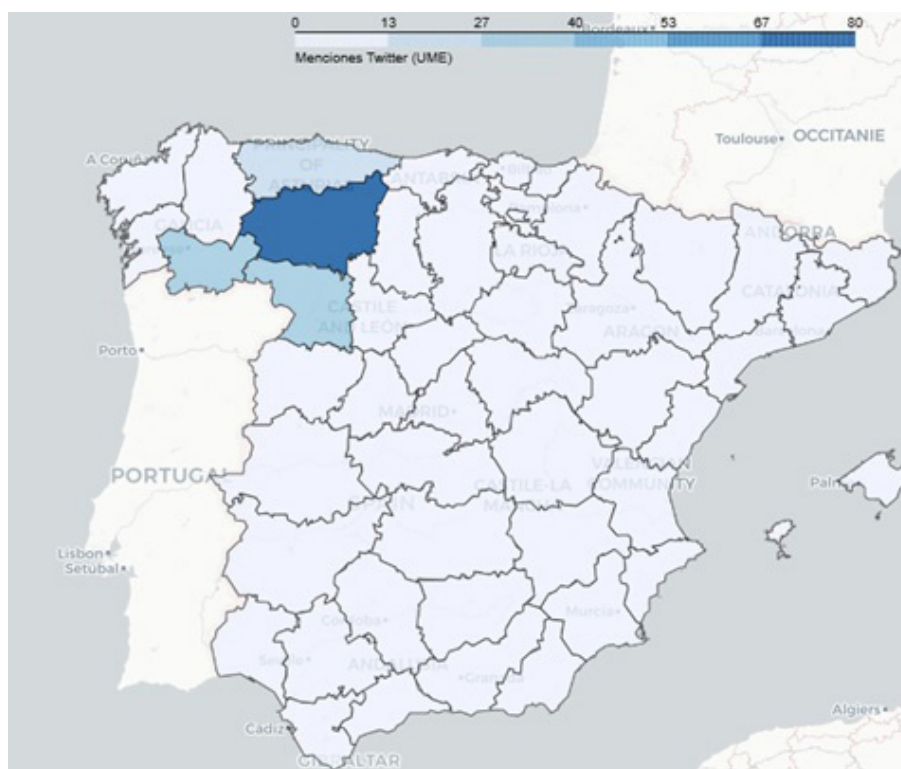


Figure 5. Territorial distribution of mentions of provinces in tweets published by the UME during the fires of July and August 2025. Source: author's own elaboration

5 Discussion

The analysis shows how the UME's institutional communication during the 2025 forest fires was organised around a clear pattern: the priority of operational and informational messages. Most of the publications focused on describing deployments, personnel and resources mobilised, confirming the institution's role as an official source of information in emergency situations. This predominance coincides with what is noted in the literature on crisis communication, which emphasises that institutions tend to reinforce the transmission of technical data in contexts of high uncertainty (Coombs, 2007; Jin, *et al.*, 2014; Austin, *et al.*, 2012).

The engagement obtained reinforces this trend. Operational messages generated the most interaction, indicating that the public particularly valued practical and detailed information about fire management. It is noteworthy that even with a predominantly factual tone, the UME managed to maintain high levels of interaction. This result adds nuance to the debate about what type of content works best on social media during emergencies. Contrary to the idea that emotional or symbolic messages attract the most attention, in this case it was the operational content that resonated most. Recent studies on institutional emergency communication (Eriksson, 2018; Reuter and Kaufhold, 2018) also point in this direction, noting that verified and accurate information remains the most valued resource in crisis scenarios.

In terms of the functional classification of messages, the results show that preventive, recognition and institutional categories carry much less weight. Communication is concentrated in the response phase, confirming the reactive orientation of the UME in its digital strategy. Previous research has warned that this imbalance between response and prevention limits the possibilities for institutions to promote long-term social resilience (Palen and Anderson, 2016; Reuter, *et al.*, 2017).

The territorial analysis also provides significant insights. Mentions were concentrated in provinces directly affected by the fires, such as León, Ourense, Zamora, Asturias and Cáceres. This confirms that the UME adapts its digital discourse to the geography of the emergency, reinforcing its presence in places where it deploys a greater number of personnel. This territorialisation of communication reinforces the visibility of institutional action and allows citizens to identify directly with management on the ground, in line with studies that highlight the importance of contextualising messages in specific scenarios (Houston, *et al.*, 2015; Lachlan, *et al.*, 2016).

Likewise, the temporal dimension shows a clear correlation between the intensity of the fires and the volume of tweets published. The concentration of communication activity in August, with peaks coinciding with the moments of greatest operational deployment, reveals a strategy adjusted to the evolution of the crisis. This reactive nature, dependent on the emergency cycle, is consistent with previous research on the institutional use of social media in natural disasters (Mirbabaie, *et al.*, 2020; Spence, *et al.*, 2018).

The study also reveals some limitations. As mentioned above, the low presence of preventive messages indicates that the UME focuses primarily on the response

phase, leaving communication aimed at citizen preparedness in the background. This imbalance is common in emergency agencies, but it opens a debate on how institutions could leverage their networks to strengthen social resilience beyond the critical moment.

Added to this limitation is another of a methodological nature: the analysis has focused on a single platform, which restricts the view of the UME's communication ecosystem. Future research could compare the strategy on different social networks (Instagram, Facebook, TikTok), as well as on other institutional channels, to assess how formats and languages are adapted to different audiences. Similarly, the study does not incorporate citizen reception beyond engagement metrics, so it would be pertinent to move towards research that includes qualitative perceptions of the audience or that analyses two-way interactions between the UME and citizens.

Another line of future work involves international comparison. It would be valuable to explore how similar response units in other countries use social media during environmental crises and contrast their strategies with those of the UME, which would allow for the identification of transferable best practices and cultural differences in emergency communication management. Likewise, integrating more advanced analysis techniques could enrich our understanding of the discursive frameworks employed by the institution.

The results advance academic knowledge about institutional communication in large-scale emergencies, as they show how intervention agencies prioritise operational messages in digital environments during high-intensity phases, even above adjustment or preventive content. This pattern confirms previous findings on the centrality of technical information in situations of uncertainty (Eriksson, 2018; Reuter and Kaufhold, 2018), but also reveals the need to rebalance communication towards educational formats that contribute to strengthening social resilience. From a practical perspective, the results suggest that the UME could integrate a greater proportion of messages aimed at citizen preparedness, taking advantage of its visibility to disseminate self-protection guidelines before and during the emergency, as well as reinforcing narratives of coordination with other competent civil protection agencies.

Based on these findings, several areas for improvement are proposed for future environmental crises. The systematic dissemination of preventive content—especially in the early or intermediate stages of an emergency—could increase the public utility of institutional profiles and promote safer citizen practices. Likewise, the articulation of messages that combine operational data with visualisations, audiovisual resources or contextualised explanations would facilitate understanding of the risk and increase communicative effectiveness. Similarly, the incorporation of active listening strategies and two-way responses would allow messages to be adapted to emerging information needs and reinforce trust in the institutional apparatus.

An additional limitation of the study is that the analysis did not include audiovisual resources—such as photographs, videos, or micro-infographics—or paralinguistic elements such as emoticons, even though these components are part of the digital narrative and can modulate public perception of risk and citizen attention.

The integration of these variables would allow for a more accurate understanding of the communication strategies adopted by the UME in its publications and their relationship with the levels of interaction generated.

6 Conclusions

This study analysed the UME's institutional communication on social network X during the forest fires of summer 2025 in Spain, highlighting several key findings. The temporal analysis showed that the UME intensified its communication at times of greatest operational deployment, with peaks in August 2025 that coincided with the most serious fires. The strategy was eminently reactive, adjusted to the crisis cycle, and confirms the institution's role as an immediate channel of real-time information.

In this regard, the results show a clear predominance of operational and informational messages, followed at a distance by recognition, institutional, and preventive messages. This distribution confirms the UME's priority of transmitting technical data and updates on mobilised resources, leaving educational or citizen preparedness messages in the background.

On the other hand, the semantic graph and lexical analysis showed that the central themes revolved around firefighting, brigade management and resource mobilisation. The narrative was built around operational efficiency and the deployment of units, reinforcing institutional values such as service, commitment and unity.

Likewise, the engagement study revealed that operational messages also obtained the highest relative interaction, confirming that citizens particularly valued clear and detailed information on the evolution of the emergency. Although messages of recognition generated some emotional response, their impact was lower in comparative terms.

Similarly, the analysis of *hashtags* showed the relevance of identity tags such as #Service, #Humility and #Commitment, as well as the constant mention of directly affected territories (León, Ourense, Zamora). This confirms that the UME territorialised its communication, explicitly linking it to the scenarios of action and reinforcing its institutional legitimacy.

The UME's experience confirms, in short, that social media has become a fundamental pillar of institutional emergency management, and that its effectiveness depends both on the ability to provide accurate and verifiable information and on the willingness to integrate messages that promote collective resilience beyond the critical moment.

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